# The Merano



## PROJECT NOTIFICATION FORM

June 27, 2008

#### Submitted to:

Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

#### Submitted by:

Boston Development Group 93 Union Street, Suite 315 Newton Centre, MA 02459

#### Prepared by:

Epsilon Associates, Inc. 3 Clock Tower Place, Suite 250 Maynard, MA 01754

#### In Association with:

CBT Architects, Inc.
Howard/Stein-Hudson Associates, Inc.
Goulston & Storrs
Bryant Associates, Inc.
McPhail Associates, Inc
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General Information and Project Description

#### 1.0 GENERAL INFORMATION AND PROJECT DESCRIPTION

#### 1.1 Project Summary

Located in Boston's historic Bulfinch Triangle, the Merano Project (the Project) proposed by Boston Development Group, a division of First General Realty Corporation (the Proponent) is an approximately 444,000 square foot (sf) mixed-use development that includes approximately 152,000 sf of hotel uses split between a short-term and a long-term hotel, approximately 213,000 sf of office space, approximately 19,000 sf of retail space on the ground floor, approximately 17,000 sf of restaurant space on the ground floor, and approximately 113 double stacked spaces (226 total spaces) in a parking garage on the second floor. The Project site includes the Massachusetts Turnpike Authority's (MTA) Parcel 1B and two parcels that are or will be owned by affiliates of the Proponent, referred to herein as Parcel 1C and the Limone Parcel, and is bounded by Causeway Street, Beverly Street, Valenti Way, North Washington Street, and buildings along Medford Street, including 239 Causeway Street and 98 North Washington Street. Figure 1-1 shows a perspective of the Project, Figure 1-2 shows the location of the Project site, and Figure 1-3 shows the site plan.

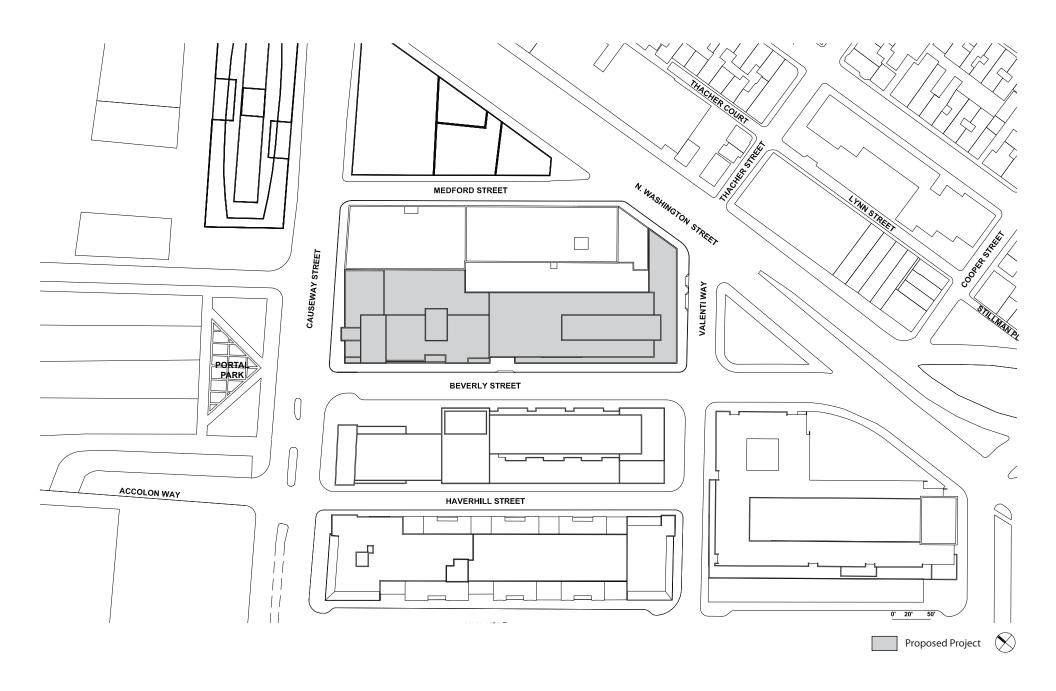
The removal of the elevated Central Artery and Green Line structures allows the reconnection of the North End to other neighborhoods of Boston, transforming the area from the shadowed streets created by the old Central Artery, to a more aesthetically pleasing pedestrian and mixed-use environment. The redevelopment of Parcel 1B will reinforce the ongoing revitalization of the Bulfinch Triangle by infusing the area with street level retail and restaurant uses, and bringing new visitors to the area through the short-term and long-term hotels. The design defines continuous streetwall edges along Causeway Street, Beverly Street and Valenti Way, bringing continuity to the Downtown North and Bulfinch Triangle neighborhoods, and bridging the gap left by the former Central Artery between the North End, the West End, and Beacon Hill neighborhoods. The Project's massing and design will help tie the neighborhoods together by respecting the fabric of the neighborhood which existed before the construction of the Central Artery.













#### 1.2 Development Team

Project Name: The Merano Address/Location: Massachusetts Turnpike Authority Parcel 1B, bounded by Causeway Street, Beverly Street, Valenti Way, North Washington Street and the buildings along Medford Street (239 Causeway Street and 98 North Washington Street) Developer: **Boston Development Group** A division of First General Realty Corp. 93 Union Street, Suite 315 Newton Centre, MA 02459 (617) 332-6400 David Zussman Richard Wakeman, Jr. Architect: CBT Architects, Inc. 110 Canal Street Boston, MA 02114 (617) 262-4354 **Chris Coios** Chris Semmelink Permitting Consultant: Epsilon Associates, Inc. 3 Clock Tower Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Cindy Schlessinger Laura Rome Geoff Starsiak Howard/Stein-Hudson Associates, Inc. Transportation and Parking Consultant: 38 Chauncy Street, 9<sup>th</sup> floor Boston, MA 02111 (617) 482-7080 Keri Pyke Legal Counsel: Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 (617) 482-1776 Matthew Kiefer Peter Kochansky Civil Engineer: Bryant Associates, Inc. 98 North Washington Street, Suite B1 Boston, MA 02114 (617) 248-0300 John Cusack

Geotechnical Engineer: McPhail Associates, Inc.

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#### 1.3 Development Opportunity

#### 1.3.1 Area Background

For more than a decade, the Downtown North area, and the Bulfinch Triangle neighborhood in particular, has been the subject of a number of significant studies. Driven by the opportunities resulting from the Central Artery/Tunnel (CA/T) project, these studies have resulted in a substantial amount of knowledge regarding the area, its history and its character. Additionally, these studies have resulted in an overall planning framework for informing and guiding the area's future urban design and development. Documents such as the North Area Planning Initiative and the Bulfinch Triangle Design and Development Guidelines have articulated a comprehensive vision to shape the area's future urban environment.

The Project has been designed to uphold the principles that define the Bulfinch Triangle Design and Development Guidelines. These guidelines were created from hundreds of hours of work by the City and the community, and honor not only the history of the neighborhood but also its future.

#### 1.3.2 Development Site

The Project site, made available for development through the demolition of the elevated I-93 highway structures, is approximately 54,900 sf in total, and consists of the MTA's Parcel 1B and two parcels that are or will be owned by affiliates of the Proponent, Parcel 1C and the Limone Parcel. Located in the Bulfinch Triangle area, the Project adds to the mix of uses currently being considered or developed in the area, reconnecting the North End to the West End. In addition, the site is located proximate to public transportation facilities at North Station and Haymarket Station and is accessible to the regional roadway network.

#### 1.4 Project Description

#### 1.4.1 Building Program and Project Elements

The Project is a mixed-used development totaling approximately 444,000 sf, including an approximately 153 key, 79,000 sf hotel, an approximately 121 key, 73,000 sf extended stay hotel, approximately 213,000 sf of commercial office space, and approximately 36,000 sf of restaurant and retail uses on the ground floor. One level of above grade parking with approximately 226 valet service parking spaces will be included. The Project also incorporates approximately 7,500 sf of loading, vehicle access, mechanical and storage space. Figures showing the floor plans, elevations, sections, and perspectives of the Project can be found in Appendix A.

Table 1-1 shows the dimensions of the Project.

Table 1-1 Approximate Project Dimensions

Project Element	Dimension
Project Site	54,900 sf*
Short-term stay hotel	153 rooms / 79,000 sf
Long-term stay hotel	121 rooms / 73,000 sf
Office	213,000 sf
Retail	19,000 sf
Restaurant	17,000 sf
Parking	226 spaces / 43,000 sf
Floor Area Ratio	8.37**
Building Heights (measured according to Boston Zoning Code)	149 feet

<sup>\*</sup>Including the site dimensions of 239 Causeway Street and 98 North Washington Street which are owned by the Proponent, the area is approximately 86,000 sf.

#### 1.4.2 Proposed Uses

#### 1.4.2.1 Hotel

Given the entertainment and sports venue at the nearby TD Banknorth Garden, there is a need for hotel space in the neighborhood to accommodate out of town visitors and fans attending events at the Garden. Although there are several other high-end boutique style hotels in the vicinity, the Project proposes two larger, moderately priced hotels, both shorter-term and extended stay hotels, which the Proponent expects will be operated by a

<sup>\*\*</sup> The FAR for the Project alone will be approximately 8.37. The FAR for the Project site and the land and buildings adjacent to the Project and owned by the Proponent, will be approximately 6.63.

single hotel provider, a Courtyard by Marriott and an extended stay Towneplace Suites by Marriott. The hospitality uses proposed as part of the Project will activate the area and complement the retail and restaurant uses within both the Project and the neighborhood.

#### 1.4.2.2 Office

The Project will leverage its proximity to multiple public transportation options through the development of office space. The Project incorporates 213,000 sf of space to be constructed as commercial office space along Valenti Way and the southeastern portion of the Project site.

#### 1.4.2.3 Retail and Restaurant

It is anticipated that the retail and restaurant component of the Project will comprise approximately 36,000 sf. Potential uses include two restaurants on the corner of Causeway and Beverly streets and smaller retail establishments along the remainder of Beverly Street and Valenti Way. By locating these uses along the ground floor and complementing existing and planned retail and restaurant uses across Beverly and North Washington streets, the proposed Project will encourage pedestrian activity in this area of the Bulfinch Triangle, reconnecting pedestrian links from the Bulfinch Triangle Historic District, across the new Greenway and into the Causeway/North Washington Streets District.. The retail and restaurant uses are being targeted to provide activity throughout the day and evening.

#### 1.4.2.4 Parking

The Project will have one level of above grade parking for approximately 226 parked cars, facilitated by a duplex stack/lift system. The garage will have valet service solely for strictly controlled use by both hotel guests and office tenants and visitors. The parking counts are significantly less than a typical project of this size and type in Boston because of the site's proximity to multiple modes of public transportation.

#### 1.4.3 Access and Loading

#### 1.4.3.1 Pedestrian Access

The project will have a positive impact on the pedestrian environment by adding street level pedestrian and retail uses and defining continuous streetwall edges along Causeway Street, Beverly Street and Valenti Way. Pedestrian access to the hotels will be from Beverly Street approximately mid-block, off of a *porte cochere*. The office space will be accessed from further south along Beverly Street. The restaurants and retail spaces are located off Causeway Street, Beverly Street, Valenti Way, and North Washington Street and will activate the pedestrian environment by providing a number of doorway openings and street-level glazing.

#### 1.4.3.2 Passenger Vehicle Access

Passenger vehicles will access the garage from a private drive internal to the site entering off of Beverly Street. The garage will be serviced by a valet system. A *porte cochere* is located at the entrance to the driveway. The two-way garage ramp is located off of the driveway past the *porte cochere*. The driveway also will be accessible to taxis and airport shuttles. The internal drive also connects to Valenti Way.

#### 1.4.3.3 Loading/Emergency Vehicle Access

The loading docks and service entrances to the buildings are located off of the private drive, and are thus shielded from the public. Primary vehicular access to the site is off of Beverly Street, and egress is onto Valenti Way. Emergency vehicles will use the same drive. Both the Beverly Street and Valenti Way access points to the private drive are covered and will provide appropriate clearances for trucks.

#### 1.4.4 Design Concept

Fronting on Causeway and Beverly streets and Valenti Way, the new building will offer an active streetscape with multiple pedestrian entry points and glassy retail storefronts to complement the busy North Station area.

The design of the new building centers on simple volumes for the office and hotel elements, which are broken down in scale through the modulation of façade depth and varying materials of brick, stone, glass and precast concrete. The building fills out the site to the sidewalks, holding the street edge and aligning with adjacent parcels to provide definition to the newly created Beverly Street and Valenti Way.

The scale of the building is highest along Causeway Street where the building, along with its neighbor, Central Artery Parcel 1A, forms a gateway to the city from the north and fronts on Portal Park and the Leonard P. Zakim Bridge. Along Beverly Street, the building sets back above the eighth floor and is reduced in height to be in scale with adjacent blocks and buildings.

The hotel lobbies are envisioned on the third floor, keeping the maximum ground floor footprint available for restaurant and retail uses.

#### 1.4.5 Project Alternatives / Evolution of Design

Originally the Proponent envisioned a mixed-use development with hotel, office, residential, retail and parking uses constructed on Parcel 1B and Parcel 1C, and on the adjacent buildings owned by the Proponent (239 Causeway Street and 98 North Washington Street). Due to market conditions and financing constraints, the program was changed to incorporate hotel, office, retail and parking, eliminating the residential component. To preserve the sight lines of residents at Strada 234, the program was

changed further by eliminating the proposed construction above the existing buildings at 239 Causeway and 98 North Washington streets. The Project has been designed with a vehicular drop off from Beverly Street and vehicular access and egress from both Beverly Street and Valenti Way, thus keeping loading functions and parking within the site.

#### 1.5 Preliminary Project Schedule

It is anticipated that site work will begin in fall 2008, and construction will take approximately 24 months, starting in the first quarter of 2009.

The City of Boston allows construction work from 7:00 a.m. to 6:00 p.m. Monday through Friday. Construction outside of those hours requires a permit. Typical construction hours for the Project will comply with the City's regulations, with no work anticipated on the weekends. In the event that weekend work is necessary, the Proponent will obtain required City approvals.

#### 1.6 Public Benefits

The Project will continue the ongoing redevelopment of the Bulfinch Triangle. The Project site will be transformed from a vacant parcel into a modern mixed-use development with active ground floor uses, and a new aesthetically pleasing pedestrian environment. Additional benefits to the City are described below.

#### Smart Growth/Transit-Oriented Development

Consistent with smart growth principles, the Project focuses development in an area that was previously developed (i.e. the elevated I-93 and Green Line). In addition, the Project is located proximate to public transportation – the Green, Orange Line and commuter rail at North Station and bus service at Haymarket and on Causeway Street – and has a mix of complementary uses, including office, hotel, and retail.

The Proponent is committed to implementing a Transportation Demand Management (TDM) program that supports the City's efforts to reduce dependence on the automobile by encouraging travelers to use alternatives to driving alone, especially during peak time periods, and by reducing parking supply. Proposed TDM measures include limiting parking, designating a transportation coordinator, and providing bicycle racks. Additional TDM measures are described in Section 2.3.4.

#### Design

The site will be developed from a vacant lot to an active mixed-use development with retail and restaurant uses on the ground level and two hotel elements (one extended stay and the other over night). The design of the new building centers on simple volumes for the office and hotel elements of the program, which are broken down in scale through the modulation of façade depth and varying materials of brick, stone, glass and precast

concrete. The building fills out the site to the sidewalks, holding the street edge and aligning with adjacent parcels to provide definition to the newly created Beverly Street and Valenti Way. The development will enhance pedestrian access around and through the site by providing wide sidewalks, and lighting. The building will be designed to be LEED certifiable, consistent with the requirements of Article 37 of the Boston Zoning Code. The development of this vacant site with hotel, office and retail uses will promote public safety, encourage walking and transit usage and improve safety and the pedestrian environment.

#### Improved Street and Pedestrian Environment

New ground-level retail and an improved streetscape, consistent with other developments in the area, will provide an improved pedestrian environment in the Bulfinch Triangle area for residents and visitors. The Project's development of a continuous streetwall along Causeway Street, Beverly Street and Valenti Way will further the ongoing creation of a new pedestrian district on the Bulfinch Triangle parcels. In addition, the Proponent has committed donate \$12,000 toward the Bulfinch Triangle Streetscape Improvement Initiative.

#### Bulfinch Triangle Traffic Study

The Proponent will provide \$50,000 toward the Bulfinch Triangle traffic study intended to improve traffic in the area and mitigate future traffic impacts. The study will be directed by the Boston Transportation Department (BTD) and will likely involve other Bulfinch Triangle developers.

#### Boston Crossroads Initiative

The Proponent will assist in the implementation of the Boston Crossroads Initiative, a planning effort to redesign and revitalize the roads that cross the Rose Fitzgerald Kennedy Greenway and connect people to neighborhoods and destinations on either side. In particular, the Proponent is engaged in the ongoing public planning process for Causeway Street, which will create a more pedestrian-oriented corridor, strengthening the connection between the West End and the North End, and will donate \$300,000 to the Initiative or perform Crossroads-approved work adjacent to the Project site.

#### Sustainable Design/ Green Building

In keeping with the City of Boston's Article 37 Green Buildings Zoning, the Project will achieve, at a minimum, the LEED certified level of 26-32 points. More information on sustainable design can be found in Section 3.12.

#### Increased Employment

The Project will create approximately 200 to 240 construction jobs and will house approximately 275 permanent jobs. The permanent jobs will result from the proposed office, retail, and hotel components.

#### New Property Tax and Hotel Tax Revenues

The new development will generate approximately \$2,000,000 in annual property taxes, approximately \$1,900,000 in annual state and local occupancy tax revenues, and approximately \$500,000 in Convention Center tax revenues.

#### Linkage

The Project will generate approximately \$1,800,000 in housing linkage funds and approximately \$360,000 in jobs linkage funds to the City of Boston.

#### 1.7 Legal Information

#### 1.7.1 Legal Judgments Adverse to the Proposed Project

A portion of the Project site, described in Section 1.7.4 as Parcel 1C, is the subject of two related lawsuits brought by an affiliate of the Proponent, which owns the parcel, against the Commonwealth of Massachusetts. The actions challenge the sufficiency of awards paid by MHD for takings of easements used by the Massachusetts Highway Department (MHD) during the construction of the Central Artery project. The Proponent is in negotiations with MHD and the MTA to resolve the dispute.

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

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

#### 1.7.3 Site Control

The Project site consists of three separate parcels that will be owned by affiliates of the Proponent at the time of commencement of construction. One portion of the site, sometimes called Parcel 1C, is an approximately 17,460 sf parcel, currently vacant, owned by the Proponent's affiliate, Beverly-Boston Limited Partnership, by Deed recorded in the Suffolk County Registry of Deeds at Book 21536, Page 32. First General Realty Corp., another affiliate of the Proponent, has entered into an agreement to purchase a second portion of the Project site, an approximately 2,179 sf parcel at the corner of North Washington Street and Valenti Way.

The largest portion of the Project site is an approximately 34,900 sf parcel (Parcel 1B) acquired by the Massachusetts Turnpike Authority (MTA) by Confirmatory Deed from MHD dated December 19, 2007 and recorded at Book 42937, Page 147. After a public

procurement process, the MTA selected the Proponent as the Developer of Parcel 1B, and the MTA and the Proponent entered into a Development Agreement for the site, which requires the parties to negotiate a ground lease for Parcel 1B. The parties are currently negotiating the terms of the ground lease.

The Project site includes several easements in favor of MHD relating to the Central Artery project tunnel facilities located within the Project site. The Proponent is working with the MTA to confirm that those easements will not interfere with the construction of the Project.

#### 1.7.4 Legal Description - Site Limits

Being a certain parcel of land in the City of Boston, County of Suffolk in the Commonwealth of Massachusetts, more particularly bounded and described as follows:

Beginning at the intersection of the northwesterly sideline of Anthony "Rip" Valenti Way and the northeasterly sideline of Beverly Street; thence running by said sideline of Beverly Street approximately,

N 40°10'50" W, a distance of approximately 446.91 feet to a point on the southeasterly sideline of Causeway Street; thence turning and running along said sideline,

N 53°56'54" E, a distance of approximately 123.78 feet to a point at land now or formerly of Boston Limited Partnership; thence turning and running by said land,

S 40°00'26" E, a distance of 160.09 feet to a point at land now or formerly of 98 North Washington Street, LLC; thence turning and running by said land,

S 50°05'54" W, a distance of 10.36 feet to a point; thence turning and running by said land,

S 40°00'26" E, a distance of 119.46 feet to a point; thence turning and running by said land,

N 49°59'34" E, a distance of 10.43 feet to a point; thence turning and running by said land and land now or formerly of the North Washington Street Condominium and to land now or formerly of Peter and Olympia Limone,

S 40°00'26" E, a distance of 120.40 feet to a point at land now or formerly of said Limone; thence turning and running by land of said Limone,

N 50°12'33" E, a distance of 56.22 feet to a point on the westerly sideline of North Washington Street; thence turning and running by said North Washington Street,

S 4°17'56" E, a distance of 49.04 feet to a point at the intersection of the westerly sideline of North Washington Street and the northwesterly sideline of Anthony "Rip" Valenti Way; thence turning and running by the sideline of said Anthony "Rip" Valenti Way,

S 50°4'53" W, a distance of 52.60 feet to a point; thence turning and running by said sideline,

S 48°51'59" W, a distance of 13.80 feet to a point; thence turning and running by said sideline approximately,

S 51°13'14" W, a distance of approximately 83.43 feet to the point of beginning.

Said parcel has an approximate area of 54,900 square feet.

#### 1.8 Regulatory Controls and Permits

Table 1-2 is a list of federal, state and local agencies from which permits or other actions may be required.

Table 1-2 Anticipated Permits, Reviews and Approvals

AGENCY	PERMIT
FEDERAL	
United States Environmental Protection Agency	National Pollution Discharge Elimination System National Environmental Policy Act (NEPA) Review (if required)
Federal Highway Administration	Approval of Non-Highway Use of Highway ROW Surplus approval Section 106 Review
State Historic Preservation Office (Massachusetts Historical Commission)	Section 106 Review
Federal Aviation Administration	Notice of Construction
STATE	
Executive Office of Environmental Affairs, Massachusetts Environmental Policy Act (MEPA) Office	MEPA Review
Executive Office of Transportation and Construction	Approvals under MGL Ch40 Section 54a (if required)
Massachusetts Historical Commission	State Register Review
Department of Environmental Protection Division of Water Pollution Control	Sewer Extension/Connection Permit
Department of Environmental Protection	Notification of Demolition and Construction
Massachusetts Water Resources Authority	Sewer Use Discharge Permit; Construction Dewatering Permit
Massachusetts Turnpike Authority	Execution of Lease Approval of Project Design

Table 1-2 Anticipated Permits, Reviews and Approvals (Continued)

AGENCY	PERMIT
CITY OF BOSTON	
Boston Redevelopment Authority	Article 80 Review
Boston Civic Design Commission	Design Approval
Boston Transportation Department	Construction Management Plan
	Transportation Access Plan Agreement
Boston Zoning Board of Appeal	Zoning Relief
Boston Landmarks Commission	Party to Section 106 Review; Article 85 Demolition Delay Review
Boston Parks and Recreation Commission	Approval of Demolition and Construction within 100 feet of park or parkway
City of Boston Air Pollution Control Commission	Parking Freeze Permit Exemption
Boston Public Safety Commission, Committee on	Permit to Erect and Maintain Parking Garage
Licenses	Flammable Storage License
Boston Public Improvement Commission	Sidewalk and Street Related Permitting
Boston Water and Sewer Commission	Site Plan Approval
	Utility Connection Permits
City of Boston Public Works Department	Curb Cut Permits (minor/driveways)
	Street Occupancy Permits (construction)
Boston Fire Department	Approvals for fire protection systems
Boston Inspectional Services Department	Building Permit, Occupancy Permits

#### 1.9 Zoning

Based on the Boston Zoning Code's (the Code) maps, Parcel 1B is located within both (1) Parcel 1 of the Central Artery Special District governed by Article 49 of the Code; and (2) the Bulfinch Triangle/Central Artery Area of the Bulfinch Triangle District governed by Article 46 of the Code, while Parcel 1C and the Limone Parcel appear to be located only with the General Area (not the Bulfinch Triangle/Central Artery Area) of the Bulfinch Triangle District. The Proponent will seek confirmation from the Inspectional Services Department and the Boston Zoning Commission as to the precise zoning boundaries.

The Project site is within the Restricted Parking Overlay District and the Groundwater Conservation Overlay District.

Section 49-5 of the Code states that parcels within Parcel 1 of the Central Artery Special District "shall also be deemed part of" the Bulfinch Triangle District governed by Article 46, although Article 46-5 states that certain provisions of Article 46 do not apply to the Bulfinch Triangle/Central Artery Area. Both Articles of the Code thus apply to the Project site. Section 46-5 of the Code provides that for properties within the both the Central Artery Special District and the Bulfinch Triangle/Central Artery Area of the Bulfinch Triangle

Special District, the use, dimensional, and certain other requirements of Article 49 supersede the requirements of Article 46.

In the Central Artery Special District, office and local retail and services uses are allowed. Hotel use is not addressed, so the Proponent assumes that zoning relief is required for hotel use and for uses accessory to the hotel, such as the pool and health club. Parking is listed as a conditional use, and will require zoning relief. In the Bulfinch Triangle District, office, retail, and hotel uses are all allowed. Parking accessory to hotel uses is allowed, but parking accessory to office use is conditional and will require zoning relief.

The maximum building height on Parcel 1 of the Central Artery Special District is 100 feet, and the maximum floor area ratio (FAR) is 8.0. In the Bulfinch Triangle District, the maximum building height for projects that undergo Large Project Review is also 100 feet, and the maximum FAR is 8.0 for projects that undergo Large Project Review and include only the types of uses that the Project will include. Portions of the proposed building will be in excess of 100 feet, and will require zoning relief. The FAR of the Project will be approximately 8.37, although the combined FAR of the Project site and the adjacent properties owned by affiliates of the Proponent is approximately 6.63.

Article 49 and Article 46 of the Code provide that on Parcel 1 in the Central Artery Special District, and in the Bulfinch Triangle District, buildings taller than 80 feet along Causeway Street must be set back a minimum of 25 feet above a height of 65 feet. For the portions of the building outside of Parcel 1, Section 46-8.2(b) requires that buildings on other streets be built coextensive with the street wall of the block. The Proponent expects to seek zoning relief from the setback requirement.

The Project site is within the Groundwater Conservation Overlay District, and will need to achieve consistency with the requirements of Article 32 by ensuring that the Project will have no negative impact on groundwater at the Project site or adjacent sites.

Both Article 49 and Article 46 supersede the minimum off-street parking regulations of Article 23; neither mandates specific minimum parking requirements.

Article 49 supersedes the off-street loading requirements of Article 24, but does not contain specific off-street loading requirements. Article 46 states that the sufficiency of off-street loading facilities for projects subject to Large Project Review shall be determined through such review.

Transportation

#### 2.1 Introduction

The Project will be located within the Bulfinch Triangle in the North Station area of Boston (see Figure 2-1). The Project site is bounded by Causeway Street to the north, Valenti Way to the south, an alley and several mid-rise office buildings fronting Medford Street to the east, and Beverly Street to the west.

The site currently contains a surface parking lot at the corner of North Washington Street/Valenti Way; the remainder of the site is grass.

The Project will include:

- ◆ Approximately 213,000 square feet of office space;
- Approximately 19,000 square feet of ground floor retail;
- ♦ Approximately 17,000 sf of restaurant space;
- ♦ Approximately 274 hotel rooms; and
- ♦ Up to 226 above-ground garage parking spaces.

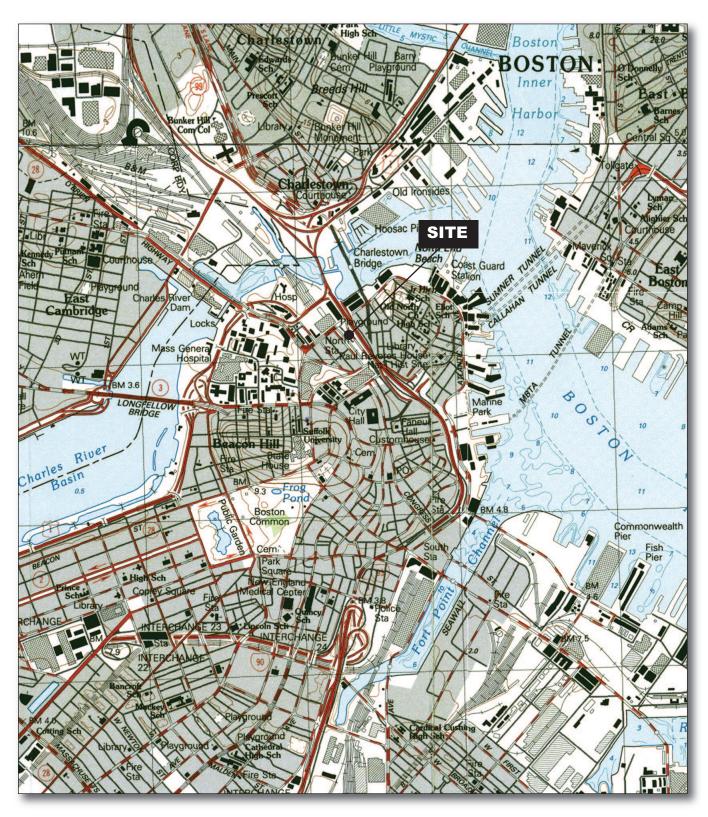
Internal vehicular site access to the parking garage will be via a *porte cochère* connecting Beverly Street and Valenti Way.

The ground floor will be occupied by the *porte cochère*, ground floor retail, lobby areas for the hotel and office uses, and two loading and service areas off the private drive from Valenti Way. Up to 226 stacked parking spaces will be located above the ground floor. Parking is proposed for both the hotel and office uses. The remaining floors will be occupied by hotel and office space.

Under Build Conditions, all intersections and approaches operate at the same LOS as under No-Build Conditions during peak hours, with the exception of North Washington Street/Cross Street/Cooper Street during the a.m. peak hour, which worsens from overall LOS B to overall LOS C. This would still be an acceptable LOS during peak hours for this area.

#### 2.1.1 Purpose, Scope, and Methodology of the Transportation Analysis

The study team conducted this transportation study and supporting analysis in accordance with Boston Transportation Department and Massachusetts Environmental Policy Act guidelines. Although BTD has not yet issued a formal Transportation Access Plan Scope, the Proponent developed the following scope of work in conjunction with BTD staff:





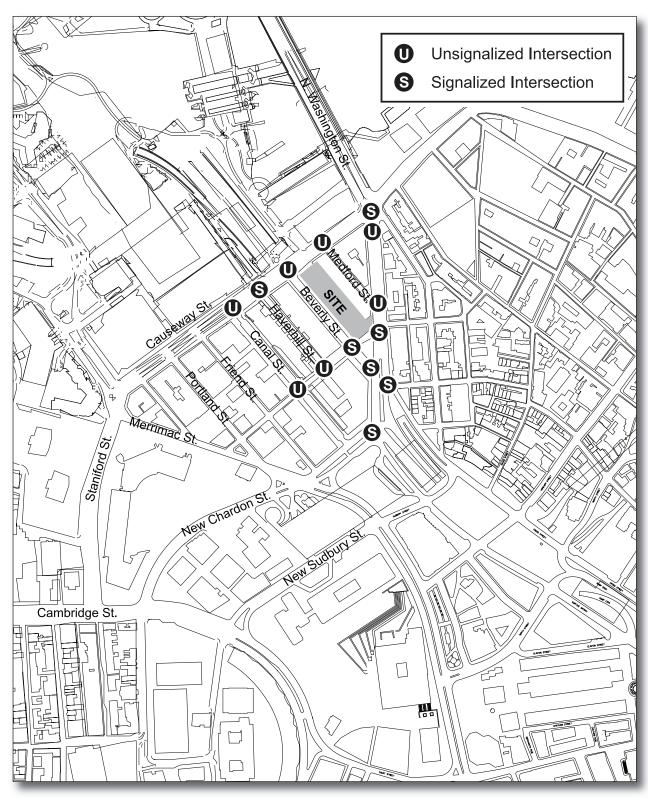


- ◆ Definition and presentation of existing transportation conditions in the study area, including traffic operations, roadway capacities, parking, public transit, pedestrian circulation, bicycle accommodations, loading, and site conditions;
- Evaluation of the Project's future, long-term impacts on traffic, public transit, pedestrian, bicycle, and parking conditions. This section evaluates future transportation conditions and assesses potential transportation impacts associated with the development and other neighboring projects. The analysis evaluates long-term impacts for the year 2013, based on a five-year horizon from the existing year, and identifies expected roadway, parking, transit, pedestrian, and loading capacities and deficiencies. It includes the following scenarios:
  - The No-Build Scenario (2013), based on projections and identification of other proposed or planned developments and roadway changes in the vicinity of the site.
  - The Build Scenario (2013), including specific travel demand forecasts for the Project.
- Identification of appropriate measures to mitigate Project impacts identified in the above sections, including roadway geometric/traffic signal and surveillance improvements, pedestrian amenities, a transportation demand management program, participation in transportation management associations (TMAs), and long-term Project impact monitoring.
- Evaluation of the Project's short-term traffic impacts related to construction activity.

#### 2.1.2 Study Area

As determined by BTD and the Project team, the study area is generally bounded by Canal Street to the west, Causeway Street to the north, North Washington Street to the east, and Valenti Way to the south. The study area infrastructure, including roadways, sidewalks, and intersections, is undergoing a significant transformation with the final work on the Central Artery/Tunnel (CA/T) project. Several roadways in the study area are not yet open to traffic, while others will have traffic circulation changes. For this reason, the study team analyzed 14 study area intersections for this Project — some under current conditions and all under future conditions. As shown in Figure 2-2, the intersections analyzed, by condition, include:

- North Washington Street/Causeway Street (Keany Square) (all conditions);
- North Washington Street/Valenti Way/Thacher Street (all conditions);
- North Washington Street/Beverly Street (all conditions);





Not to Scale



- North Washington Street/Cross Street/Cooper Street/Sumner Tunnel Off-ramp (all conditions);
- ◆ New Chardon Street/Surface Artery/I-93 Southbound and Callahan Tunnel On-ramp and Sumner Tunnel Off-ramp (all conditions);
- Causeway Street/Haverhill Street/Legends Way (all conditions);
- North Washington Street/Endicott Street (all conditions);
- North Washington Street/Medford Street (all conditions);
- Causeway Street/Canal Street (all conditions);
- Causeway Street/Medford Street (all conditions);
- ◆ Canal Street/Valenti Way (all conditions);
- Valenti Way/Beverly Street (No-Build and Build);
- ◆ Causeway Street/Beverly Street (No-Build and Build); and
- ♦ Valenti Way/Haverhill Street (No-Build and Build).

#### 2.2 Existing Transportation Conditions

This section describes existing study area roadway geometry, intersection traffic control, peak-hour vehicular and pedestrian volumes, transit availability, parking supply, and loading conditions. Several roadways in the Bulfinch Triangle that serve the Project, including Beverly Street, Haverhill Street, and portions of Valenti Way, are not yet open to traffic. Other streets have planned traffic circulation changes.

The study area roadways and intersections examined under Existing, No-Build, and Build Conditions are described below. New roadways and intersections, or those with circulation changes as a result of final CA/T improvements in the area, are described in the section on No-Build Conditions.

#### 2.2.1 Existing Roadway Conditions

The study area includes the following roadways, which are categorized according to the Massachusetts Executive Office of Transportation Office of Transportation Planning (EOT-OTP) functional classifications:

North Washington Street, an urban principal arterial, runs north-south from the Cooper Street/Cross Street/Sumner Tunnel ramps to Charlestown. In the study area, North Washington Street is two-way, with two travel lanes in each direction. Parking is not

allowed between the ramps and Cooper Street, but is allowed on both sides from Thacher Street/Valenti Way north to Causeway Street.

Causeway Street, an urban minor arterial, runs east—west from Merrimac Street to Prince Street. West of the intersection with Canal Street, Causeway Street has two travel lanes in each direction and a 10-foot raised median. East of Canal Street, Causeway Street has three travel lanes in each direction. Taxi stands are located on the north and south sides of Causeway Street west of Canal Street. Parking is not allowed east of Canal Street, though shuttle bus stops are located on both sides of the roadway.

*Valenti Way,* a local street, runs east—west from Merrimac Street to North Washington Street, but the segment between Canal Street and Beverly Street is not open to traffic. West of Canal Street, Valenti Way is one-way eastbound, with one travel lane and parking on the north side. Between North Washington Street and Beverly Street, Valenti Way is one-way westbound with three travel lanes, with no parking allowed along the roadway.

*Thacher Street,* a local street, runs eastbound from North Washington Street to Prince Street in the North End. In the study area, Thacher Street is one-way eastbound, with one travel lane. Parking is provided on both sides of the street.

*Beverly Street,* a local street, runs one-way southbound from Causeway Street to North Washington Street. Similar to Haverhill Street, Beverly Street is fully constructed but is currently closed to vehicular traffic between Causeway Street and Valenti Way. Parking is not allowed along Beverly Street.

*Cross Street,* an urban principal arterial, runs north—south from Atlantic Avenue to North Washington Street. Cross Street provides direct access from I-93 northbound to the study area. Within the study area, Cross Street has two northbound travel lanes and a sidewalk on the east side, with no parking allowed along the roadway.

*Cooper Street,* a local street, runs westbound from Salem Street in the North End and ends at Cross Street. In the study area, Cooper Street is one-way westbound, with one travel lane. Parking is provided on both sides of the street.

*New Chardon Street,* an urban principal arterial, runs east–west from Cambridge Street to North Washington Street. New Chardon Street westbound consists of three travel lanes; New Chardon Street eastbound consists of two travel lanes. No parking is allowed on either side of the roadway.

The *Surface Artery*, an urban principal arterial, runs one-way southbound as a continuation of North Washington Street from New Chardon Street to Kneeland Street. Within the study area, the Surface Artery consists of two travel lanes, with some parking allowed on the west side of the roadway.

*Haverhill Street*, a local street, runs one-way northbound from Valenti Way to Causeway Street. The roadway is completely constructed but remains closed to vehicular traffic. Parking is prohibited on Haverhill Street.

*Legends Way*, a private way, serves as an access and service driveway to the rear of the TD Banknorth Garden.

*Endicott Street,* a local street, is one-way northbound between Cross Street and North Washington Street. Parking is allowed on both sides of this one-lane roadway.

*Medford Street,* a local street, runs one-way northbound from North Washington Street to Causeway Street. Medford Street has one travel lane; parking is allowed on both sides of the roadway.

*Canal Street,* an urban minor arterial, runs north–south between Causeway Street and New Chardon Street. It has one travel lane in each direction, with metered parking on both sides of the street.

# 2.2.2 Existing Intersection Conditions

The following descriptions of the study area intersections include geometry, pedestrian facilities, and intersection traffic control. The intersections analyzed under Existing Conditions were selected in coordination with BTD.

### 2.2.2.1 Signalized Intersections

North Washington Street/Causeway Street (Keany Square). This four-way intersection is signalized. The North Washington Street northbound approach consists of a 10-foot, shared left-turn/through lane and an 11-foot, shared through/right-turn lane. Left turns are not allowed during peak periods (7:00–10:00 a.m. and 3:30–6:30 p.m.). The North Washington Street southbound approach over the Charlestown Bridge consists of a 10-foot, exclusive left-turn lane; a 10-foot, exclusive through lane; a 10-foot, shared through/right-turn lane; and an 11-foot, exclusive right-turn lane. The Causeway Street eastbound approach comprises three travel lanes: an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive right-turn lane. The Causeway Street westbound approach consists of a shared left-turn/through lane, an exclusive through lane, and a channelized right-turn lane. Crosswalks and handicapped ramps are provided across all approaches. Boston's Freedom Trail crosses Causeway Street at this intersection. Pedestrian phases are concurrent with vehicular movements.

North Washington Street/Valenti Way/Thacher Street is a four-way signalized intersection, with Valenti Way and Thacher Way operating one-way away from North Washington Street. The North Washington Street northbound approach comprises two travel lanes: one exclusive left-turn lane and one shared through/right-turn lane. The North Washington Street southbound approach has two lanes: one shared left-turn/through lane and one

shared through/right-turn lane. Thacher Street is one-way eastbound, with one receiving lane. Valenti Way is one-way westbound and has three receiving lanes. Crosswalks and handicapped ramps are provided across Thacher Street, North Washington Street, and Valenti Way. Pedestrian phases are concurrent with vehicular movements.

**North Washington Street/Beverly Street** is a signalized T intersection with two approaches. The Beverly Street southeast-bound approach provides three right-turn travel lanes; the North Washington Street southbound approach provides three through travel lanes. Crosswalks and handicapped ramps are provided across both approaches. The pedestrian signal phases are concurrent with vehicular movements.

North Washington Street/Cross Street/Cooper Street/Sumner Tunnel Off-ramp is a signalized intersection with all approaches operating one-way onto North Washington Street. The Cooper Street westbound approach operates with one right-turn lane. Cross Street northbound operates with two through lanes. Vehicles exiting Sumner Tunnel travel northeast on the off-ramp and utilize two through lanes. North Washington Street comprises two receiving lanes for these roadways. Crosswalks and handicapped ramps are provided across Cross Street, Cooper Street, and the off-ramp. Pedestrian phases are concurrent with vehicular movements.

New Chardon Street/Surface Road/I-93 Southbound and Callahan Tunnel On-ramp and Sumner Tunnel Off-ramp is a signalized intersection with four legs but only three approaches. The westbound approach at this intersection accommodates vehicles exiting the Sumner Tunnel to the Surface Road or New Chardon Street, and comprises two 17- foot lanes. New Chardon Street eastbound consists of two through lanes to the on-ramp and a 50-foot long, right-turn storage lane for vehicles turning onto Surface Road southbound. Surface Road is one-way southbound at this intersection and comprises four travel lanes: two left-turn lanes, one through lane, and one shared through/right-turn lane. Left-turning vehicles use the on-ramp to access Logan International Airport or I-93 South, while vehicles traveling through continue on Surface Road, and vehicles turning right use New Chardon Street. Crosswalks are provided across New Chardon Street and North Washington Street; both provide handicapped ramps. Pedestrian phases are concurrent with vehicular movements.

Causeway Street/Haverhill Street/Legends Way is a signalized intersection currently operating as a T intersection. Haverhill Street is closed to vehicular traffic. The Causeway Street eastbound approach comprises an exclusive left-turn lane and three through lanes. The Causeway Street westbound approach comprises two general travel lanes. The Legends Way southbound approach consists of a driveway for TD Banknorth Garden, with negligible traffic. Crosswalks and handicapped ramps are provided for all approaches. Pedestrian phases are concurrent with vehicular movements.

# 2.2.2.2 Unsignalized Intersections

North Washington Street/Endicott Street is an unsignalized T intersection. Endicott Street is one-way westbound and intersects with North Washington Street, creating a fifth leg at the signalized intersection of Causeway Street/North Washington Street. Due to the low volumes and location, the westbound Endicott Street approach is stop-controlled. A crosswalk is provided across Endicott Street.

North Washington Street/Medford Street is an unsignalized T intersection, with Medford Street operating one-way northbound away from the intersection. The North Washington Street northbound approach has two travel lanes: a 10-foot, shared left-turn/through lane and a 12-foot, exclusive through lane. The North Washington Street southbound approach has a 10-foot, exclusive through lane and a 12-foot, shared through/right-turn lane. Parking lanes are provided on both sides of North Washington Street. A crosswalk and handicapped ramps are provided across Medford Street.

Causeway Street/Canal Street is an unsignalized, four-way intersection. Causeway Street runs east—west and is divided by a raised median with an opening at Canal Street. The Causeway Street eastbound approach consists of a 15-foot through lane and a 14-foot, shared through/right-turn lane. The Causeway Street westbound approach consists of three 11-foot travel lanes: a shared left-turn/through lane, a through lane, and a shared through/right-turn lane. The Canal Street northbound approach consists of an 11-foot, shared left-turn/through/right-turn travel lane controlled by a stop sign. A driveway to the TD Banknorth Garden parking lot is provided as the southbound approach to this unsignalized intersection. All approaches have sidewalks. Crosswalks are provided across Canal Street and both Causeway Street eastbound approaches.

Causeway Street/Medford Street is an unsignalized T intersection. The Causeway Street eastbound approach consists of three 10-foot through lanes. The Causeway Street westbound approach comprises two 13-foot through lanes. Medford Street is a one-way northbound street, with the northbound approach comprising a single, 11-foot, shared left-turn/ right-turn lane controlled by a stop sign. All approaches have sidewalks; a crosswalk is provided across Medford Street.

Canal Street/Valenti Way is an unsignalized, four-leg intersection. Valenti Way runs one-way eastbound and is controlled by a stop sign. The Valenti Way eastbound approach consists of a nine-foot, shared left-turn/through and a nine-foot, exclusive right-turn lane. The Canal Street northbound approach consists of an 11-foot, shared left-turn/through/right-turn lane. The Canal Street southbound approach consists of a 12-foot, shared left-turn/through/right-turn lane. The westbound approach consists of an unmarked construction driveway with negligible traffic that is omitted from the analysis. Crosswalks and handicapped ramps are provided for all intersection approaches.

# 2.2.3 Existing Traffic Conditions

The study team conducted vehicular and pedestrian counts at the study area intersections between September 2006 and September 2007, with the exception of the intersections of Causeway Street/Canal Street and Canal Street/Valenti Way, which were counted in October 2005. In addition, in May 2007 the study team updated the pedestrian counts at the intersection of Causeway Street/Canal Street. Vehicle turning movements and pedestrian volumes were collected on weekdays from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m. on days when no events were being held at TD Banknorth Garden. Based on the vehicle counts, the weekday a.m. and p.m. peak hours were identified as 8:00 to 9:00 a.m. and 4:45 to 5:45 p.m., respectively. Traffic volumes were balanced to account for data being collected in varying months. Figure 2-3 and Figure 2-4 show the existing a.m. and p.m. peak-hour turning volumes, respectively, for the study area intersections. Complete traffic count data are provided in Appendix B.

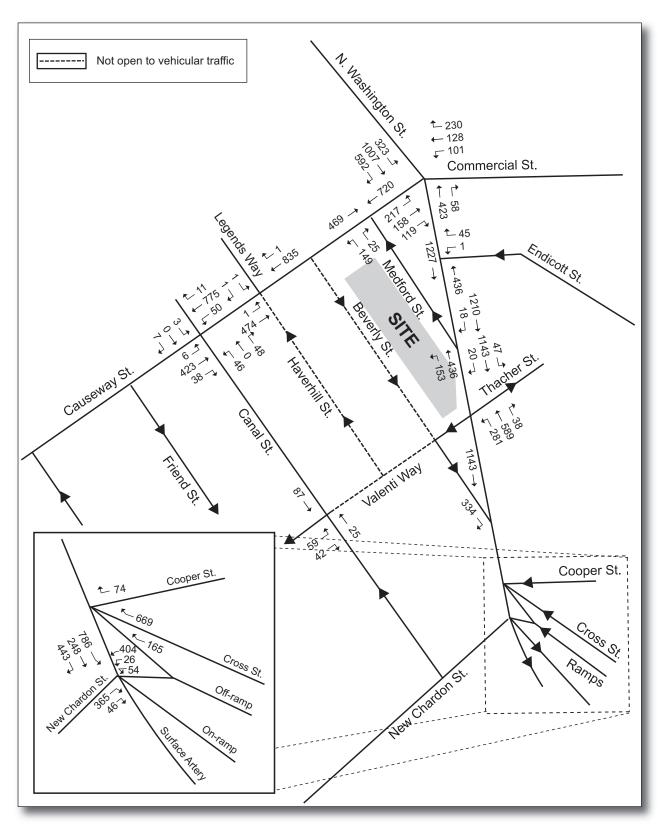
## 2.2.3.1 Existing Traffic Operations

Traffic operations are determined through an analysis of intersection Level of Service (LOS). The study team analyzed LOS and delay at the intersections using Synchro software developed by Trafficware. Synchro 6 was used to evaluate the effects closely spaced intersections may have on one another. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM); LOS and delay (in seconds) are determined based on intersection geometry and available traffic data for each intersection. Table 2-1, excerpted from the HCM, provides LOS criteria for signalized and unsignalized intersections. LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition (unacceptable), with significant traffic delay. LOS D is generally considered acceptable in an urban environment.

Table 2-1 Intersection Level of Service Criteria (HCM Excerpt)

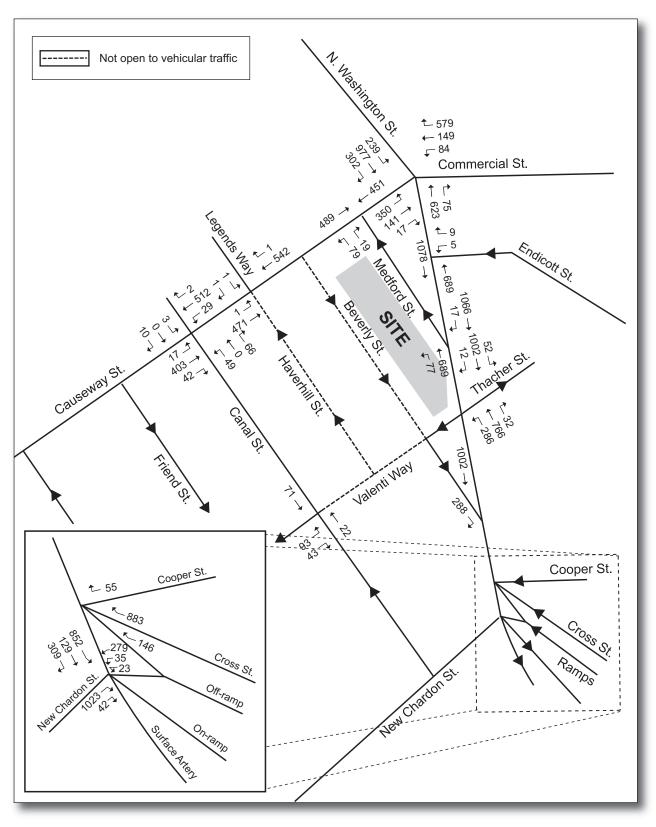
	Average Stopped	d Delay (sec./veh.)
Level of Service	Signalized Intersection	Unsignalized Intersection
Α	<u>&lt;</u> 10	<u>&lt;</u> 10
В	>10 and <u>&lt;</u> 20	>10 and <u>&lt;</u> 15
С	>20 and <u>&lt;</u> 35	> 15 and <u>&lt; 2</u> 5
D	>35 and <u>&lt;</u> 55	>25 and <u>&lt;</u> 35
Е	>55 and <u>&lt;</u> 80	>35 and <u>&lt;</u> 50
F	>80	> 50

The volume-to-capacity (v/c) ratio is a measure of congestion at an intersection approach. A v/c ratio of 1 or greater indicates that the intersection lane group exceeds capacity.





Not to Scale





Not to Scale The 95th percentile queue represents the farthest extent of the queue (to the last stopped vehicle) upstream from the stop line over 95% of all cycles. The 95th percentile queue is not seen during every cycle.

To accurately evaluate existing operations, the study team calibrated the Synchro level of service analysis by taking into account field observations of actual queues and delays. The analysis was calibrated to reflect the observed delays. Table 2-2 and Table 2-3 show the existing a.m. and p.m. peak intersection LOS for the Project study area. Complete Synchro reports are provided in Appendix B.

Under Existing Conditions, a majority of study area intersections generally operate at acceptable overall levels of service (LOS D or better) during both the a.m. and the p.m. peak periods; however, a number of intersections and/or approaches operate below LOS D:

North Washington Street/Causeway Street. During the a.m. peak hour, the Causeway Street eastbound left-turn and through approaches operate at LOS F; the Causeway Street westbound left-turn/through approach operates at LOS E. During the p.m. peak hour, the intersection operates at LOS E overall. The Causeway Street eastbound left-turn and through approaches, as well as the Causeway Street westbound left-turn/through approach, operate at LOS E. The Causeway Street westbound right-turn approach operates at LOS F.

North Washington Street/Valenti Way/Thacher Street. The intersection operates at LOS F overall during the a.m. peak hour and LOS E overall during the p.m. peak hour. During both peak hours, the North Washington Street northbound left-turn approach operates at LOS E, while the North Washington Street southbound through/right-right turn approach operates at LOS F.

New Chardon Street/Surface Road/I-93 Southbound and Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp. During the a.m. peak hour, all of the Surface Road southbound approaches operate at LOS E. During the p.m. peak hour, the intersection operates at LOS F overall. Also during the p.m. peak hour, both the New Chardon Street eastbound bear-right approach and the Surface Road left-turn approach operate at LOS F.

Causeway Street/Medford Street. During the a.m. peak hour, the Medford Street northbound left-turn/right-turn approach operates at LOS F.

Table 2-2 Existing Conditions (2008) Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	95th Percentile
	d Intersection		Kalio	Queue
North Washington Street/Causeway Street	D	38.7	Ι	_
Causeway EB left	F	> 80	0.89	#286
Causeway EB through	F	> 80	0.90	#343
Causeway EB right	В	14.4	0.51	46
Causeway WB left/through	E	79.3	0.78	161
Causeway WB right	В	17.9	0.39	137
N. Washington NB through   through/right	D	53.3	0.64	#385
N. Washington SB left	С	27.3	0.61	320
N. Washington SB through   through/right	С	20.2	0.67	532
N. Washington SB right	С	22.8	0.66	476
North Washington Street/Valenti Way/ Thacher Street	F	> 80	_	_
N. Washington NB left	E	75.7	0.91	#351
N. Washington NB through/right	В	12.7	0.57	472
N. Washington SB left	Α	6.4	0.17	21
N. Washington SB through   through/right	F	> 80	0.70	322
North Washington Street/Beverly Street	С	30.9	<b>—</b>	_
N. Washington SB through   through   through	D	38.7	0.86	367
Beverly SEB right   right   right	Α	3.2	0.17	m54
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	В	14.2	_	_
Cooper WB right	Α	1.7	0.25	0
Cross NB through   through	Α	4.2	0.30	57
Sumner Tunnel NEB left   left	D	47.7	0.61	81
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	D	47.5	_	_
New Chardon EB right   right	Α	7.7	0.35	153
New Chardon EB hard right	Α	1.9	0.10	0
Sumner Tunnel WB hard left/left	С	20.5	0.14	68
Sumner Tunnel WB through   through	С	21.2	0.30	142
Surface SB left   left	E	65.1	0.66	m351
Surface SB through/right	E	69.8	0.75	m326
Surface SB right	E	71.0	0.73	m344

Causeway Street/Haverhill Street/ Legends Way  Causeway EB left  Causeway EB through   through   through	A A A A	(seconds)  0.9  1.0  0.5	<b>Ratio</b> 0.00	Queue —
Legends Way  Causeway EB left  Causeway EB through   through   through	A A	1.0	0.00	_
Causeway EB left Causeway EB through   through   through	Α		0.00	
through		0.5		m0
6 14/5 1 1 1 1 1 1 1	Α	0.3	0.12	16
Causeway WB through   through/right		1.1	0.34	72
Legends SB left/right	C	31.0	0.01	7
Unsignalize	d Intersect	ions	-	
North Washington Street/Endicott Street				
Endicott WB left/right	В	11.6	0.10	9
N. Washington NB through   through	Α	0.0	0.15	0
N. Washington SB through   through	Α	0.0	0.39	0
North Washington Street/Medford Street				
N. Washington NB left/through	С	15.2	0.45	58
N. Washington NB through	Α	0.0	0.19	0
N. Washington SB through	Α	0.0	0.53	0
N. Washington SB through/right	Α	0.0	0.28	0
Causeway Street/Canal Street/ North Station Driveway				
Causeway EB left/through	Α	0.8	0.02	2
Causeway EB through/right	Α	0.0	0.17	0
Causeway WB left/through	Α	2.2	0.08	6
Causeway WB through/right	Α	0.0	0.24	0
Canal NB left/through/right	C	22.6	0.36	39
Driveway SB left/through/right	C	1 <i>7</i> .0	0.05	4
Causeway Street/Medford Street				
Causeway EB through   through   through	Α	0.0	0.11	0
Causeway WB through   through	Α	0.0	0.27	0
Medford NB left/right	F	> 80	0.95	219
Canal Street/Valenti Street				
Valenti EB left	Α	9.7	0.09	7
Valenti EB right	Α	9.1	0.06	5
Canal NB through	Α	0.0	0.02	0
Canal SB through	Α	0.0	0.07	0

<sup>95&</sup>lt;sup>th</sup> percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles. Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

Table 2-3 Existing Conditions (2008) Level of Service Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	v/c Ratio	95th Percentile Queue
Signalize	d Intersection	ons	l	-
North Washington Street/Causeway Street	E	69.1	_	_
Causeway EB left	E	72.3	0.81	343
Causeway EB through	E	74.1	0.83	#446
Causeway EB right	В	12.8	0.13	0
Causeway WB left/through	E	74.5	0.74	183
Causeway WB right	F	> 80	> 1	#825
N. Washington NB through   through/right	D	50.1	0.74	440
N. Washington SB left	С	30.5	0.62	241
N. Washington SB through   through/right	С	27.1	0.70	447
N. Washington SB right	С	25.8	0.58	281
North Washington Street/Valenti Way/ Thacher Street	E	62.1	_	_
N. Washington NB left	E	77.4	1.00	#360
N. Washington NB through/right	В	18.1	0.71	355
N. Washington SB left	Α	7.3	0.20	28
N. Washington SB through   through/right	F	> 80	0.60	242
North Washington Street/Beverly Street	D	45.0	_	_
N. Washington SB through   through   through	D	54.1	0.83	326
Beverly SEB right   right   right	В	13.0	0.14	m8 <i>7</i>
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	В	11.7	_	_
Cooper WB right	Α	1.7	0.24	0
Cross NB through   through	Α	4.9	0.40	m99
Sumner Tunnel NEB left   left	D	47.5	0.55	75
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	F	> 80	_	_
New Chardon EB right   right	F	> 80	> 1	#657
New Chardon EB hard right	Α	1.2	0.06	m0
Sumner Tunnel WB hard left/left	В	17.9	0.15	32
Sumner Tunnel WB through   through	В	17.8	0.20	92
Surface SB left   left	F	> 80	0.82	400
Surface SB through/right	D	45.4	0.55	m213
Surface SB right	D	44.9	0.55	m235

Intersection	LOS	Delay (seconds)	v/c Ratio	95th Percentile Queue
Causeway Street/Haverhill Street/			Ttutio	<b>Quou</b> o
Legends Way	Α	0.5	_	_
Causeway EB left	Α	1.0	0.00	m0
Causeway EB through   through		0.2	0.10	
through	Α	0.3	0.12	9
Causeway WB through   through/right	Α	0.7	0.21	41
Legends SB left/right	С	35.0	0.01	8
Unsignaliz	ed Intersecti	ons		
North Washington Street/Endicott Street				
Endicott WB left/right	D	25.7	0.12	10
N. Washington NB through   through	Α	0.0	0.23	0
N. Washington SB through   through	Α	0.0	0.41	0
North Washington Street/Medford Street				
N. Washington NB left/through	Α	5.4	0.17	15
N. Washington NB through	Α	0.0	0.30	0
N. Washington SB through	Α	0.0	0.44	0
N. Washington SB through/right	Α	0.0	0.24	0
Causeway Street/Canal Street/				
North Station Driveway				
Causeway EB left/through	Α	1.3	0.03	2
Causeway EB through/right	Α	0.0	0.15	0
Causeway WB left/through	Α	1.4	0.04	3
Causeway WB through/right	Α	0.0	0.16	0
Canal NB left/through/right	С	23.3	0.49	66
Driveway SB left/through/right	С	16.1	0.07	6
Causeway Street/Medford Street				
Causeway EB through   through	Α	0.0	0.12	0
through				
Causeway WB through   through	Α	0.0	0.17	0
Medford NB left/right	С	23.8	0.42	51
Canal Street/Valenti Street				
Valenti EB left	Α	9.8	0.14	12
Valenti EB right	Α	9.0	0.06	5
Canal NB through	Α	0.0	0.02	0
Canal SB through	Α	0.0	0.05	0

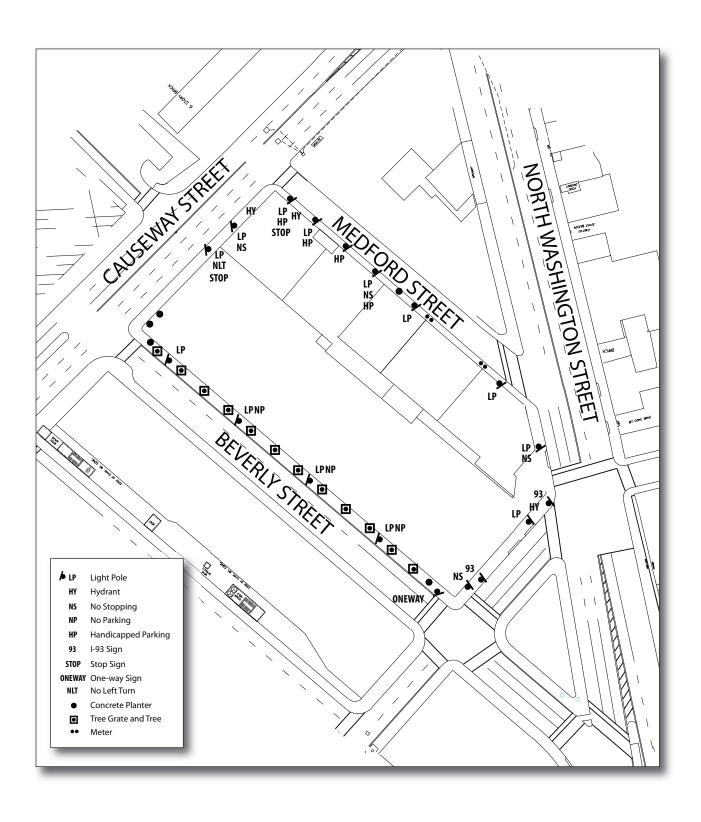
<sup>95&</sup>lt;sup>th</sup> percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles. Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

# 2.2.4 Existing Parking

# 2.2.4.1 Curbside Inventory and On-street Parking

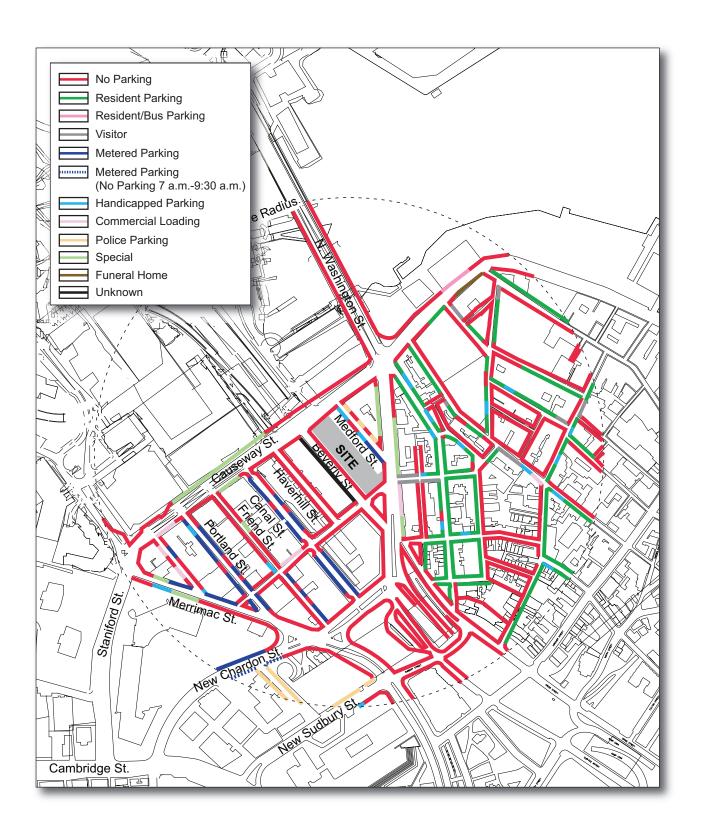
Figure 2-5 presents an inventory of the existing curb use and parking restrictions in the block immediately surrounding the Project site. The inventory was conducted in June 2008 when Beverly Street was closed to vehicular traffic.

Figure 2-6 presents an inventory of existing curb use and parking restrictions within a quarter-mile, approximately a five-minute walk, of the Project.













## 2.2.4.2 Off-street Parking

More than 5,600 off-street spaces are provided in garages and lots within a quarter-mile radius of the Project site, as listed in Table 2-4 and shown in Figure 2-7.

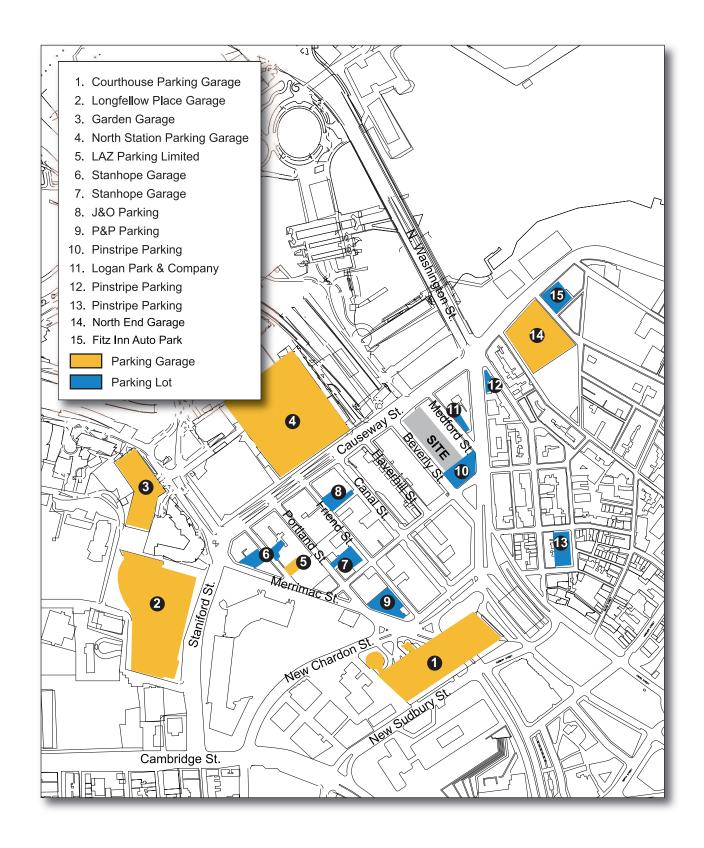
Table 2-4 Off-street Parking in the Study Area

Map No.	Facility	Capacity (spaces)
1	Courthouse Parking Garage	2,400
2	Longfellow Place Garage	168
3	Garden Garage	660
4	North Station	1,364
5	LAZ Parking Limited	60
6	Stanhope Garage	70
7	Stanhope Garage	41
8	J&O Parking	<i>7</i> 5
9	P&P Parking	35
10	Pinstripe Parking	24
11	Logan Park & Co.	9
12	Pinstripe Parking	18
13	Pinstripe Parking	67
14	North End Garage	645
15	Fitz Inn Auto Park	44
Total Off-st	reet Parking	5,680

# 2.2.5 Existing Public Transportation in the Study Area

## 2.2.5.1 MBTA Rapid Transit Service in the Study Area

The site location is convenient to the MBTA public transportation system, as illustrated in Figure 2-8. Access to the Orange and Green lines is provided at the MBTA North Station superstation located one block to the west of the Project site. Both lines also serve Haymarket station, less than one-quarter mile south of the site.







Transit riders can transfer to the Red Line from the Orange Line at Downtown Crossing or from the Green Line at Park Street, and to the Blue Line from the Orange Line at State Station or from the Green Line at Government Center. Weekday subway service is provided between approximately 5:00 a.m. and 1:00 a.m. Actual train service times vary by line. Local rapid transit services, including route descriptions, headways, and capacities are summarized in Table 2-5.

Table 2-5 Local MBTA Rapid Transit Service in the Study Area

Line	Origin—Destination	Car Capacity <sup>1</sup>	Cars Per Train	Train Capacity	Trains Per Hour	Hourly 1-way Capacity
Orange Line	Forest Hills-Oak Grove	131	6	786	13	10,218
Green Line	Lechmere–Boston College, Cleveland Circle, Riverside, or Heath Street	101	2	202	21	4,242
Blue Line	Wonderland-Bowdoin or Government Center	95	4	380	16	6,080
Red Line	Alewife-Braintree/Ashmont	167	6	1002	14	16,032

<sup>&</sup>lt;sup>1</sup> Per MBTA service policy for peak-hour service. "Crush loaded" capacity is; 1,344 for a six-car Orange Line train; 398–538 for a two-car Green Line train; 636 for a four-car Blue Line train; and 1,560–1,662 for a six-car Red Line train.

According to the MBTA's *Ridership and Service Statistics* (Eleventh Edition, 2007), North Station has a weekday average of 16,124 daily subway boardings.

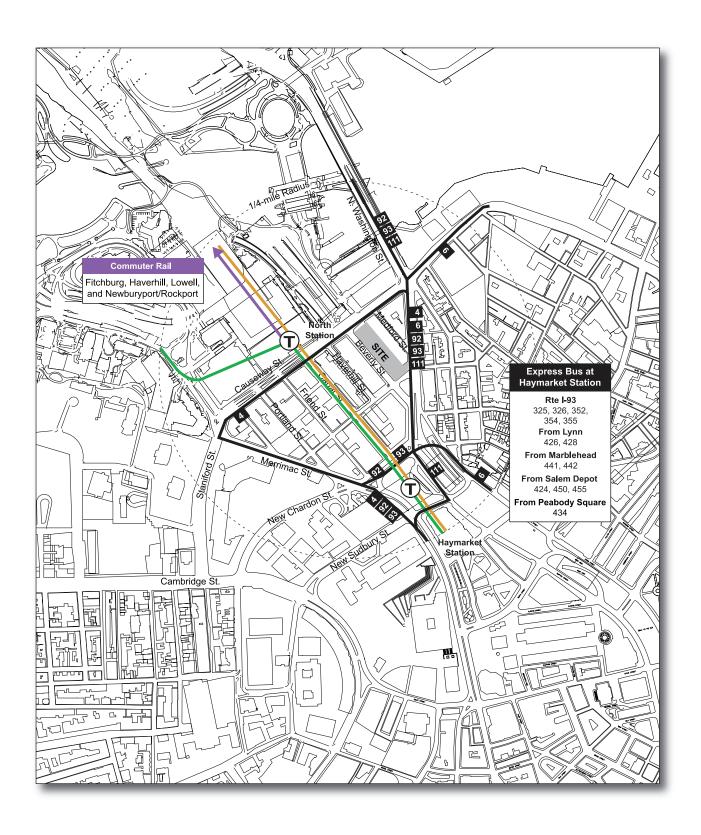
#### 2.2.5.2 MBTA Commuter Rail Service

The Project site is located one block from North Station, a terminal station for five MBTA commuter rail lines. Commuter rail trains at North Station serve the Fitchburg, Haverhill, Lowell, and Rockport/Newburyport lines. Additional commuter rail lines serve South Station, accessible from the Project site through Green Line or Orange Line subway service and a connection to the Red Line at Park Street. The Greenbush, Plymouth/Kingston, Middleborough/Lakeville, Providence/Stoughton, Forge Park-495, Needham, and Framingham/Worcester Lines serve South Station.

#### 2.2.5.3 MBTA Bus Service

Five local bus routes serve stops within one-quarter mile of the Project site. Bus routes #4, #6, #92, #93, and #111 stop at the intersection of North Washington Street/Thacher Street or North Washington Street/Medford Street, both almost adjacent to the Project site. Bus route #4 stops at Causeway Street/Canal Street, adjacent to North Station.

Express bus routes #325, #326, #424, #426, #428, #434, #441, #442, #450, and #455 serve Haymarket Station. Express routes #352, #354, and #355 stop at the intersection of New Sudbury/Congress Street. Route #426 also stops at North Washington Street/Medford Street, adjacent to the Project site.







Bus frequencies and route summaries are shown in Table 2-6.

Table 2-6 MBTA Bus Service in the Study Area

Bus Route	Route Description	Rush-hour Frequency (in minutes)
#4	North Station–World Trade Center	12–16
#6	South Station-Haymarket	35
#92	Assembly Square Mall–Downtown	12
#93	Sullivan Square–Downtown	7–8
#111	Woodlawn or Broadway & Park-Haymarket	4–5
#325	Elm Street & Fellsway West, Medford–Haymarket (Express)	15-20
#326	West Medford–Haymarket (Express)	12–15
#352	Burlington–State Street (Express)	20
#354	Woburn Line–State Street (Express)	15-20
#355	Mishawum Station–Downtown (Express)	Limited
#424/#424W	Eastern & Essex-Wonderland or Haymarket	30
#426	Central Square, Lynn/E. Saugus-Wonderland or Haymarket	Irregular
#428	Oaklandvale-Haymarket	Limited
#434	Peabody Square–Haymarket	Limited
#441	Marblehead–Haymarket	30-60
#442	Marblehead-Haymarket	30-60
#450	Salem-Haymarket	30
#455	Salem-Haymarket or Wonderland	30-60

Source: MBTA's Ridership and Service Statistics, 11th Edition, 2007.

# 2.2.6 Existing Pedestrian Conditions

Sidewalks are provided on all streets within the study area. The following sections describe the sidewalk locations and pedestrian conditions along the Existing Conditions study area roadways.

#### 2.2.6.1 Sidewalk and Crosswalk Conditions

North Washington Street has sidewalks on both sides of the roadway, varying from nine to 19 feet wide. The effective sidewalk width is narrowed due to street furniture such as light poles, traffic signs, and traffic signal equipment. There are pedestrian crosswalks at all intersections and a raised median along some areas of North Washington Street. The Freedom Trail runs along North Washington Street north of the intersection with Causeway Street.

*Causeway Street* has sidewalks on both sides of the roadway and a centerline median in some sections. Sidewalk widths on the north side are 14 feet, while those on the south side range from 10 to 27 feet. The effective sidewalk width is narrowed due to street furniture

such as light poles and traffic signs located adjacent to the roadway. Several crosswalks are provided across Causeway Street within the study area. Additionally, the Freedom Trail runs along the south side of Causeway Street from Hull Street to North Washington Street, where it crosses Causeway Street and continues along North Washington Street. Causeway Street provides access to the MBTA superstation for the Orange and Green lines and to the commuter rail lines at North Station as well as to TD Banknorth Garden.

*Valenti Way* has sidewalks on both sides of the roadway. The sidewalk width on the north side is seven feet, while on the south side it ranges from seven to nine feet. The effective sidewalk width is narrowed due to street furniture such as parking meters, light poles, and traffic signs located adjacent to the roadway. The crosswalks located across Valenti Way are 10 feet wide. The crosswalks located across Valenti Way at Portland Street and Canal Street are severely worn. Valenti Way provides access to the MBTA superstation for the Orange and Green lines.

**Thacher Street** has sidewalks on both sides of the roadway, measuring six feet wide. The effective sidewalk width is narrowed due to light poles and traffic signs located adjacent to the roadway. Thacher Street provides pedestrian access to the City's North End district.

*Beverly Street* has sidewalks on both sides of the roadway. The sidewalk width on the west side is 10 feet, while the sidewalk width on the east side is 12 feet. The effective sidewalk width is narrowed due to trees and poles. The roadway is currently open to pedestrians but not vehicles.

*Cross Street* has a sidewalk along the east side of the roadway, measuring 12 feet. The sidewalk width is narrowed due to street furniture. No sidewalks are provided on the west side, due to on- and off-ramps providing access to the Thomas P. O'Neill, Jr., Tunnel.

Cooper Street has sidewalks on both sides of the roadway that vary in width from six to 16 feet. The effective sidewalk width is narrowed due to light poles, traffic signs, and other street furniture located adjacent to the roadway. This roadway provides pedestrian access to the City's North End district, which features restaurants, shops, and several tourist attractions.

**New Chardon Street** has a sidewalk on both sides of the roadway. The sidewalk on the north side is approximately 18 feet wide, but the effective sidewalk width is narrowed due to light poles and traffic signs located adjacent to the roadway. On the south side, a large sidewalk is provided adjacent to the MBTA Haymarket Station. A brick-paved crosswalk is located across New Chardon Street to the west of Canal Street, and a crosswalk is provided across New Chardon Street at the intersection with North Washington Street.

The *Surface Artery* has sidewalks on both sides of the roadway north of New Chardon Street within the study area. The sidewalk on the west side is 12 feet, while the sidewalk space within the median near Cooper Street and the off-ramps on the east side is nine feet. The

effective widths of these sidewalks are narrowed due to light and signal poles. South of New Chardon Street, a large sidewalk is provided through the MBTA Haymarket Station, but no sidewalks are provided immediately along the roadway to New Sudbury Street.

*Haverhill Street* has sidewalks on both sides of the roadway, measuring 10 feet, but the road is not open to public travel at this time due to ongoing adjoining development.

**Legends Way** has sidewalks approximately 20 feet wide on both sides of the roadway. Legends Way provides pedestrian access to TD Banknorth Garden and the commuter rail lines at North Station. A crosswalk is provided at the intersection of Causeway Street/Haverhill Street/Legends Way.

*Endicott Street* has sidewalks on both sides of the roadway within the study area. At the intersection of Endicott Street and North Washington Street, the sidewalks are approximately 30 feet, while beyond the intersection, the sidewalks range from six to eight feet. The sidewalks are considerably narrowed due to street furniture as well as adjoining buildings and closely parked vehicles. A crosswalk is provided across Endicott Street at North Washington Street.

*Medford Street* has sidewalks on both sides of the roadway. The sidewalks on both sides are approximately seven feet wide. The effective sidewalk width is narrowed due to street furniture such as parking meters, light poles, traffic signs, and other furniture located adjacent to the roadway. Crosswalks are provided at both ends of Medford Street.

*Canal Street* has sidewalks on both sides of the roadway. Sidewalk widths on the west side vary from 25 to 33 feet, while those on the east side range from 10 to 18 feet. The effective sidewalk width is narrowed, due to existing street trees and street furniture such as parking meters, light poles, and traffic signs located adjacent to the roadway. The crosswalks located across Canal Street are 10 feet wide. The crosswalk across southbound Canal Street at the intersection with Valenti Way is severely worn.

#### 2.2.7 Existing Pedestrian Operations

Pedestrian level of service is determined through analysis of crosswalk geometry, signal timing, and pedestrian volumes. The methodology for conducting the LOS analysis is based on the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM). At signalized intersections, pedestrian LOS is based on the waiting time or delay pedestrians experience as they wait to enter the crosswalk (called "delay LOS") and how much crowding exists in the crosswalk (called "space LOS"). According to the HCM, the method for unsignalized intersections does not apply to zebra-striped crosswalks, because pedestrians (by Massachusetts state law) have the right-of-way. Pedestrian LOS at an unsignalized intersection is computed for approaches where pedestrians do not have the right-of-way or any stop control device, and is based on the critical gap, the vehicular flow rate, and the mean vehicle headway.

Pedestrian LOS at an unsignalized intersection is computed for approaches where pedestrians do not have the right-of-way or any stop control device, and is based on the critical gap, the vehicular flow rate, and the mean vehicle headway. The critical gap is the minimum amount of time (in seconds) required for one vehicle to enter the intersection. The vehicular flow rate is the number of vehicles per hour (vph) that move through a particular location. The mean vehicle headway (in seconds) is the average amount of time between vehicles passing a particular point. Input includes pedestrian volumes, vehicular volumes, walking speed, crosswalk width, and street width.

Table 2-7, excerpted from the HCM, provides LOS criteria for delay experienced by pedestrians at signalized and unsignalized intersections. As the delay increases at a signalized intersection, pedestrians are likely to become less compliant. In reality, if traffic volumes are low and delay high, pedestrians will not wait. The delay experienced does not account for pedestrian volumes; it is the average delay experienced by pedestrians waiting to cross, regardless of volume. At unsignalized intersections, the LOS is based on average delay per pedestrian, obtained from the vehicular volumes and potential gaps. LOS A defines the most favorable condition, with minimum delay to cross. LOS F represents the worst condition, with significant delay. Similar to vehicular traffic, LOS D is generally considered acceptable for the urban environments of the study area.

Table 2-7 Level of Service Criteria for Pedestrian Delay at Intersections

LOS	Signalized (seconds/person)	Unsignalized (seconds/person)	Likelihood of Non-compliance
Α	<10	< 5	Low
В	≥10-20	≥5–10	
C	≥20-30	≥10–20	Moderate
D	≥30–40	≥20–30	
E	≥40–60	≥30–45	High
F	>60	>45	Very High

Figure 2-9 and Table 2-8 show LOS criteria for average flow of pedestrians on crosswalks used to determine the space LOS. Space LOS is calculated only for signalized intersections and does take pedestrian volumes into account. Crosswalk space LOS is derived from pedestrian walking speed, pedestrian start-up time, and pedestrian space requirements. If insignificant hourly pedestrian volumes result in an average of zero pedestrians per cycle, the amount of space yielded per pedestrian is characterized as "unlimited" or "maximized." LOS A defines the most favorable condition, with maximum crosswalk space per pedestrian. LOS F represents the worst condition, with minimum crosswalk space. LOS D is generally considered acceptable for urban environments of the study area.

Table 2-8 Level of Service Criteria (Space) for Average Flow of Walkways and Sidewalks

	Space	Flow Rate	Speed	
LOS	(sf/p)*	(p/min/ft)*	(ft/s)*	v/c Ratio
Α	>60	<u>&lt;</u> 5	>4.25	<u>&lt;</u> 0.21
В	>40-60	> 5-7	>4.17-4.25	>0.21-0.31
C	> 24-40	>7-10	>4.00-4.17	>0.31-0.44
D	>15-24	>10-15	> 3.75-4.00	>0.44-0.65
E	>8-15	>15-23	> 2.50 – 3.75	>0.65-1.0
F	<8	Variable	< 2.50	Variable

<sup>\*</sup> sf/p = square feet per person p/min/ft = persons per minute per linear foot ft/s = linear feet per second

## LEVEL OF SERVICE A

Pedestrian Space: > 60 sq. ft./ped.

Flow Rate: < 5 ped./min./ft.

At walkway LOS A, pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.



#### LEVEL OF SERVICE B

Pedestrian Space: > 40-60 sq. ft./ped.

Flow Rate: > 5-7 ped./min./ft.

At LOS B, sufficient area is provided to allow pedestrians to freely select walking speeds, bypass other pedestrians, and avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and respond to their presence in the selection of the walking path.





## LEVEL OF SERVICE C

Pedestrian Space: > 24-40 sq. ft./ped. Flow Rate: > 7-10 ped./min./ft.

At LOS C, sufficient space is available to select normal walking speeds and bypass other pedestrians in primarily unidirectional streams. Where reverse-direction or crossing movements exist, minor conflicts will occur, and speeds and volume will





#### LEVEL OF SERVICE D

be somewhat lower.

Pedestrian Space: > 15-24 sq. ft./ped.

Flow Rate: > 10-15 ped./min./ft.

At LOS D, freedom to select individual walking speed and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflict is high, and its avoidance requires frequent changes in speed and position. The LOS provides reasonably fluid flow; however, considerable friction and interaction between pedestrians is likely to occur.



## LEVEL OF SERVICE E

Pedestrian Space: >8-15 sq. ft./ped. Flow Rate: > 15-23 ped./min./ft.

At LOS E, virtually all pedestrians would have their normal walking speed restricted, requiring frequent adjustment of gait. At the lower range of this LOS, forward movement is possible only by "shuffling." Insufficient space is provided for passing of slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulty. Design volumes approach the limit of walkway capacity, with resulting stoppages and interruptions to flow.



#### LEVEL OF SERVICE

Pedestrian Space: < 8 sq. ft./ped. Flow Rate: variable ped./min./ft.

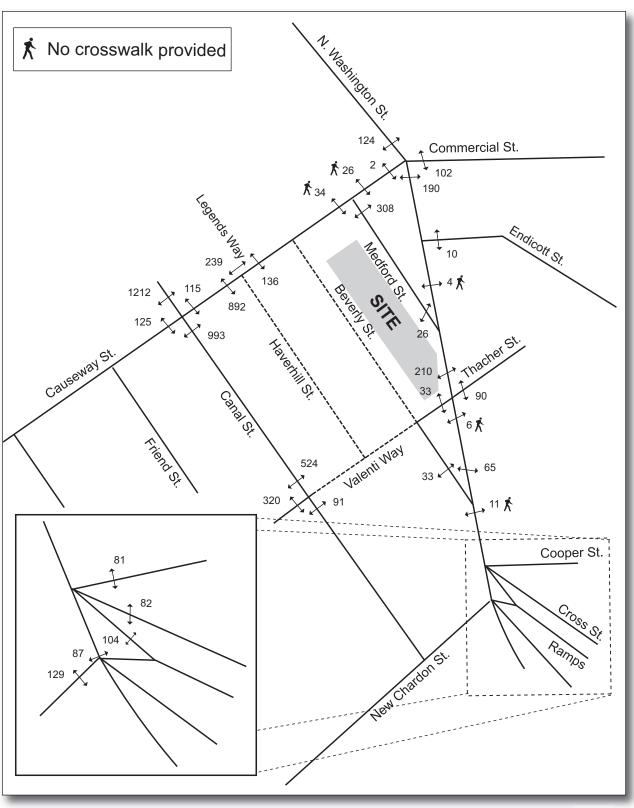
At LOS F, all walking speeds are severely restricted, and forward progress is made only by "shuffling." Contact with other pedestrians is frequent and unavoidable. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.





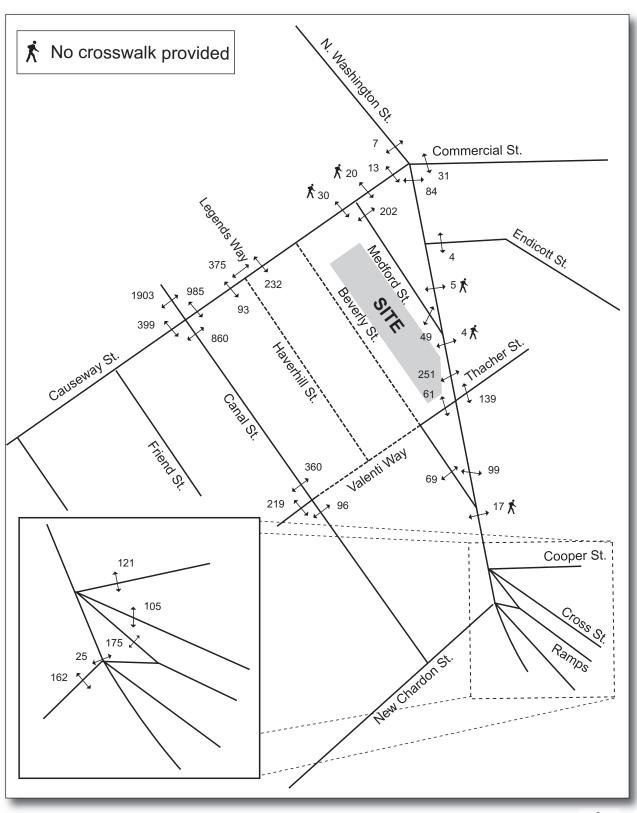
Pedestrian counts at study area intersections were conducted concurrent with vehicle movement counts. Existing peak-hour pedestrian volumes appear in Figure 2-10 and Figure 2-11. These figures also note jaywalking at intersections without crosswalks.

The study team conducted pedestrian LOS analysis to evaluate existing pedestrian delay and space per pedestrian at study area intersections. Table 2-9 summarizes existing a.m. and p.m. peak-hour pedestrian LOS. The analysis worksheets are provided in Appendix B.





Not to Scale







_		/ LOS	Space LOS	
Intersection	a.m.	p.m.	a.m.	p.m.
Signalized Intersections				
North Washington Street/Causeway Street				
Causeway East Crosswalk	В	В	Α	Α
Causeway West Crosswalk	В	В	Α	Α
N. Washington North Crosswalk	C	С	Α	Α
N. Washington South Crosswalk	C	С	Α	Α
North Washington Street/Valenti Way/Thacher Street				
Thacher East Crosswalk	Α	Α	Α	Α
Valenti West Crosswalk	Α	Α	Α	Α
N. Washington North Crosswalk	С	С	Α	Α
North Washington Street/Beverly Street				
Beverly West Crosswalk	Α	В	Α	Α
N. Washington North Crosswalk	В	В	Α	Α
North Washington Street/Cross Street/Cooper Street/ Sumner Tunnel Off-ramp				
Cooper East Crosswalk	Α	Α	Α	Α
Sumner West Crosswalk	Α	Α	Α	Α
Cross South Crosswalk	В	В	Α	Α
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/Sumner Tunnel Off-ramp				
New Chardon West Crosswalk	Α	В	Α	Α
Surface North Crosswalk	Α	Α	Α	Α
Causeway Street/Haverhill Street/Legends Way				
Causeway East Crosswalk	В	В	Α	Α
Causeway West Crosswalk	В	В	В	Α
Legends North Crosswalk	Α	Α	Α	Α
Unsignalized Intersections				
North Washington Street/Endicott Street				
Endicott East Crosswalk	Α	Α	_	_
North Washington Street/Medford Street				
Medford West Crosswalk	Α	Α	_	_
Causeway Street/Canal Street/North Station Driveway				
Causeway East Crosswalk	F	F	_	_
Causeway West Crosswalk	F	F	_	_
Driveway North Crosswalk	C	Α	_	_
Canal South Crosswalk	Α	Α		
Causeway Street/Medford Street				
Medford South Crosswalk	Α	Α		
Canal Street/Valenti Way				
Valenti West Crosswalk	Α	Α	_	_
Canal North Crosswalk	Α	Α	_	_
Canal South Crosswalk	Α	Α	_	_

Based on the delay and space LOS evaluation at the signalized intersections, all study area intersections operate at acceptable pedestrian LOS (D or better) during both peak hours. For unsignalized intersection delay LOS, all crosswalks operate at acceptable LOS, except the intersection of Causeway Street/Canal Street, where both Causeway Street crosswalks operate at LOS F for delay during the a.m. and p.m. peak hours.

Vehicles in the study area currently yield to pedestrians in crosswalks as required by state law, thereby reducing the delay and LOS experienced by pedestrians. Additionally, pedestrians often cross the street when there is a "critical mass" of pedestrians waiting to cross. Space at each location is ample enough for pedestrians to wait at corners and to walk comfortably along the sidewalks.

## 2.2.8 Bicycles

The Paul Dudley White Memorial Bikepath along the Charles River is approximately one-half mile from the site. Additionally, North Washington Street, Causeway Street, Cross Street, New Chardon Street, Surface Artery, and Endicott Street all serve as on-street bicycle routes, according to *Boston's Bikemap*, published by Rubel Bike Maps of Cambridge, Massachusetts.

## 2.2.9 Loading and Service

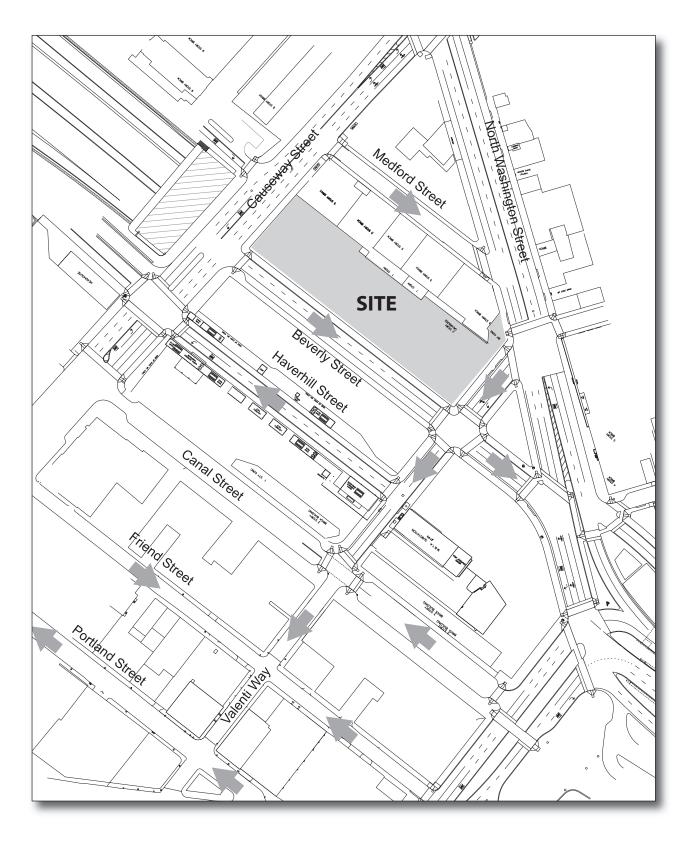
Currently, no loading or service activities are associated with the site.

### 2.2.10 Crash History

Due to the ongoing construction of the CA/T project, the study team did not compile motor vehicle crash data at study area intersections. The roadway network has been impacted in various ways throughout the past three years for which crash data would normally have been collected. For accuracy and reliability, motor vehicle crash data should not be analyzed until three years after this major construction effort is complete.

## 2.3 Evaluation of Long-term Impacts

This section describes and evaluates the 2013 No-Build and Build Conditions. The study area infrastructure, including roadways, sidewalks, and intersections, are undergoing a transformation with the final work on the CA/T project (see the proposed street layout in Figure 2-12). A detailed description of the final changes to the Bulfinch Triangle area is presented in the following sections.





Not to Scale



#### 2.3.1 No-Build Conditions

Due to the roadway changes, particularly the new Beverly Street and Haverhill Street and the conversion of Valenti Way from one-way eastbound to one-way westbound, the No-Build and Build study area intersections differ from the Existing Conditions intersections analyzed.

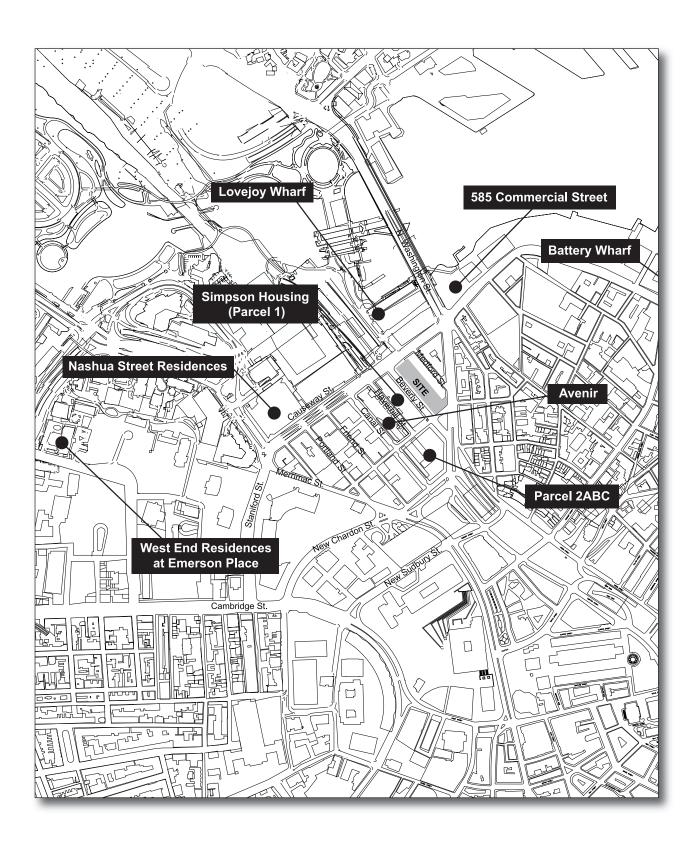
Turning movement counts were conducted at all intersections within and around the Bulfinch Triangle between 2005 and 2007, as part of the *Bulfinch Triangle Transportation Model and Action Plan* (TMAP). The TMAP study team conducted analysis of the future traffic in the Bulfinch Triangle based on rerouting existing traffic volumes to utilize the future roadway configuration. Additionally, background growth rates between 0.25% and 0.5% per year were applied to regional traffic movements *around* the Bulfinch Triangle, with no background growth rate applied to local roadways *within* the Bulfinch Triangle. In addition to applying the background growth rates, an estimation of the traffic generated by future major developments within and around the Bulfinch Triangle were added to the No-Build traffic volumes.

As part of the City of Boston Crossroads Initiative, Causeway Street is being redesigned and reconstructed. The study area for the Causeway Street Crossroads Initiative is along Causeway Street between Lomasney Way/Merrimac Street to the west and Prince Street to the east. Key goals of that project are to transform Causeway Street into a "great pedestrian-oriented boulevard," make it the "anchor" for the Bulfinch Triangle/North Station business and entertainment district, reconnect the West End and North End neighborhoods, and transform the Bulfinch Triangle/North Station area into a vibrant, more pedestrian-friendly place. Additionally, the Causeway Street project will improve intersection operations at Lowell and Keany squares and through the corridor. Currently, the reconstruction project is in the conceptual design stage; therefore the redesign is unknown.

The additional traffic generated by the projects listed below and shown in Figure 2-13, was incorporated into the No-Build analysis for the weekday a.m. and p.m. peak hours.

**Battery Wharf.** This project is currently under construction on Commercial Street's waterfront in Boston's North End. It will consist of 42,000 sf of retail space, 155,000 sf of hotel, and 103 residential units. Approximately 375 parking spaces will be provided onsite.

*Avenir (Canal Place).* This proposed project includes construction of 241 residential apartment units and approximately 31,000 sf of ground floor retail use. A two-level parking garage with 116 parking spaces will be provided for residents. The existing MBTA superstation for the Orange and Green lines will be incorporated into the project.







Nashua Street Residences at the Fleet Center. This proposed project includes construction of 373 residential units on Nashua Street adjacent to TD Banknorth Garden. The ground floor will include approximately 8,000 sf of retail space. Parking on-site will be available for 244 vehicles in an above-grade parking structure. Access to the garage will be provided from Nashua Street and Red Auerbach Way.

Lovejoy Wharf. This proposed project includes approximately 250 residential units and 36,400 sf of first-floor retail and restaurant uses in a rehabilitated historic structure at 160 North Washington Street. It also includes a new, two-story pavilion adjacent to the site, with a public elevator to provide access from the street to the wharf and the visitors' center.

585 Commercial Street (Land Swap Scheme). This proposed project is located on Commercial Street in the North End. The Draft Project Impact Report/Draft Environmental Impact Report provides three redevelopment schemes: Environmental Notification Form/Project Notification Form, Land Swap, and Municipal Harbor Plan (MHP). The preferred scheme is the MHP; however, to provide a conservative estimate, the Land Swap scheme was used for the analysis, since it was the worst case for traffic. The Land Swap scheme consists of 88 residential condominiums, 2,300 sf of café space, 6,000 sf of fitness/spa space, 4 inn rooms, and 24 marina slips. Additionally, 147 parking spaces will be provided on-site.

*West End Residences at Emerson Place.* This proposed project includes construction of 341 residential units (323 net new units) within four buildings. Parking on-site will be increased from 354 to 677 parking spaces (323 net new spaces): 557 spaces in the garage beneath Building A and 120 spaces in the garage beneath Building C.

*Simpson Housing (Parcel 1).* This proposed project includes construction of 284 residential apartments, 2,970 sf of ground floor retail, and 11,940 sf of restaurant space. Approximately 142 parking spaces will be provided on-site.

*The Bulfinch Triangle Project (Parcels 2ABC).* This proposed project includes construction of 5,000 sf of ground floor retail space, 53,000 sf of grocery store space, and 269,000 sf of office space. An above-ground parking lot will be provided with approximately 233 parking spaces.

### 2.3.1.1 No-Build Roadway Conditions

A number of study area roadway modifications are planned for implementation within the next several years with the completion of the CA/T project:

Causeway Street, an urban minor arterial, runs east-west from Merrimac Street/Lomasney Way to Prince Street. Causeway Street is part of the City's Crossroads Initiative, which will

seek to enhance Causeway Street through various infrastructure improvements that are not yet defined.

*Valenti Way,* a local street, currently runs one-way eastbound from Merrimac Street to Canal Street and one-way westbound from North Washington Street to Beverly Street. A roadway connecting the two segments between Canal Street and Beverly Street has been constructed but is not open to traffic. However, with the completion of the CA/T construction and adjoining development projects, this connection will be opened; the entire length of Valenti Way will then be converted to one-way westbound traffic flow.

**Beverly Street,** a new local street, is currently open only between Valenti Way and North Washington Street. The remaining segment, running one-way southbound from Causeway Street to North Washington Street, has been constructed but is not yet open to traffic, pending completion of CA/T construction and adjoining development projects. Parking will be allowed on the west side of the street.

*Haverhill Street,* a new local street, is constructed but not yet open to traffic. When it opens, it will run one-way northbound from Valenti Way to Causeway Street. No parking will be allowed on Haverhill Street. The North Station superstation is located on the east side of the street.

**Legends Way** currently serves as an access and service driveway to the rear of TD Banknorth Garden. In the future, the MBTA North Station garage will connect to Legends Way.

*Canal Street,* a local street, currently runs two-way between Causeway Street and New Chardon Street. With completion of the CA/T improvements, Canal Street between New Chardon Street and Valenti Way will run one-way northbound, while the section between Causeway Street and Valenti Way will remain two-way. Parking is provided on both sides of Canal Street.

*Medford Street,* a local street, currently runs one-way northbound from North Washington Street to Causeway Street and is planned to reverse direction and run southbound under the final CA/T configuration. Parking is provided on both sides of the roadway.

## 2.3.1.2 No-Build Intersection Conditions

The CA/T project included completion of several new intersections; however, several are not yet open to traffic, and/or final traffic controls are not yet operational. However, in five years, the new configurations and control will be completed and operational.

## Signalized Intersections

Causeway Street/Haverhill Street/Legends Way will be a signalized, four-way intersection once the Haverhill Street approach is opened to traffic. The Causeway Street eastbound

approach comprises an exclusive left-turn lane and three through travel lanes, while the westbound approach has two general travel lanes. Haverhill Street northbound has an exclusive left-turn lane and a shared through/right-turn lane. The Legends Way southbound approach has one general travel lane. Crosswalks and handicapped ramps are provided for all approaches. Pedestrian phases are concurrent with vehicular movements.

Beverly Street/Valenti Way is a four-way intersection that will be signalized, with Valenti Way operating westbound and Beverly Street southbound. The Valenti Way westbound approach will provide an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive through lane. The Beverly Street southbound approach will consist of three general travel lanes. An exclusive pedestrian phase will be provided. Crosswalks and handicapped ramps are provided for all approaches.

## Unsignalized Intersections

North Washington Street/Medford Street will be an unsignalized T intersection once the direction of Medford Street is reversed. The North Washington Street northbound approach will comprise two general travel lanes, while the North Washington Street southbound approach will comprise two general travel lanes. Medford Street southeast-bound will consist of one shared left/right travel lane. A crosswalk and handicapped ramps are provided across Medford Street.

Causeway Street/Medford Street is an unsignalized T intersection. The Causeway Street eastbound approach comprises three general travel lanes, while the Causeway Street westbound approach consists of two general travel lanes. Medford Street's direction will be reversed to provide one-way access to the southeast. A crosswalk and handicapped ramps are provided across Medford Street.

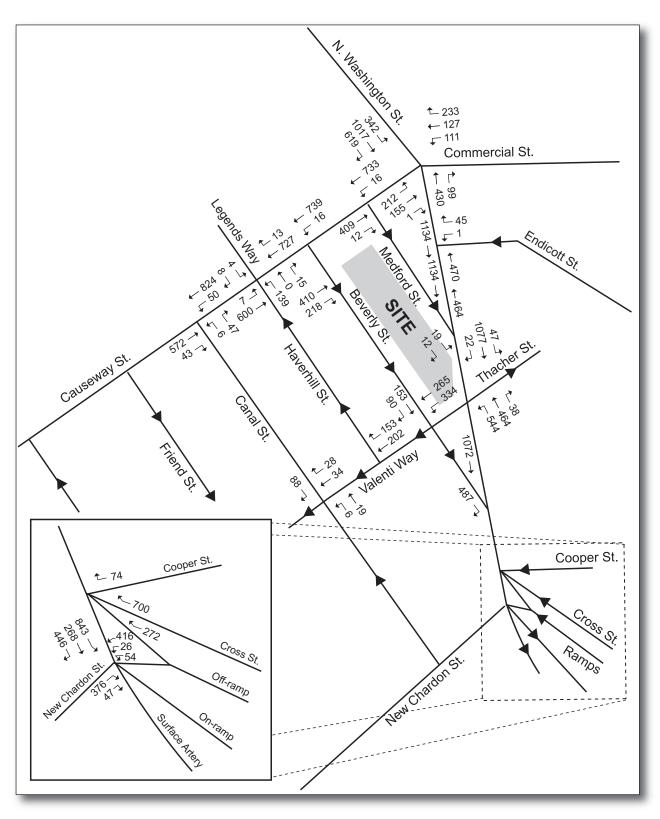
Canal Street/Valenti Street is currently configured as a T intersection with stop control on Valenti Way. The intersection control will be changed to all-way stop-control (AWSC), and the direction of Valenti Way will be reversed. Valenti Way currently operates as one-way eastbound, but it will operate as one-way westbound in the future. The Valenti Way westbound approach will comprise two travel lanes: an exclusive through lane and a shared through/right-turn lane. Canal Street northbound will consist of an exclusive left-turn lane and an exclusive through travel lane. The Canal Street southbound approach will be changed to consist of a right-turn-only lane. Crosswalks and handicapped ramps are provided across all approaches.

Causeway Street/Beverly Street will be an unsignalized T intersection. Causeway Street eastbound comprises three general travel lanes, while Causeway Street westbound consists of an exclusive left-turn lane and two travel lanes. Beverly Street, which is not yet open, will be one-way southbound from Causeway Street, with two travel lanes. A crosswalk and handicapped ramps are provided across Beverly Street. No traffic control devices are provided at the intersection.

*Valenti Way/Haverhill Street* will be an unsignalized T intersection with only one approach due to one-way configurations. The Valenti Way westbound approach will consist of two general travel lanes. Haverhill Street will be one-way northbound from Valenti Way and comprise two travel lanes. A crosswalk and handicapped ramps will be provided across Haverhill Street. No traffic control devices will be provided at the intersection.

# 2.3.1.3 No-Build Traffic Operations

The No-Build morning and evening peak-hour traffic volumes are presented in Figure 2-14 and Figure 2-15. The resulting intersection operations are shown in Table 2-10 and Table 2-11. Complete Synchro reports are provided in Appendix B.





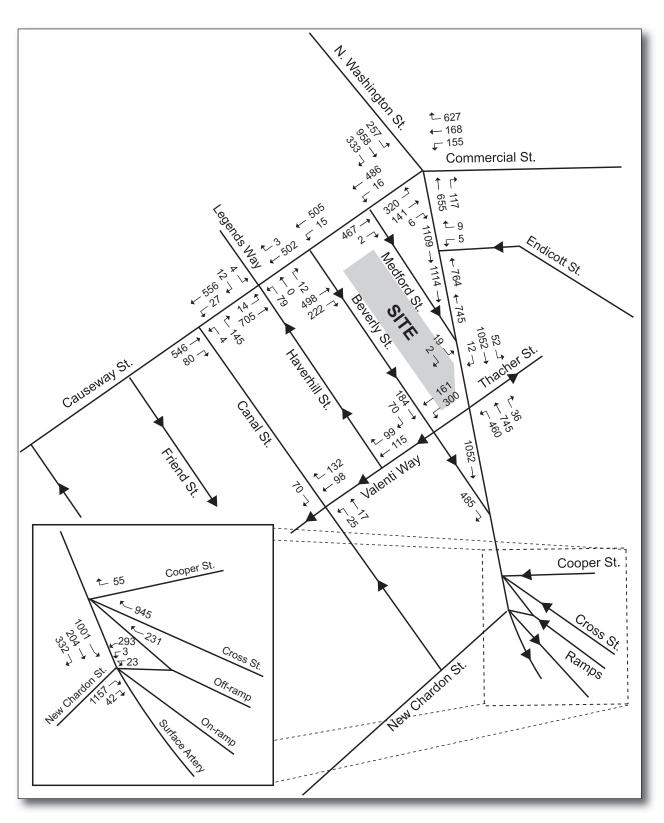




Table 2-10 No-Build Conditions (2013) Level of Service Summary, a.m. Peak Hour

	LOS	Delay	v/c	95 <sup>th</sup> Percentile
Intersection	LOS	(seconds)	Ratio	Queue
North Washington Street/Causeway Street	D	40.6	I _	T _
Causeway EB left	F	> 80	0.87	276
Causeway EB through	F.	> 80	0.89	#337
Causeway EB right	D	38.0	0.01	5
Causeway WB left/through	F	> 80	0.80	167
Causeway WB right	В	17.1	0.39	138
N. Washington NB through   through/right	E	57.2	0.76	#457
N. Washington SB left	С	30.6	0.64	352
N. Washington SB through   through/right	С	20.9	0.68	557
N. Washington SB right	С	23.6	0.67	495
North Washington Street/Valenti Way/ Thacher Street	F	> 80	_	_
N. Washington NB left	F	> 80	> 1	#750
N. Washington NB through/right	В	14.5	0.49	229
N. Washington SB left	Α	7.3	0.16	24
N. Washington SB through   through/right	С	30.4	0.69	333
North Washington Street/Beverly Street	С	33.2	_	
N. Washington SB through   through   through	D	44.4	0.90	291
Beverly SEB right   right   right	Α	7.7	0.24	67
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	В	18.6	_	_
Cooper WB right	Α	3.8	0.30	0
Cross NB through   through	Α	5.1	0.34	57
Sumner Tunnel NEB left   left	D	47.0	0.73	119
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	D	48.6	_	_
New Chardon EB right   right	Α	8.1	0.40	159
New Chardon EB hard right	Α	2.3	0.11	0
Sumner Tunnel WB hard left/left	С	21.2	0.16	68
Sumner Tunnel WB through   through	С	22.9	0.34	146
Surface SB left   left	E	67.4	0.71	m363
Surface SB through/right	E	68.5	0.77	m329
Surface SB right	E	70.1	0.76	m349

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Causeway Street/Haverhill Street/ Legends Way	Α	7.7	_	_
Causeway EB left	Α	2.4	0.02	m2
Causeway EB through   through   through	Α	2.2	0.20	24
Causeway WB through   through/right	Α	4.7	0.38	112
Haverhill NB left	D	52.8	0.70	136
Haverhill NB through/right	Α	0.1	0.03	0
Legends SB left/through/right	В	19.4	0.05	17
Valenti Way/Beverly Street	В	12.9	_	_
Valenti WB left	Α	4.3	0.25	41
Valenti WB left/through   through	В	14.2	0.25	95
Beverly SB through   through/right	В	18.1	0.26	74
Unsignalize	ed Intersect	ions	· •	1
North Washington Street/Endicott Street				
Endicott WB left/right	В	11. <i>7</i>	0.11	9
N. Washington NB through   through	Α	0.0	0.16	0
N. Washington SB through   through	Α	0.0	0.36	0
North Washington Street/Medford Street				
N. Washington NB through   through	Α	0.0	0.15	0
N. Washington SB through   through	Α	0.0	0.37	0
Medford SEB left/right	D	33.9	0.21	19
Causeway Street/Canal Street				
Causeway EB through	Α	0.0	0.25	0
Causeway EB through/right	Α	0.0	0.16	0
Causeway WB left/through	Α	2.8	0.09	7
Causeway WB through	Α	0.0	0.33	0
Canal NB left/right	В	11.8	0.11	9
Causeway Street/Medford Street				
Causeway EB through   through	Α	0.0	0.12	0
Causeway EB through/right	Α	0.0	0.07	0
Causeway WB left/through	Α	0.7	0.02	2
Causeway WB through	Α	0.0	0.37	0
Canal Street/Valenti Street	Α	<i>7</i> .1	_	_
Valenti WB through	Α	6.7	0.03	_
Valenti WB through/right	Α	6.3	0.05	_
Canal NB left	Α	<i>7</i> .1	0.01	_
Canal NB through	Α	6.8	0.03	_
Canal SB right	Α	7.6	0.11	_
Causeway Street/Beverly Street				
Causeway EB through   through	Α	0.0	0.10	0
Causeway EB through/right	A	0.0	0.19	0
Causeway WB left	В	10.2	0.02	2
Causeway through   through	_	0.0	0.24	

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Valenti Way/Haverhill Street				
Haverhill WB through	Α	0.0	0.09	0
Haverhill WB through/right	Α	0.0	0.14	0

<sup># 95&</sup>lt;sup>th</sup> percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

Shading indicates LOS has worsened from Existing Conditions.

Table 2-11 No-Build Conditions (2013) Level of Service Summary, p.m. Peak Hour

		Delay	v/c	95 <sup>th</sup> Percentile
Intersection	LOS	(seconds)	Ratio	Queue
Signalized	d Intersection	ons		
North Washington Street/Causeway Street	F	> 80	_	_
Causeway EB left	E	68.2	0.76	320
Causeway EB through	E	69.3	0.78	392
Causeway EB right	В	18.2	0.05	2
Causeway WB left*	F	> 80	> 1	#351
Causeway WB through	E	78.7	0.73	#281
Causeway WB right	F	> 80	> 1	#932
N. Washington NB through   through/right	E	55.2	0.84	506
N. Washington SB left	D	44.1	0.71	305
N. Washington SB through   through/right	С	26.7	0.69	435
N. Washington SB right	С	27.9	0.64	317
North Washington Street/Valenti Way/ Thacher Street	F	> 80	_	_
N. Washington NB left	F	> 80	> 1	#670
N. Washington NB through/right	В	15.8	0.70	356
N. Washington SB left	Α	7.1	0.20	27
N. Washington SB through   through/right	F	> 80	0.63	263
North Washington Street/Beverly Street	D	38.4	_	_
N. Washington SB through   through   through	D	54.7	0.84	341
Beverly SEB right   right   right	Α	3.2	0.24	22
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	В	17.4	_	_
Cooper WB right	Α	5.6	0.30	0
Cross NB through   through	Α	8.8	0.45	m188
Sumner Tunnel NEB left   left	D	47.6	0.68	107
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	F	> 80	_	_
New Chardon EB right   right	F	> 80	> 1	m#736
New Chardon EB hard right	Α	2.1	0.07	m0
Sumner Tunnel WB hard left/left	В	17.5	0.05	14
Sumner Tunnel WB through   through	В	19.2	0.23	96
Surface SB left   left	F	> 80	0.97	#485
Surface SB through/right	D	45.2	0.67	m228
Surface SB right	D	43.3	0.67	m252

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Causeway Street/Haverhill Street/	Α	4.7		
Legends Way	_ ^	4.7	_	_
Causeway EB left	Α	1.5	0.02	m3
Causeway EB through   through   through	Α	1.3	0.21	25
Causeway WB through   through/right	Α	2.5	0.22	56
Haverhill NB left	E	56.3	0.52	102
Haverhill NB through/right	Α	0.2	0.04	1
Legends SB left/through/right	С	22.1	0.09	22
Valenti Way/Beverly Street	С	34.0	_	_
Valenti WB left	С	31.8	0.21	m41
Valenti WB left/through   through	D	39.1	0.21	m54
Beverly SB through   through/right	С	29.2	0.24	92
	ed Intersect	ions	1	
North Washington Street/Endicott Street				
Endicott WB left/right	D	31.0	0.15	13
N. Washington NB through   through	Α	0.0	0.26	0
N. Washington SB through   through	Α	0.0	0.42	0
North Washington Street/Medford Street				
N. Washington NB through   through	Α	0.0	0.24	0
N. Washington SB through   through	Α	0.0	0.35	0
Medford SEB left/right	F	> 50	0.23	21
Causeway Street/Canal Street				
Causeway EB through	Α	0.0	0.22	0
Causeway EB through/right	Α	0.0	0.17	0
Causeway WB left/through	Α	1.8	0.04	3
Causeway WB through	Α	0.0	0.23	0
Canal NB left/right	В	13.0	0.34	37
Causeway Street/Medford Street				
Causeway EB through   through	Α	0.0	0.14	0
Causeway EB through/right	Α	0.0	0.07	0
Causeway WB left/through	Α	0.9	0.02	2
Causeway WB through	Α	0.0	0.25	0
Canal Street/Valenti Street	Α	7.4	_	_
Valenti WB through	Α	7.1	0.09	_
Valenti WB through/right	Α	7.2	0.21	_
Canal NB left	Α	7.7	0.04	_
Canal NB through	Α	7.1	0.04	_
Canal SB right	Α	8.0	0.10	_

		Delay	v/c	95 <sup>th</sup> Percentile
Intersection	LOS	(seconds)	Ratio	Queue
Causeway Street/Beverly Street				
Causeway EB through   through	Α	0.0	0.13	0
Causeway EB through/right	Α	0.0	0.21	0
Causeway WB left	В	10.1	0.02	2
Causeway through   through	Α	0.0	0.16	0
Valenti Way/Haverhill Street				
Haverhill WB through	Α	0.0	0.05	0
Haverhill WB through/right	Α	0.0	0.09	0

<sup>\*</sup> De facto left turn.

The following intersections and/or approaches experience a worsening in LOS from Existing Conditions to No-Build Conditions:

North Washington Street/Causeway Street. This intersection continues to operate at LOS D during the a.m. peak hour, but will worsen from LOS E to LOS F overall during the p.m. peak hour. During the a.m. peak hour, the Causeway Street eastbound right-turn approach will worsen to LOS D; the Causeway Street westbound left-turn/through approach will worsen to LOS F. During both peak hours, the North Washington Street northbound through/right-turn approach will worsen to LOS E; during the p.m. peak hour, the North Washington Street left-turn approach will worsen to LOS D.

*North Washington Street/Valenti Way/Thacher Street.* During the p.m. peak hour, operations at this intersection will worsen from LOS E to LOS F. During both the a.m. and the p.m. peak hours, the North Washington Street northbound left-turn approach will worsen to LOS F.

Causeway Street/Beverly Street. During the p.m. peak hour, the Causeway Street westbound left-turn approach operates at LOS B.

All other intersections and intersection approaches under No-Build Conditions continue to operate at the same LOS or better LOS as under Existing Conditions.

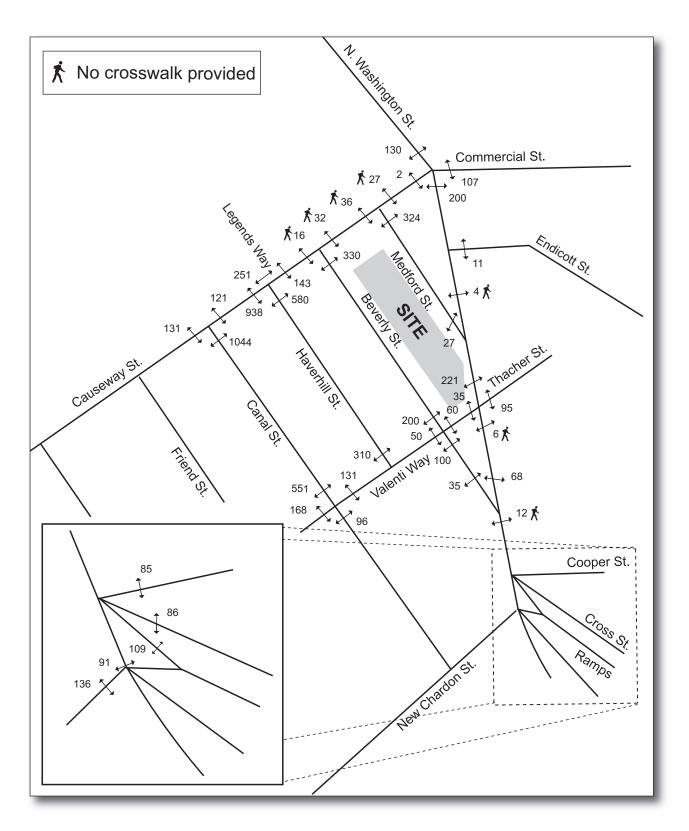
### 2.3.1.4 No-Build Pedestrian Operations

Applying a background growth rate of 1% per year to existing pedestrian volumes, the study team calculated No-Build pedestrian level of service. Results are shown in Figure 2-16, Figure 2-17, and Table 2-12.

<sup># 95</sup>th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

Shading indicates LOS has worsened from Existing Conditions.







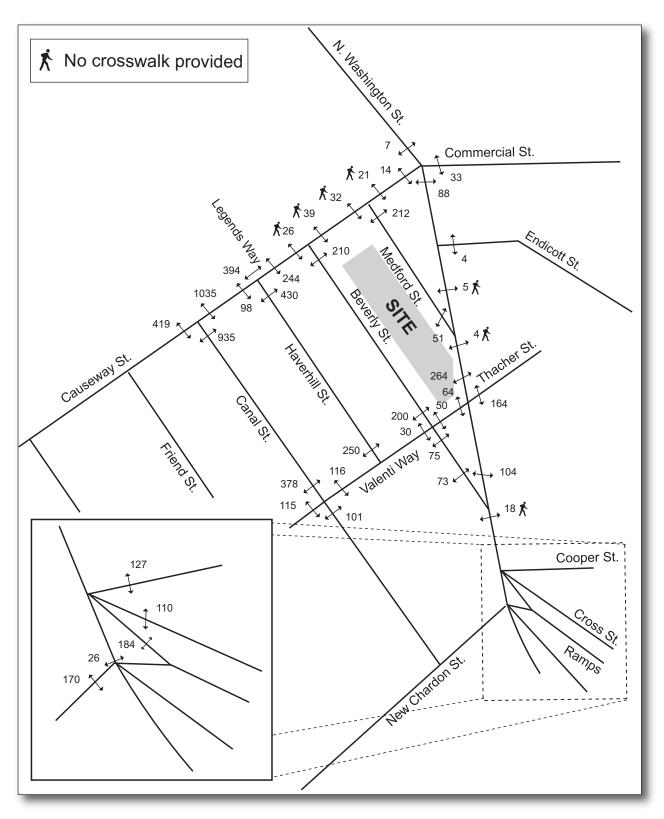






Table 2-12 No-Build Conditions (2013) Pedestrian Level of Service, Peak Hours

	Dela	y LOS	Space LOS	
Intersection	a.m.	p.m.	a.m.	p.m.
Signalized Intersections				
North Washington Street/Causeway Street				
Causeway East Crosswalk	В	В	Α	Α
Causeway West Crosswalk	В	В	Α	Α
N. Washington North Crosswalk	С	С	Α	Α
N. Washington South Crosswalk	С	С	Α	Α
North Washington Street/Valenti Way/Thacher Street				
Thacher East Crosswalk	Α	Α	Α	Α
Valenti West Crosswalk	Α	Α	Α	Α
N. Washington North Crosswalk	С	С	Α	Α
North Washington Street/Beverly Street				
Beverly North Crosswalk	Α	В	Α	Α
N. Washington North Crosswalk	В	В	Α	Α
North Washington Street/Cross Street/Cooper Street/				
Sumner Tunnel Off-ramp				
Cooper East Crosswalk	Α	Α	Α	Α
Sumner West Crosswalk	Α	Α	Α	Α
Cross South Crosswalk	В	В	Α	Α
New Chardon Street/Surface Road/I-93 Southbound &				
Callahan Tunnel On-ramp/Sumner Tunnel Off-ramp				
New Chardon West Crosswalk	Α	В	Α	Α
Surface North Crosswalk	Α	Α	Α	Α
Causeway Street/Haverhill Street/Legends Way				
Causeway East Crosswalk	В	В	Α	Α
Causeway West Crosswalk	В	В	В	Α
Legends North Crosswalk	Α	Α	Α	Α
Haverhill South Crosswalk	Α	Α	Α	Α
Beverly Street/Valenti Way				
Valenti East Crosswalk	В	В	Α	Α
Valenti West Crosswalk	В	В	Α	Α
Beverly North Crosswalk	Α	Α	Α	Α
Beverly South Crosswalk	D	D	Α	Α

Unsignalized Intersections				
	Dela	y LOS	Space	e LOS
Intersection	a.m.	p.m.	a.m.	p.m.
North Washington Street/Endicott Street				
Endicott East Crosswalk	Α	Α		_
North Washington Street/Medford Street				
Medford West Crosswalk	Α	Α	_	_
Causeway Street/Canal Street				
Causeway East Crosswalk	F	F	_	_
Causeway West Crosswalk	F	F	_	_
Canal South Crosswalk	Α	Α	_	_
Causeway Street/Medford Street				
Medford South Crosswalk	Α	Α	_	_
Canal Street/Valenti Way				
Valenti East Crosswalk	Α	Α	_	_
Valenti West Crosswalk	Α	Α	_	_
Canal North Crosswalk	Α	Α	_	_
Canal South Crosswalk	Α	Α	_	_
Causeway Street/Beverly Street				
Beverly South Crosswalk	В	Α	_	
Valenti Way/Haverhill Street				
Haverhill North Crosswalk	Α	Α		_

None of the crosswalks within the study area worsen to operate at unacceptable delay or space LOS under No-Build Conditions.

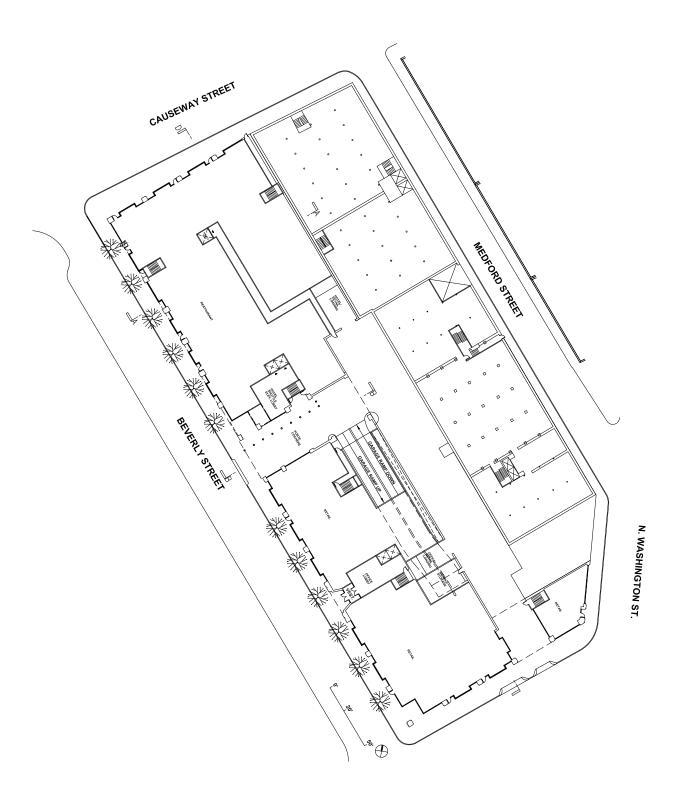
#### **Build Conditions** 2.3.2

The proposed Project includes a 153-room, short-term stay hotel; a 121-room, long-term stay hotel; 213,000 sf of office space; 19,000 sf of retail space; and 17,000 sf of restaurant space. The Project also includes 226 above-ground stacked parking spaces in the second floor of the building.

#### 2.3.2.1 Site Access and Circulation

## Vehicular Access

The West Site Driveway at Beverly Street and the South Site Driveway at Valenti Way will both provide two-way vehicular access to and from the site, as shown in Figure 2-18. Ramps to the parking level will connect to both driveways.







Passenger vehicles associated with the hotels will primarily use the West Site Driveway to reach the *porte cochère*, the main hotel entrance. Valets will take guest vehicles from the *porte cochère* into the parking garage. Passenger vehicles of office, retail, and restaurant employees will enter and exit the site through either driveway. Delivery vehicles as well as trash and recycling vehicles will use the South Site Driveway to reach the internal loading and service areas. The largest vehicle expected to use the loading docks is an SU-35, similar in size to a heavy garbage truck. Truck maneuvers into and out of the loading and service areas are presented in Appendix B.

#### Pedestrian Access

The hotel lobby will be located off Beverly Street, adjacent to the *porte cochère*. The office lobby will also be located off Beverly Street. The restaurant spaces will have multiple doorways located along Causeway Street and along Beverly Street. Retail spaces will have doorways along Beverly Street, Valenti Way, and North Washington Street. Figure 2-18, above, illustrates the various pedestrian access locations.

# 2.3.2.2 Trip Generation and Mode Split

Trip generation estimates for the Project use rates were derived from Institute of Transportation Engineers' (ITE) *Trip Generation* (7th edition, 2003) fitted curve equations and average trip rates. The following ITE land use codes (LUCs) were used to develop the new Project-related trips:

Land Use Code 310 — Hotel. A hotel is defined as a place of lodging that provides sleeping accommodations and supporting facilities, including restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities, or other retail and service shops. Calculations of the number of vehicle trips use ITE's average rate per room.

Land Use Code 710 — General Office. General office is defined as an office building containing multiple tenants. An office building typically contains a mixture of professional services. Calculations of the number of vehicle trips use ITE's average rate per 1,000 square feet.

Land Use Code 820 — Shopping Center. A shopping center is defined as an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. Due to the Project's Bulfinch Triangle location, the retail activity is expected to exhibit the trip generation characteristics of a portion of a shopping district. Therefore, LUC 820 is the most comparable category for trip generation. Calculations of the number of vehicle trips use ITE's fitted curve equation.

**LUC 931** — **Quality Restaurant.** A quality restaurant has a turnover rate of at least one hour or longer. Typically, the restaurant is open for lunch and dinner and is not part of a chain restaurant. Calculations of the number of vehicle trips use ITE's average rate per 1,000 sf.

# 2.3.2.3 Internal Trips

Some trips to and from the ground floor retail and restaurant uses are expected to be internal trips, or trips that are made between locations within the Project, not making use of the adjacent transportation facilities. ITE has found that "a key characteristic of a multi-use development is that trips among the various land uses can be made on-site and that these internal trips are not made on the major street system."

ITE provides a methodology for estimating internal capture rates, percentage reductions that are applied to trip generation estimates to account for internal trips. Capture rates based on previous studies of multi-use sites are published for various land use pairings by ITE. These rates are then applied to the unadjusted vehicle trips generated by the different uses at the project being studied, and the lower resulting capture from each land use pair is used.

For the Project, the study team applied capture rates determined through the ITE methodology for daily and p.m. peak-hour trips for the proposed uses at the site. No capture was assumed during the a.m. peak hour.

# 2.3.2.4 Mode Split

Mode split data were based on BTD guidelines for Area 1. National and local vehicle occupancy rates (VOR) were derived from 2000 U.S. Census Journey to Work Data and the Nationwide Personal Transportation Survey. These values are summarized in Table 2-13.

Table 2-13 Mode Split Assumptions

Time Period		Walk/Bike Share	Transit Share	Auto Share	Local Vehicle Occupancy Rate
Daily		Share	Silare	Silaic	Nuic
Hotel or Retail	In Out	54% 54%	15% 15%	31% 31%	1.8 1.8
Office	In	27%	30%	43%	1.2
	Out	27%	30%	43%	1.2
Restaurant	In Out	54% 54%	15% 15%	31% 31%	2.1 2.1
a.m. Peak Hour					
Hotel or Retail	In	57%	16%	27%	1.8
noter of Retail	Out	60%	13%	27%	1.8
Office	In Out	29% 33%	33% 29%	38% 38%	1.2 1.2
Restaurant	In Out	57% 60%	16% 13%	27% 27%	2.1 2.1
p.m. Peak Hour	II.				<u>'</u>
Hotel or Retail	In Out	60% 57%	13% 16%	27% 27%	1.8 1.8
Office	In Out	33% 29%	29% 33%	38% 38%	1.2 1.2
Restaurant	In Out	60% 57%	13% 16%	27% 27%	2.1 2.1

The new vehicle trips generated by the proposed development appear in Table 2-14. Detailed trip generation data for the Project are provided in Appendix BE.

Table 2-14 Vehicle Trip Generation

Time Period	Hotel	Office	Retail	Restaurant	Total
Daily					
In	283	480	241	136	1,140
Out	283	480	241	136	1,140
a.m. Peak Hour					
In	25	110	10	3	148
Out	16	15	6	1	38
p.m. Peak Hour					
In	18	19	22	16	<i>7</i> 5
Out	16	99	20	7	142

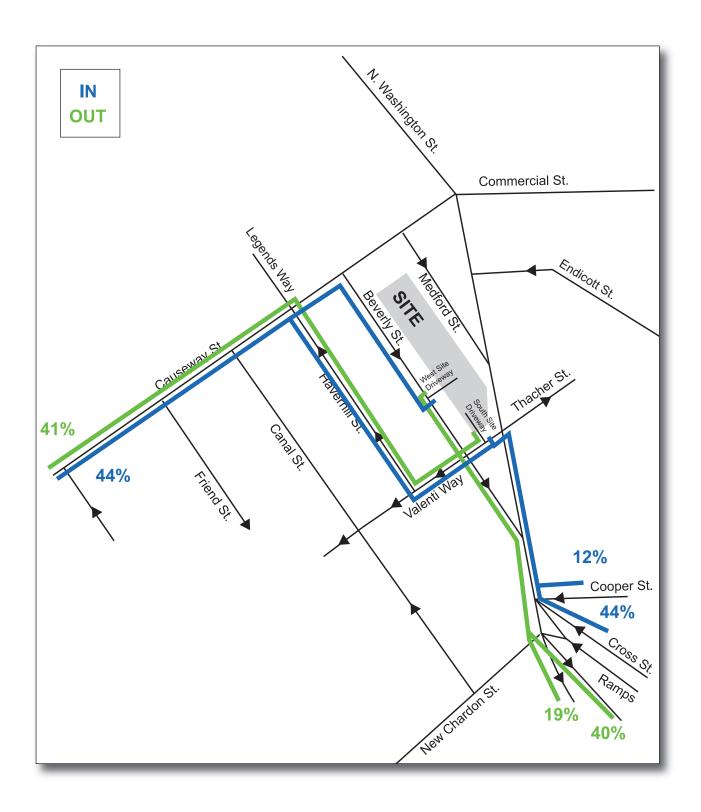
The Project is expected to add 2,280 new vehicle trips per day to local streets — 1,140 entering vehicles and 1,140 exiting vehicles. During the weekday a.m. peak hour, the Project will generate 148 entering and 38 exiting vehicle trips; during the weekday p.m. peak hour, 75 entering and 142 exiting vehicle trips will be generated.

### 2.3.2.5 Trip Distribution

The study team developed vehicular trip distribution data based on BTD guidelines, using origin destination characteristics for Area 1, an area defined by BTD for mode split and trip distribution. The trip distribution for the Project appears in Figure 2-19. Figure 2-20 and Figure 2-21 show Project trips added to the study area intersections.

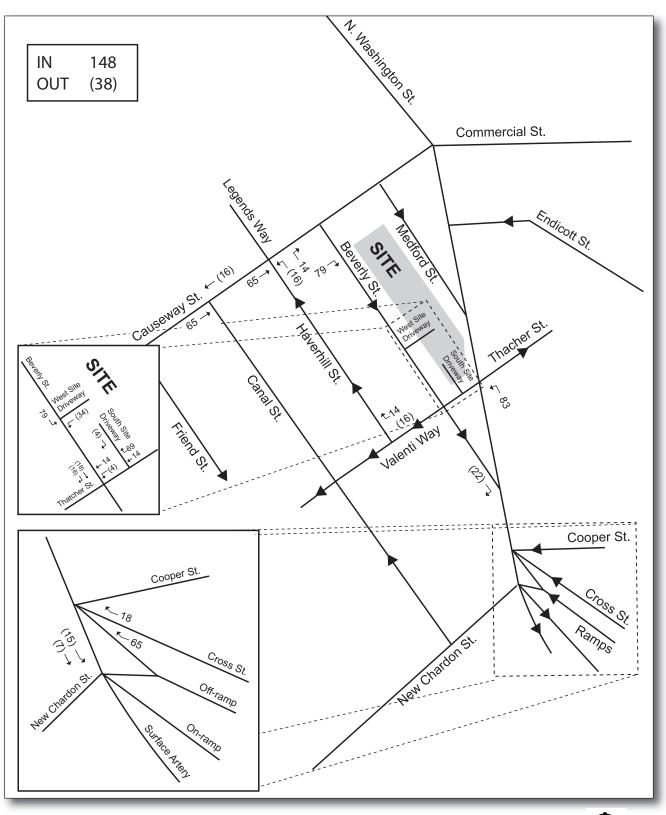
# 2.3.2.6 Build Conditions Traffic Operations

Build traffic volumes are shown in Figure 2-22 and Figure 2-23. The resulting Build traffic operations in the 2013 Build year are presented in Table 2-15 and Table 2-16. Full Synchro analysis reports are provided in Appendix B.



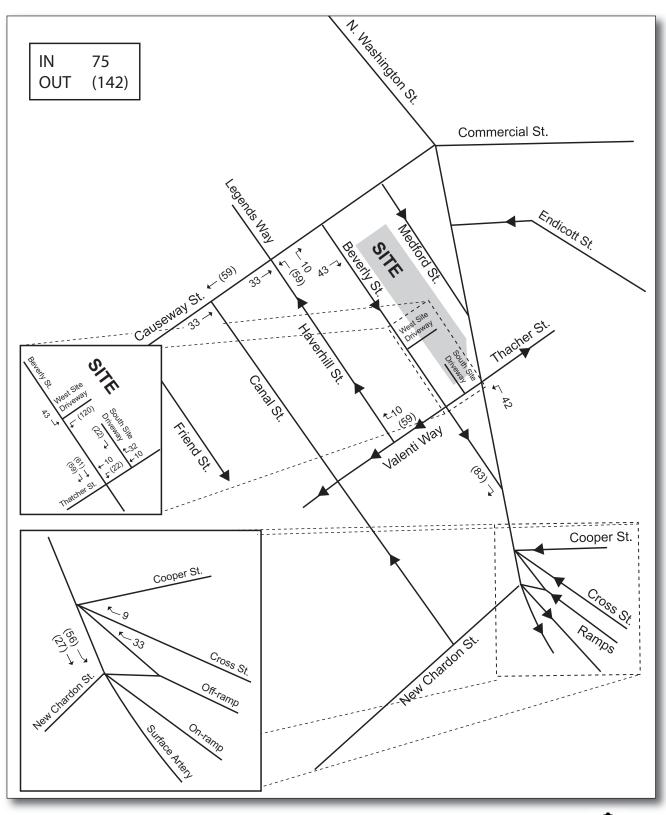






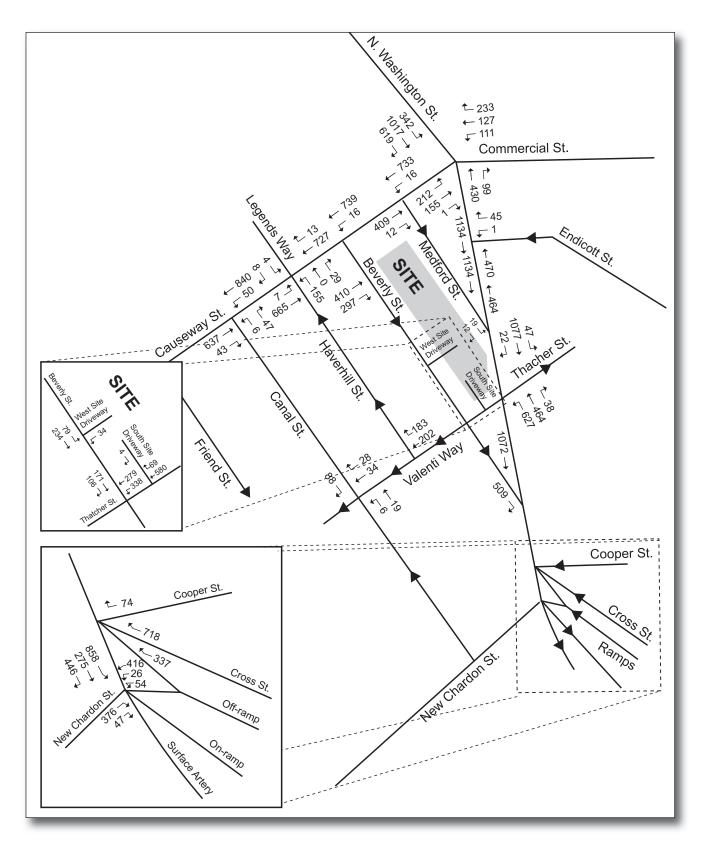
















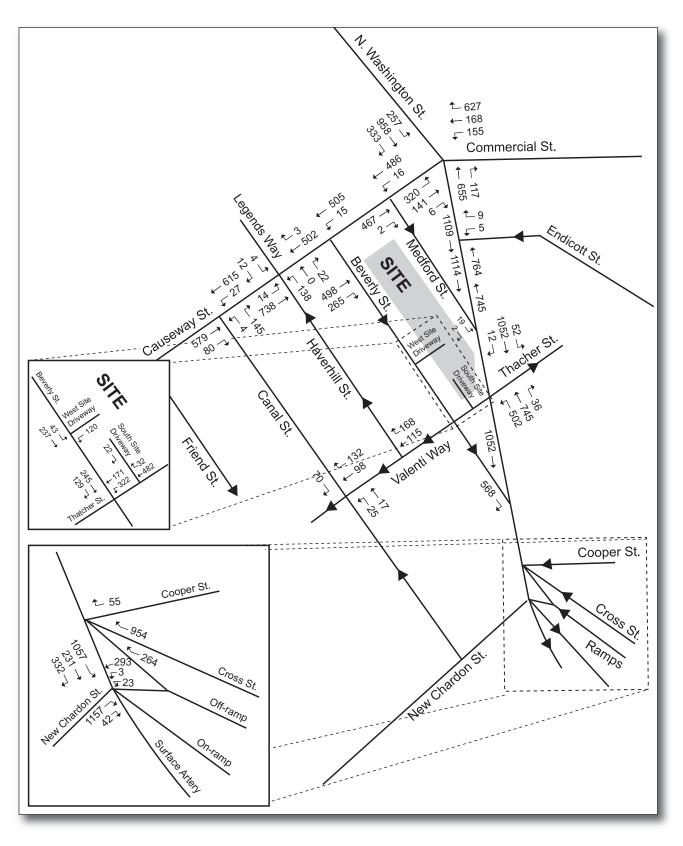






Table 2-15 Build Conditions (2013) Level of Service Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
	d Intersection			
North Washington Street/Causeway Street	D	40.6	_	_
Causeway EB left	F	> 80	0.87	276
Causeway EB through	F	> 80	0.89	#337
Causeway EB right	D	38.0	0.01	5
Causeway WB left/through	F	> 80	0.80	167
Causeway WB right	В	17.2	0.39	138
N. Washington NB through   through/right	E	57.2	0.76	#457
N. Washington SB left	С	30.6	0.64	352
N. Washington SB through   through/right	С	20.9	0.68	557
N. Washington SB right	С	23.6	0.67	495
North Washington Street/Valenti Way/ Thacher Street	F	> 80	_	_
N. Washington NB left	F	> 80	> 1	#880
N. Washington NB through/right	В	14.5	0.49	229
N. Washington SB left	Α	7.3	0.16	24
N. Washington SB through   through/right	С	30.4	0.69	333
North Washington Street/Beverly Street	С	33.0	_	_
N. Washington SB through   through   through	D	44.4	0.90	291
Beverly SEB right   right   right	Α	8.1	0.25	72
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	С	21.1	_	_
Cooper WB right	Α	6.6	0.32	13
Cross NB through   through	Α	5.9	0.36	65
Sumner Tunnel NEB left   left	D	46.8	0.77	140
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	D	49.8	_	_
New Chardon EB right   right	А	8.1	0.40	159
New Chardon EB hard right	А	2.3	0.11	0
Sumner Tunnel WB hard left/left	С	21.2	0.16	68
Sumner Tunnel WB through   through	С	22.9	0.34	146
Surface SB left   left	E	70.2	0.72	m371
Surface SB through/right	E	68.7	0.77	m334
Surface SB right	E	70.6	0.76	m352

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Causeway Street/Haverhill Street/ Legends Way	Α	8.0	_	_
Causeway EB left	Α	2.6	0.02	m2
Causeway EB through   through   through	Α	2.3	0.22	26
Causeway WB through   through/right	Α	5.1	0.39	117
Haverhill NB left	D	53.3	0.73	148
Haverhill NB through/right	Α	0.3	0.07	0
Legends SB left/through/right	В	18.8	0.05	1 <i>7</i>
Valenti Way/Beverly Street	В	13.4	_	_
Valenti WB left	Α	4.4	0.26	42
Valenti WB left/through   through	В	15.0	0.26	101
Beverly SB through   through/right	В	18.0	0.30	83
Unsignalize	d Intersect	ions	-1	
North Washington Street/Endicott Street				
Endicott WB left/right	В	11.7	0.11	9
N. Washington NB through   through	Α	0.0	0.16	0
N. Washington SB through   through	Α	0.0	0.36	0
North Washington Street/Medford Street				
N. Washington NB through   through	Α	0.0	0.15	0
N. Washington SB through   through	Α	0.0	0.37	0
Medford SEB left/right	D	33.9	0.21	19
Causeway Street/Canal Street				
Causeway EB through	Α	0.0	0.27	0
Causeway EB through/right	Α	0.0	0.17	0
Causeway WB left/through	Α	2.9	0.09	8
Causeway WB through	Α	0.0	0.34	0
Canal NB left/right	В	12.4	0.12	10
Causeway Street/Medford Street				-
Causeway EB through   through	Α	0.0	0.12	0
Causeway EB through/right	Α	0.0	0.07	0
Causeway WB left/through	Α	0.7	0.02	2
Causeway WB through	Α	0.0	0.37	0
Canal Street/Valenti Street	Α	7.1	<b>—</b>	_
Valenti WB through	Α	6.7	0.03	_
Valenti WB through/right	Α	6.3	0.05	_
Canal NB left	Α	7.1	0.01	_
Canal NB through	Α	6.8	0.03	_
Canal SB right	Α	7.6	0.11	_
Causeway Street/Beverly Street	<u> </u>	1	<del> </del>	
Causeway EB through   through	Α	0.0	0.10	0
Causeway EB through/right	A	0.0	0.24	0
Causeway WB left	В	10.6	0.03	2
Causeway WB left  Causeway through   through	A	0.0	0.24	0

Intersection	106	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile
	LOS	(seconds)	Kallo	Queue
Valenti Way/Haverhill Street				
Haverhill WB through	Α	0.0	0.09	0
Haverhill WB through/right	Α	0.0	0.16	0
Beverly Street/West Site Driveway				
Driveway WB left	В	11.0	0.06	5
Beverly SB left/through	Α	3.9	0.05	4
Beverly SB through	Α	0.0	0.10	0
Valenti Way/South Site Driveway				
Valenti WB through   through	Α	0.0	0.15	0
Valenti WB through/right	Α	0.0	0.12	0
Driveway SB right	Α	9.8	0.01	0

<sup># 95&</sup>lt;sup>th</sup> percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

Shading indicates LOS has worsened from No-Build Conditions.

Table 2-16 Build Conditions (2013) Level of Service Summary, p.m. Peak Hour

	1.00	Delay	v/c	95 <sup>th</sup> Percentile
Intersection	LOS	(seconds)	Ratio	Queue
	d Intersection		1	1
North Washington Street/Causeway Street	F	> 80	0.76	220
Causeway EB left	E	68.2	0.76	320
Causeway EB through	E	69.3	0.78	392
Causeway EB right	В	18.2	0.05	2
Causeway WB left*	F	> 80	> 1	#351
Causeway WB through	E	78.7	0.73	#281
Causeway WB right	F	> 80	> 1	#932
N. Washington NB through   through/right	E	55.2	0.84	506
N. Washington SB left	D	44.1	0.71	305
N. Washington SB through   through/right	С	26.7	0.69	435
N. Washington SB right	С	27.9	0.64	317
North Washington Street/Valenti Way/ Thacher Street	F	> 80	_	_
N. Washington NB left	F	> 80	> 1	#739
N. Washington NB through/right	В	15.6	0.70	362
N. Washington SB left	Α	<i>7</i> .1	0.20	27
N. Washington SB through   through/right	F	> 80	0.63	263
North Washington Street/Beverly Street	D	36.7	_	_
N. Washington SB through   through   through	D	54.7	0.84	341
Beverly SEB right   right   right	Α	3.4	0.28	29
North Washington Street/Cross Street/ Cooper Street/Sumner Tunnel Off-ramp	В	19.1	_	_
Cooper WB right	Α	8.5	0.32	5
Cross NB through   through	Α	10.0	0.46	m218
Sumner Tunnel NEB left   left	D	47.3	0.71	118
New Chardon Street/Surface Road/I-93 Southbound & Callahan Tunnel On-ramp/ Sumner Tunnel Off-ramp	F	> 80	_	_
New Chardon EB right   right	F	> 80	> 1	m#736
New Chardon EB hard right	Α	2.1	0.07	m0
Sumner Tunnel WB hard left/left	В	17.5	0.05	14
Sumner Tunnel WB through   through	В	19.2	0.23	96
Surface SB left   left	F	>80	> 1	#528
Surface SB through/right	D	51.7	0.70	m240
Surface SB right	D	43.7	0.70	m265

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Causeway Street/Haverhill Street/	Α	7.9	_	_
Legends Way				
Causeway EB left	Α	2.2	0.03	m4
Causeway EB through   through   through	Α	2.1	0.24	34
Causeway WB through   through/right	Α	4.0	0.24	73
Haverhill NB left	E	62.4	0.69	156
Haverhill NB through/right	Α	0.5	0.06	2
Legends SB left/through/right	В	19.1	0.07	20
Valenti Way/Beverly Street	С	32.1	_	_
Valenti WB left	С	31.3	0.22	m40
Valenti WB left/through   through	D	38.8	0.22	m53
Beverly SB through   through/right	С	26.6	0.35	120
Unsignaliz	ed Intersect	ions		
North Washington Street/Endicott Street				
Endicott WB left/right	D	31.0	0.15	13
N. Washington NB through   through	Α	0.0	0.26	0
N. Washington SB through   through	Α	0.0	0.42	0
North Washington Street/Medford Street				
N. Washington NB through   through	Α	0.0	0.24	0
N. Washington SB through   through	Α	0.0	0.35	0
Medford SEB left/right	F	> 50	0.23	21
Causeway Street/Canal Street				
Causeway EB through	Α	0.0	0.24	0
Causeway EB through/right	Α	0.0	0.17	0
Causeway WB left/through	Α	1.7	0.04	3
Causeway WB through	Α	0.0	0.25	0
Canal NB left/right	В	13.2	0.34	38
Causeway Street/Medford Street				
Causeway EB through   through	Α	0.0	0.14	0
Causeway EB through/right	Α	0.0	0.07	0
Causeway WB left/through	Α	0.9	0.02	2
Causeway WB through	Α	0.0	0.25	0
Canal Street/Valenti Street	A	7.4	_	_
Valenti WB through	A	7.1	0.09	_
Valenti WB through/right	A	7.2	0.21	_
Canal NB left	A	7.7	0.04	_
Canal NB through	A	7.1	0.04	_
Canal SB right	A	8.0	0.10	_

Intersection	LOS	Delay (seconds)	v/c Ratio	95 <sup>th</sup> Percentile Queue
Causeway Street/Beverly Street				
Causeway EB through   through	Α	0.0	0.13	0
Causeway EB through/right	Α	0.0	0.23	0
Causeway WB left	В	10.3	0.02	2
Causeway through   through	Α	0.0	0.16	0
Valenti Way/Haverhill Street				
Haverhill WB through	Α	0.0	0.05	0
Haverhill WB through/right	Α	0.0	0.13	0
Beverly Street/West Site Driveway				
Driveway WB left	В	11.0	0.18	16
Beverly SB left/through	Α	2.7	0.03	2
Beverly SB through	Α	0.0	0.10	0
Valenti Way/South Site Driveway				
Valenti WB through   through	Α	0.0	0.12	0
Valenti WB through/right	Α	0.0	0.08	0
Driveway SB right	A	9.5	0.03	2
* 5 6 1 1 6 1			•	

<sup>\*</sup> De facto left turn.

Under Build Conditions, all intersections and approaches operate at the same LOS as under No-Build Conditions during peak hours, with the exception of North Washington Street/Cross Street/Cooper Street during the a.m. peak hour, which worsens from overall LOS B to overall LOS C. This would still be an acceptable LOS during peak hours for this area.

Intersections for both Project driveways will operate at either LOS A or LOS B during both peak hours.

# 2.3.2.7 **Parking**

The Project will construct 226 new parking spaces on-site. The parking garage will employ stackers, and 10 spaces will be configured in tandem. Spaces will be provided for hotel guests as well as for employees of offices, retail uses, and restaurants, and hotel guests.

## 2.3.2.8 Public Transportation

Based on the trip generation calculations, the Project is expected to generate 1,992 (996 boarding and 996 alighting) transit trips each weekday. The Project will add 190 transit trips (34 boarding and 156 alighting) during the a.m. peak hour and 219 transit trips (150 boarding and 69 alighting) during the p.m. peak hour (see Table 2-17). These trips will be dispersed on the various inbound and outbound transit lines in the study area.

<sup># 95</sup>th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

Shading indicates LOS has worsened from No-Build Conditions.

Table 2-17 **Transit Trip Generation** 

Time Period	Hotel	Office	Retail	Restaurant	Total
Daily					
ln	246	402	210	138	996
Out	246	402	210	138	996
a.m. Peak Hour					
ln	27	115	10	4	156
Out	14	14	5	1	34
p.m. Peak Hour					
ln	16	18	19	16	69
Out	16	103	22	9	150

The rapid transit station providing the most convenient access to the Project site is the MBTA North Station superstation for the Orange and Green lines, located just one block west of the site. Some transit trips associated with the Project are also expected to use commuter rail services at North Station and bus services both at Haymarket Station and along North Washington Street. The future capacity of MBTA rapid transit service in the vicinity of the site is shown in Table 2-18. According to 2007 MBTA Ridership and Service Statistics, the reserve capacity is sufficient to accommodate the additional trips generated by the Project.

**Build Conditions Public Transportation Table 2-18** 

Line	Origin—Destination	Car Capacity <sup>1</sup>	Cars Per Train²	Train Capacity <sup>2</sup>	Trains Per Hour	Hourly 1-way Capacity <sup>3</sup>
Orange Line	Forest Hills-Oak Grove	131	6	786	15	11,790
Green Line	Lechmere–Boston College, Cleveland Circle, Riverside, Heath	90	2/3	180/270	18	4,320
Blue Line	Wonderland-Bowdoin	95	6	570	15	8,550
Red Line	Alewife-Braintree/Ashmont	167	6	1,002	16	16,032

<sup>&</sup>lt;sup>1</sup> Per MBTA service policy for peak-hour service. "Crush loaded" capacity is 1,344 for a six-car Orange Line train and 538 for a two-car Green Line train.

<sup>&</sup>lt;sup>2</sup> The Riverside Branch has three three-car trains in service.

<sup>&</sup>lt;sup>3</sup> Per MBTA, by 2008: three-car, low-floor Green Line trains on D Branch; six-car Blue Line trains (2005).

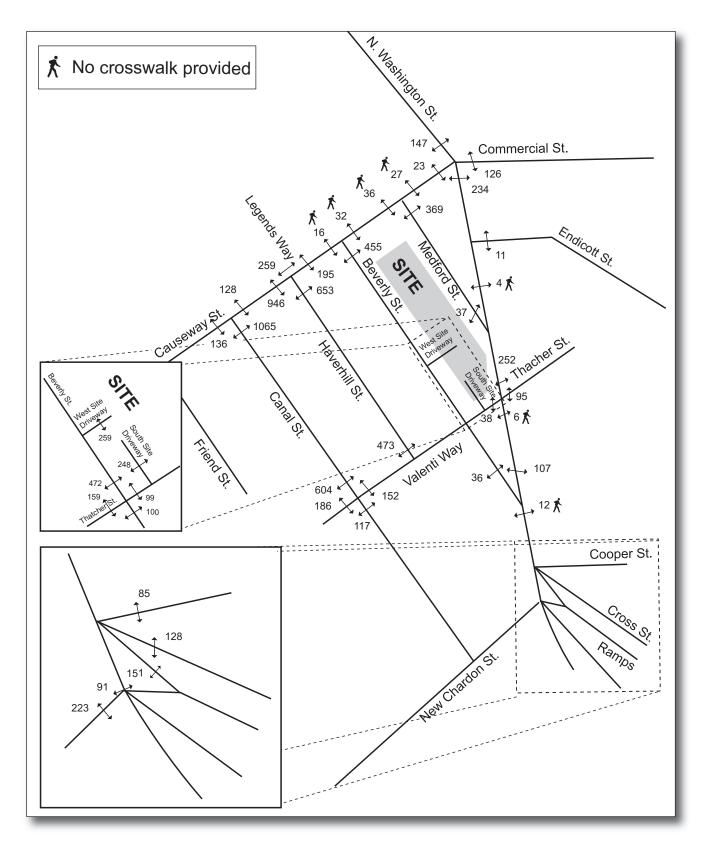
# 2.3.2.9 Build Conditions Pedestrian Operations

The Project is expected to generate 5,004 daily walk trips, as shown in Table 2-19, and an additional 1,992 daily transit trips that require a walk trip to or from the site, totaling an additional 6,996 pedestrian trips per day. During the a.m. peak hour, the Project will result in 355 new pedestrian trips along with 190 transit trips. During the p.m. peak hour, the Project will result in 516 new pedestrian trips along with 219 transit trips. This correlates with an average of approximately 11 new pedestrian trips per minute during all peak-hour periods.

Table 2-19 Pedestrian Trip Generation

Time Period	Hotel	Office	Retail	Restaurant	Total
Daily					
In	886	362	<i>7</i> 55	499	2,502
Out	886	362	<i>7</i> 55	499	2,502
a.m. Peak Hour					
In	96	101	36	14	247
Out	65	16	24	3	108
p.m. Peak Hour					
In	<i>7</i> 1	20	88	74	253
Out	61	91	78	33	263

Pedestrian trips associated with the Project were distributed to the existing pedestrian network in the study area. Pedestrians associated with the restaurant and retail areas were distributed among the multiple entryways. The total Build Conditions pedestrian volumes are shown in Figure 2-24 and Figure 2-25. Pedestrian level of service results are shown in Table 2-20.





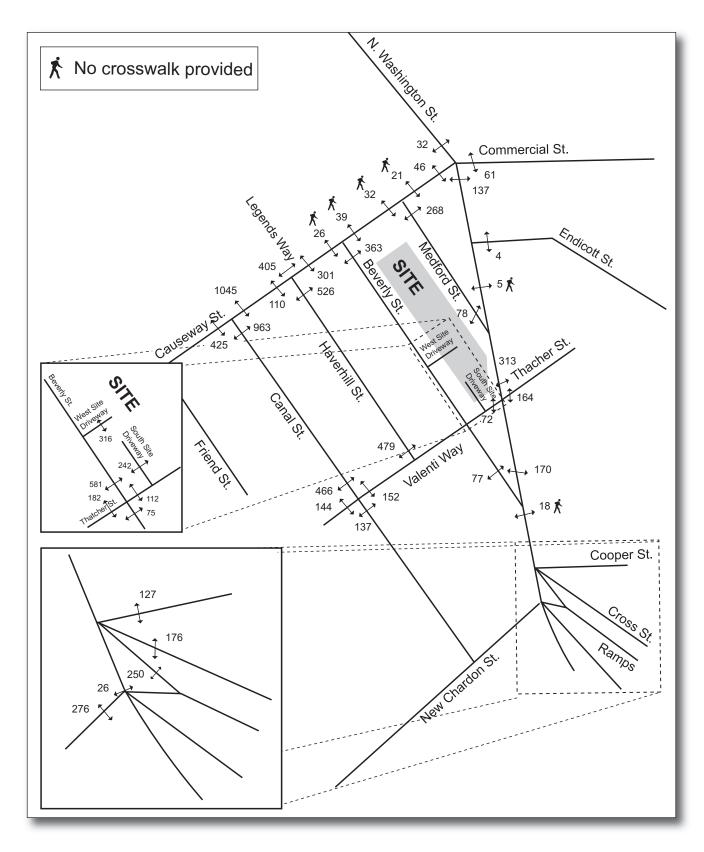




Table 2-20 Build Conditions (2013) Pedestrian Level of Service

	Dela	Delay LOS		Space LOS	
Intersection	a.m. p.m.		a.m.	p.m.	
Signalized Intersections					
North Washington Street/Causeway Street					
Causeway East Crosswalk	В	В	Α	Α	
Causeway West Crosswalk	В	В	Α	Α	
N. Washington North Crosswalk	С	С	Α	Α	
N. Washington South Crosswalk	С	С	Α	Α	
North Washington Street/Valenti Way/Thacher Street					
Thacher East Crosswalk	Α	Α	Α	Α	
Valenti West Crosswalk	Α	Α	Α	Α	
N. Washington North Crosswalk	С	С	Α	Α	
North Washington Street/Beverly Street					
Beverly North Crosswalk	Α	В	Α	Α	
N. Washington North Crosswalk	В	В	Α	Α	
North Washington Street/Cross Street/Cooper Street/					
Sumner Tunnel Off-ramp					
Cooper East Crosswalk	Α	Α	Α	Α	
Sumner West Crosswalk	Α	Α	Α	Α	
Cross South Crosswalk	В	В	Α	Α	
New Chardon Street/Surface Road/I-93 Southbound &					
Callahan Tunnel On-ramp/Sumner Tunnel Off-ramp					
New Chardon West Crosswalk	Α	В	Α	Α	
Surface North Crosswalk	Α	Α	Α	Α	
Causeway Street/Haverhill Street/Legends Way					
Causeway East Crosswalk	В	В	Α	Α	
Causeway West Crosswalk	В	В	В	Α	
Legends North Crosswalk	Α	Α	Α	Α	
Haverhill South Crosswalk	Α	Α	Α	Α	
Beverly Street/Valenti Way					
Valenti East Crosswalk	В	В	Α	Α	
Valenti West Crosswalk	В	В	Α	Α	
Beverly North Crosswalk	Α	Α	Α	Α	
Beverly South Crosswalk	D	D	Α	Α	

Unsignalized Intersections				
	Delay	/ LOS	Space LOS	
Intersection	a.m.	p.m.	a.m.	p.m.
North Washington Street/Endicott Street				
Endicott East Crosswalk	Α	Α	_	_
North Washington Street/Medford Street				
Medford West Crosswalk	Α	Α	_	_
Causeway Street/Canal Street				
Causeway East Crosswalk	F	F	_	_
Causeway West Crosswalk	F	F	_	_
Canal South Crosswalk	Α	В	_	_
Causeway Street/Medford Street				
Medford South Crosswalk	Α	Α	_	_
Canal Street/Valenti Way				
Valenti East Crosswalk	Α	В	_	_
Valenti West Crosswalk	Α	Α	_	_
Canal North Crosswalk	Α	В	_	_
Canal South Crosswalk	Α	Α	_	_
Causeway Street/Beverly Street				
Beverly South Crosswalk	С	В	_	_
Valenti Way/Haverhill Street				
Haverhill North Crosswalk	Α	Α	_	_
Beverly Street/West Site Driveway				
Driveway East Crosswalk	Α	Α	_	_
Valenti Way/South Site Driveway				
Driveway North Crosswalk	Α	Α	_	_

Four crosswalks at unsignalized intersections within the study area worsen in delay LOS but remain at delay LOS C or better under Build Conditions:

Causeway Street/Canal Street. The crosswalk on the south side of the intersection across Canal Street worsens from delay LOS A to delay LOS B during the p.m. peak hour, remaining at an acceptable level of service.

*Canal Street/Valenti Way.* The crosswalk on the east side of the intersection across Valenti Way and the crosswalk on the north side of the intersection across Canal Street both worsen from delay LOS A to delay LOS B during the p.m. peak hour, remaining at an acceptable level of service.

Causeway Street/Beverly Street. The crosswalk on the south side of the intersection across Beverly Street worsens from delay LOS B to delay LOS C during the a.m. peak hour and

from delay LOS A to delay LOS B during the p.m. peak hour, remaining at an acceptable level of service.

# 2.3.2.10 Bicycle Accommodations

Secure bicycle storage will be made available to office tenants and visitors to encourage bicycling as an alternative mode of transportation. Consistent with zoning guidelines for the retail space, eight bicycle spaces will be provided in the garage. Bicycle racks for the office use will be sited in safe, secure locations, and in quantities necessary to meet the demand.

# 2.3.2.11 Loading and Service Accommodations

The Project includes two internal loading docks and service areas located as previously depicted in Figure 2-18. The northern loading and service area will serve the hotels and restaurants, while the southern loading and service area will serve the retail and office tenants. The northern loading dock is designed to accommodate three single-unit trucks, each of up to 35 feet in length. The southern loading dock provides spaces for one single-unit truck of up to 35 feet in length. Trash and recycling activity can be handled through the internal loading and service areas.

Vehicular access to the internal loading and service areas will be provided from the South Site Driveway from Valenti Way. Single-unit box trucks of up to SU-35 in size will be able to enter and exit both loading docks through this driveway. Truck turning diagrams for the proposed loading and service areas are presented in Appendix B.

An on-site loading dock manager will manage all service and loading operations. Whenever possible, loading and service activities will be scheduled to occur during off-peak hours. All loading and service areas will post permanent "no idling" signs.

#### 2.3.2.12 Shared Car Service

The Project will work with Zipcar<sup>™</sup> or another shared car service to determine the feasibility of reserving one or more shared-car spaces within the parking garage. Zipcar locations in the immediate area (within a five-minute walk) include:

- Longfellow Garage, Staniford Street (three cars);
- ◆ Government Center Garage, New Chardon Street (four cars); and
- ♦ Langone's Funeral Home, Commercial Street (four cars).

## 2.3.3 Transportation Mitigation Measures

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

### 2.3.3.1 Pedestrian Mitigation

New sidewalks will be installed adjacent to the Project site, consistent with the parameters of the *Bulfinch Triangle Design and Development Guidelines*.

## 2.3.4 Transportation Demand Management

The Proponent is committed to implementing Travel Demand Management (TDM) measures to reduce parking demand and dependence on autos. TDM measures that will be implemented during the construction phase will be outlined in the Construction Management Plan. TDM will be facilitated by both the nature and the location of the proposed Project by the site's proximity to workplaces, shopping, tourist destinations, and transit. The Proponent is committed to implementing a TDM program that supports the City's efforts to reduce dependency on the automobile by encouraging travelers to use alternatives to driving alone, especially during peak time periods.

The Proponent is prepared to take advantage of the site's pedestrian and transit access to future visitors and employees. On-site management will provide a transportation coordinator to coordinate transportation services during the leasing process and afterwards as part of Project management, including provision of transit information (schedules, maps, fare information) in the building lobby. The transportation coordinator will also work with hotel staff to raise awareness of public transportation alternatives. The Proponent will encourage the hotel operators to offer MBTA passes to employees through payroll deduction and to subsidize the monthly pass costs through a direct percentage subsidy or a pre-tax payment plan.

The Transportation Access Plan Agreement (TAPA) will confirm the TDM commitments outlined in the Article 80 Review of the Project. These TDM measures may include:

*Limited Parking:* The Project will provide 226 parking spaces for hotel guests and employees of the various site tenants. The Project parking spaces are allocated as follows:

Land Use	Amount	Parking Spaces	Parking Ratio	BTD Parking Ratio
Hotel	274 keys	82	0.3/room	0.4/room
Office	213,000 sf	100	0.47/1,000 sf	0.4/1,000 sf
Retail/ Restaurant	36,000	44	1.2/1,000 sf	Not given

*Orientation Packets:* The Proponent will provide orientation packets to tenants containing information on the available transportation choices, including transit routes and schedules.

**Transportation Coordinator:** The Proponent will designate a full-time employee in the hotel staff as transportation coordinator to manage loading and service activities and provide alternative transportation materials to visitors and tenants.

*Bicycle Racks:* The Proponent will provide bicycle racks in secure, sheltered areas within the garage for tenants and visitors. Consistent with BTD's bicycle parking guidelines, which require one bicycle parking space per 10 vehicle spaces for retail, or one bicycle parking space per 10,000 sf of retail space, whichever is greater; four bicycle spaces will be provided in the garage. Bicycle racks for the building uses will be in safe, secure locations, and in quantities necessary to meet the demand.

# 2.4 Evaluation of Short-term/Construction Impacts

Most construction activities will be accommodated within current site boundaries. Details of the construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and transportation routes are described in Section 3.11 of this PNF and will be addressed in greater detail in a Construction Management Plan to be filed with BTD in accordance with the City's transportation maintenance plan requirements.

To minimize transportation impacts during the construction period, measures included in the Construction Management Plan may include the following:

- Establishment of detailed construction trucking routes to and from the site;
- Provision of limited construction worker parking on-site, and encouragement of worker carpooling;
- Consideration of a subsidy for MBTA passes for full-time employees; and
- Provision of secure spaces on-site for workers' supplies and tools to limit tool delivery.

**Environmental Protection Component** 

# 3.0 ENVIRONMENTAL PROTECTION COMPONENT

#### 3.1 Pedestrian Level Winds

Pedestrian level wind (PLW) studies for projects in the vicinity of the Merano Project, including the Bulfinch Triangle Project, Simpson Parcel 1 and Canal Place (now known as Avenir), showed that the projects would generally improve the pedestrian level wind conditions in the area. For all three projects, none of the locations evaluated for either existing or build conditions is estimated to have PLWs that exceed the BRA guideline wind speed of 31 mph more often than once in 100 hours. In addition, none of the studied locations for the three projects was predicted to exceed the Pedestrian Level Wind Category of 3, Comfortable for Walking. Based on these results, impacts from the proposed Project are anticipated to be insignificant, similar to those of other proposed projects in the area. A qualitative wind analysis will be performed if one is requested by the BRA.

# 3.2 Shadow Impacts

# 3.2.1 Introduction and Methodology

As is typically required by the BRA, a shadow impact analysis was conducted to investigate shadow impacts from the Project during three time periods (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the vernal equinox (March 21), summer solstice (June 21), autumnal equinox (September 21), and the winter solstice (December 21). Due to the change in legislation regarding Daylight Saving Time, the shadow impacts from the vernal equinox (March 21) and the autumnal equinox would be virtually the same. For this study, the vernal equinox shadow impacts are studied as if March 21 was still in Standard Time, meaning they are studied during the time periods of 10:00 a.m., 1:00 p.m., and 4:00 p.m. In addition, shadow studies were conducted for the 6:00 p.m. time period during the summer solstice and autumnal equinox.

The shadow analysis presents net new shadow from the buildings, as well as the existing shadow, and illustrates the incremental impact of the Project. The analysis focuses on public open spaces, major pedestrian areas, bus and subway stops, and the sidewalks adjacent to and in the vicinity of the Project site. Shadows have been determined using the applicable Altitude and Azimuth data for Boston, shown in Table 3.2-1, as is typically requested by the BRA.

Table 3.2-1 Azimuth and Altitude Data

Date	Local Time	Solar Position		
		Altitude	Azimuth	
March 21	10:00 a.m. DST	33.0	125.7	
	1:00 p.m. DST	48.0	-1 <i>7</i> 6.9	
	4:00 p.m. DST	30.5	-121.8	
June 21	9:00 a.m. DST	39.9	93.5	
	12:00 p.m. DST	68.8	149.4	
	3:00 p.m. DST	56.5	-113. <i>7</i>	
	6:00 p.m. DST	23.9	-79.3	
September 21	9:00 a.m. DST	25.9	115.3	
	12:00 p.m. DST	47.4	166.0	
	3:00 p.m. DST	37.4	-132.9	
	6:00 p.m. DST	7.3	-96.0	
December 21	9:00 a.m. EST	14.2	141.9	
	12:00 p.m. EST	24.1	-175.6	
	3:00 p.m. EST	10.0	-135.1	

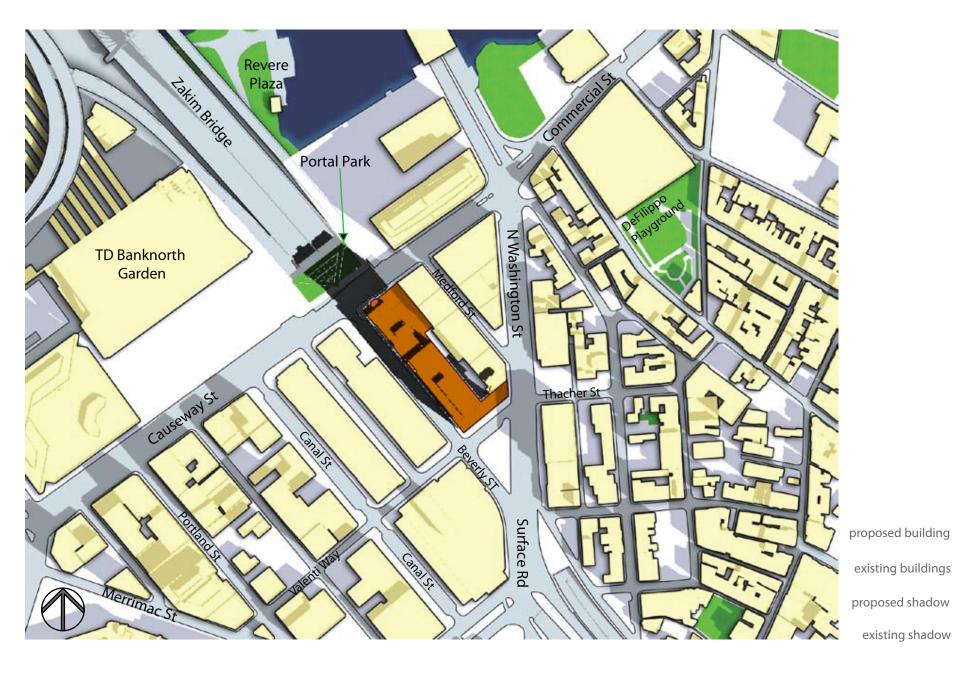
### 3.2.2 Vernal Equinox (March 21)

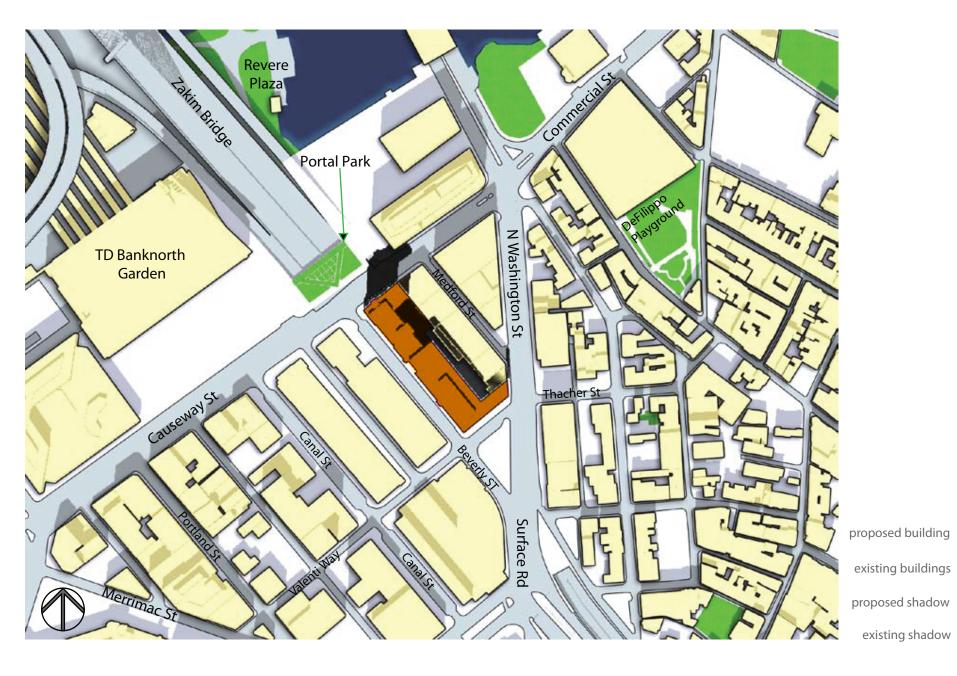
At 10:00 a.m. during the vernal equinox, new shadow from the Project will be cast in a northwesterly direction. Shadow will be cast across a minor portion of Causeway Street and its sidewalks, Beverly Street and its sidewalks, and a portion of I-93. New shadow will also be cast onto a portion of Portal Park.

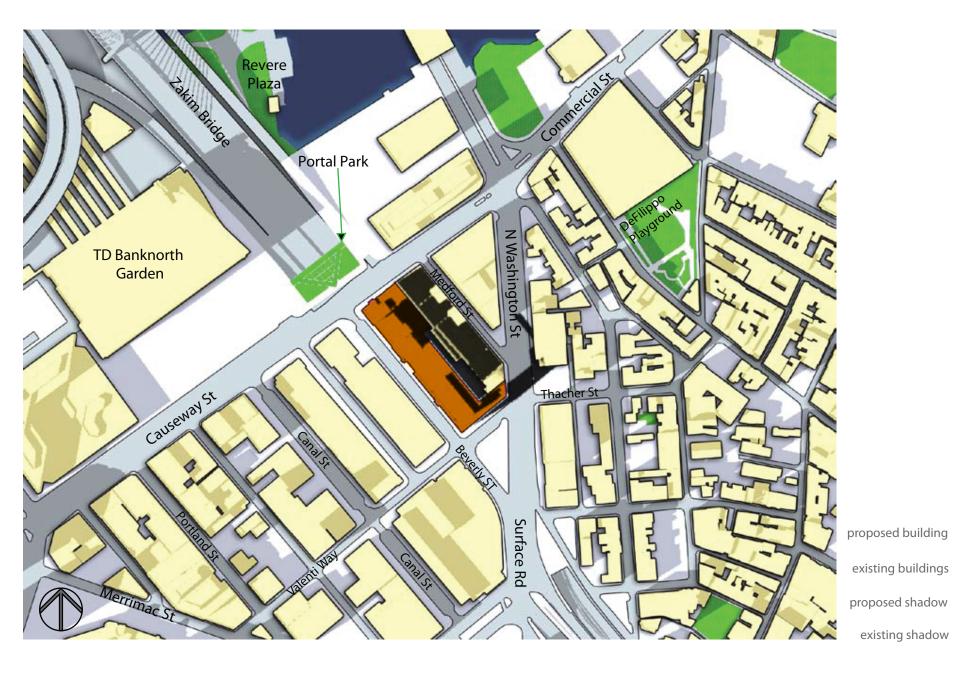
At 1:00 p.m., new shadow will be cast in a northerly direction. Shadow will be cast onto a minor portion of Causeway Street and its sidewalks, and a minor portion of North Washington Street's western sidewalk.

At 4:00 p.m., new shadow will be cast in a northeasterly direction onto a minor portion of North Washington Street and its sidewalks, and onto a portion of Valenti Way's northern sidewalk.

New shadow created on the vernal equinox is illustrated in Figures 3.2-1 through 3.2-3.







## 3.2.3 Summer Solstice (June 21)

At 9:00 a.m. during the summer solstice, new shadow from the Project will be cast in a westerly direction. Shadow will be cast onto Beverly Street and its sidewalks and a portion of Causeway Street and its sidewalks. New shadow will also be cast onto a small portion of Portal Park.

At 12:00 p.m., new shadow will be cast in a northwesterly direction. Shadow will be cast onto a minor portion of Causeway Street and its southern sidewalk.

At 3:00 p.m., new shadow will be cast in a northeasterly direction onto a minor portion of North Washington Street and its western sidewalk, and onto a portion of Valenti Way's northern sidewalk.

At 6:00 p.m., new shadow will be cast in a southeasterly direction across a portion of North Washington Street and its sidewalks, and a portion of Thacher Street and its sidewalks.

New shadow created on the summer solstice is illustrated in Figures 3.2-4 through 3.2-7.

#### 3.2.4 Autumnal Equinox (September 21)

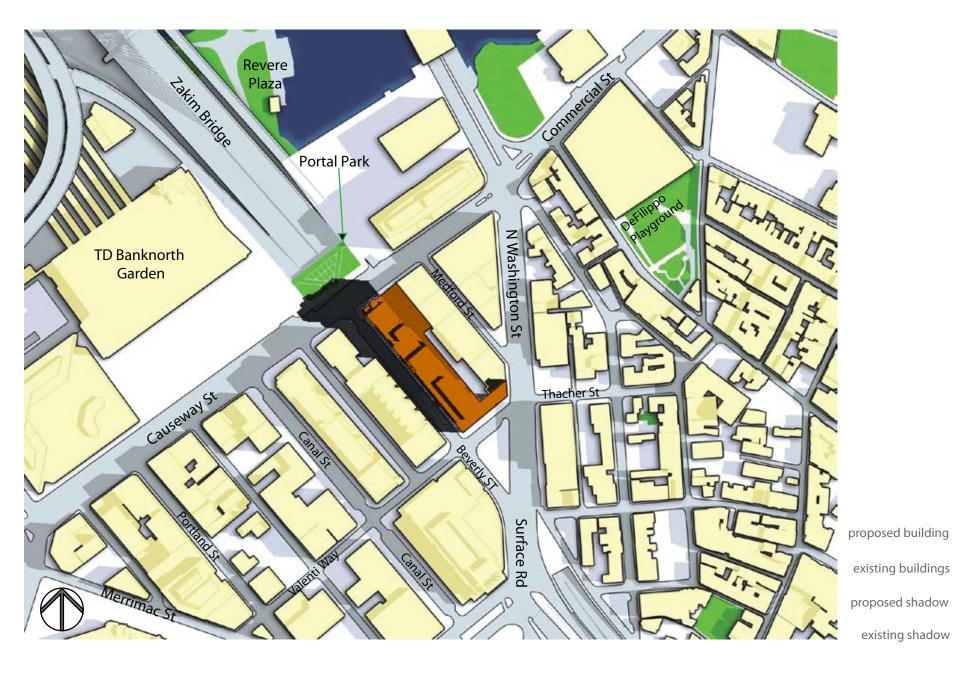
At 9:00 a.m. during the autumnal equinox, new shadow from the Project will be cast in a northwesterly direction onto Beverly Street and its sidewalks, a portion of Causeway Street and its sidewalks, a portion of I-93 South and one of its ramps. In addition, new shadow will be cast onto a portion of Portal Park.

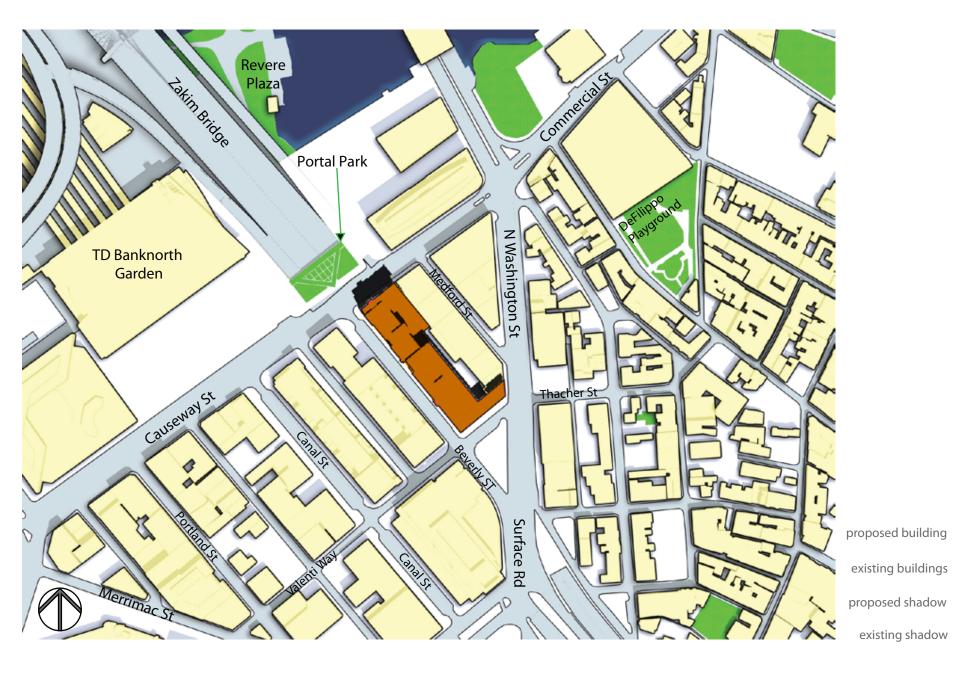
At 12:00 p.m., shadow will be cast northerly onto a portion of Causeway Street and its sidewalks and a minor portion of the existing Beverly Street (north of Causeway Street). In addition, by noon, new shadow on Portal Park is limited to the southeast corner of the Park.

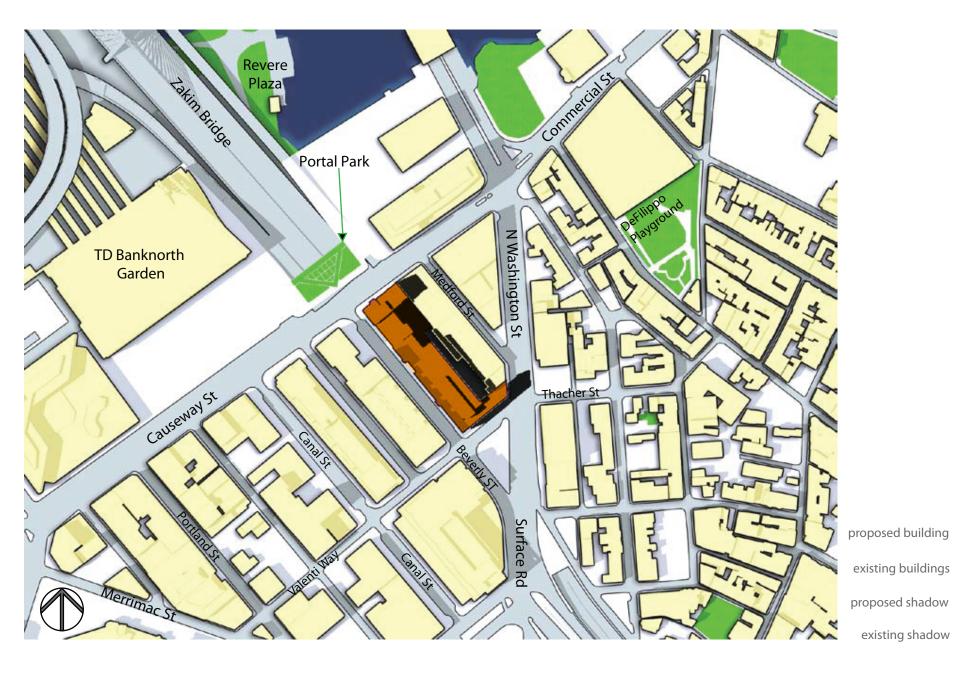
At 3:00 p.m., shadow will be cast northeasterly across minor a portion of Causeway Street and its southern sidewalk, and a minor portion of North Washington Street and its sidewalks.

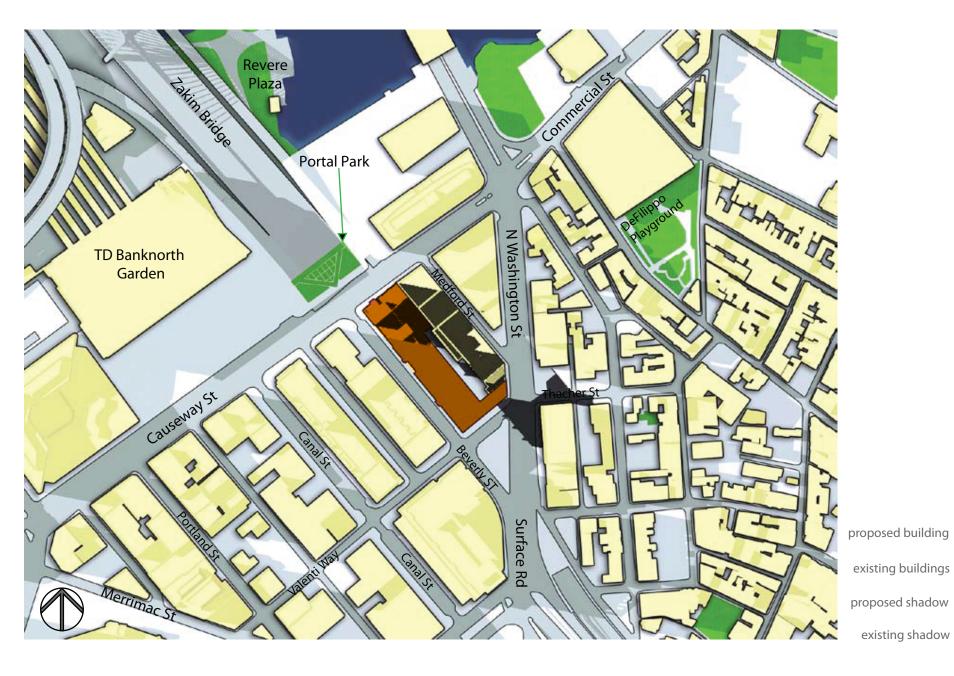
At 6:00 p.m., much of the area is in shadow and new shadow from the Project will be cast in an easterly direction. New shadow will only be cast on rooftops of two nearby buildings.

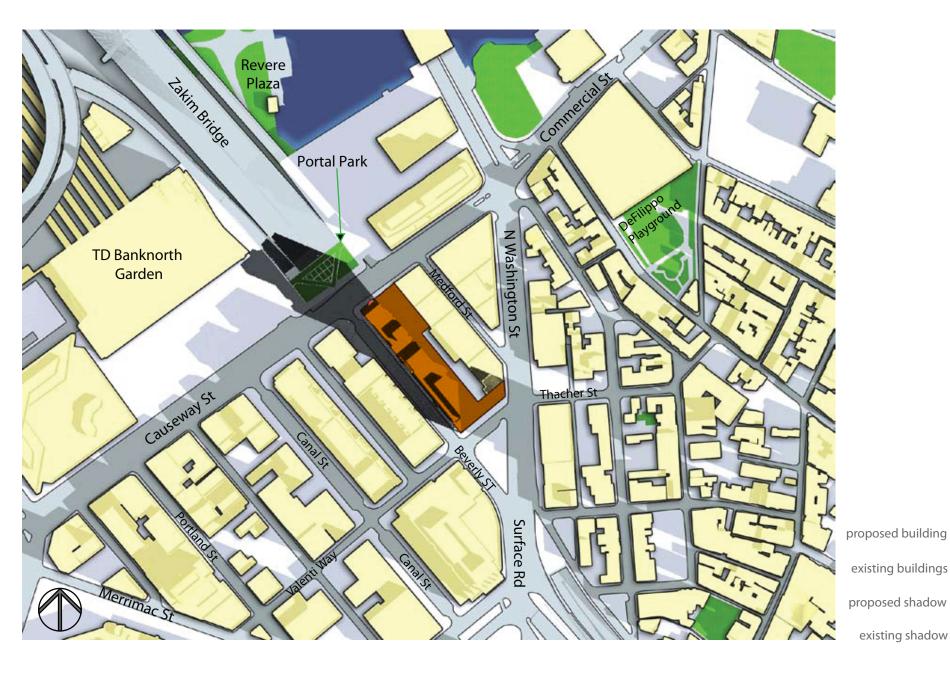
New shadow created on the autumnal equinox is illustrated in Figures 3.2-8 through 3.2-11.

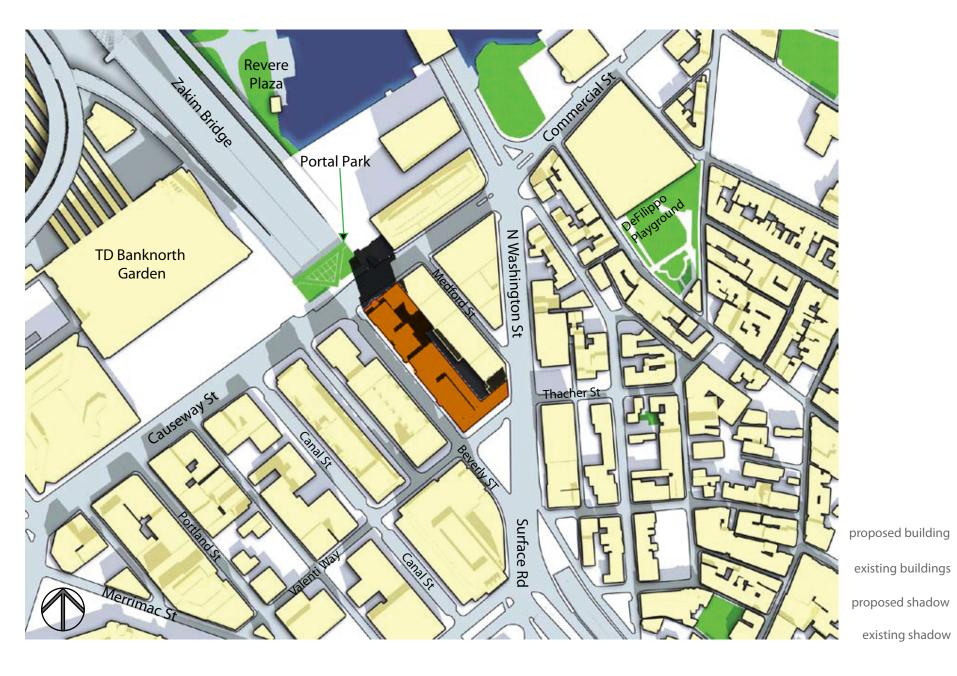




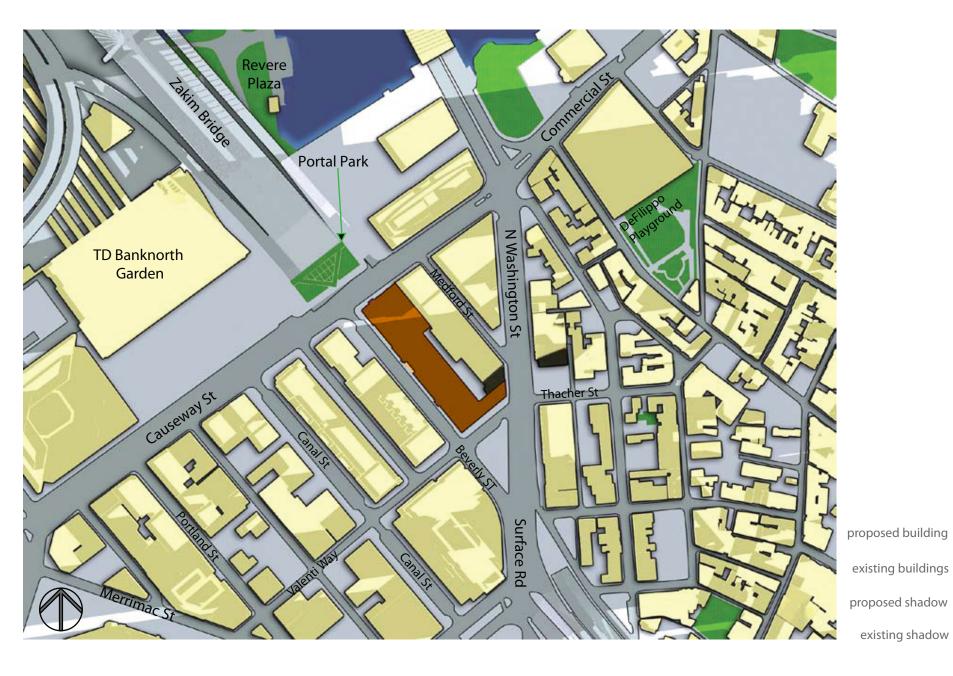












#### 3.2.5 Winter Solstice (December 21)

The winter solstice creates the least favorable conditions for sunlight in New England. The sun angle during the winter is lower than in any other season, causing the shadows to elongate and create considerable shadow in the area.

At 9:00 a.m., new shadow falls northwesterly across a portion of Causeway Street and its sidewalks, the existing Beverly Street (north of Causeway Street), and a portion of I-93 North. New shadow will also be cast onto a portion of Portal Park, and a very minor portion of Revere Plaza.

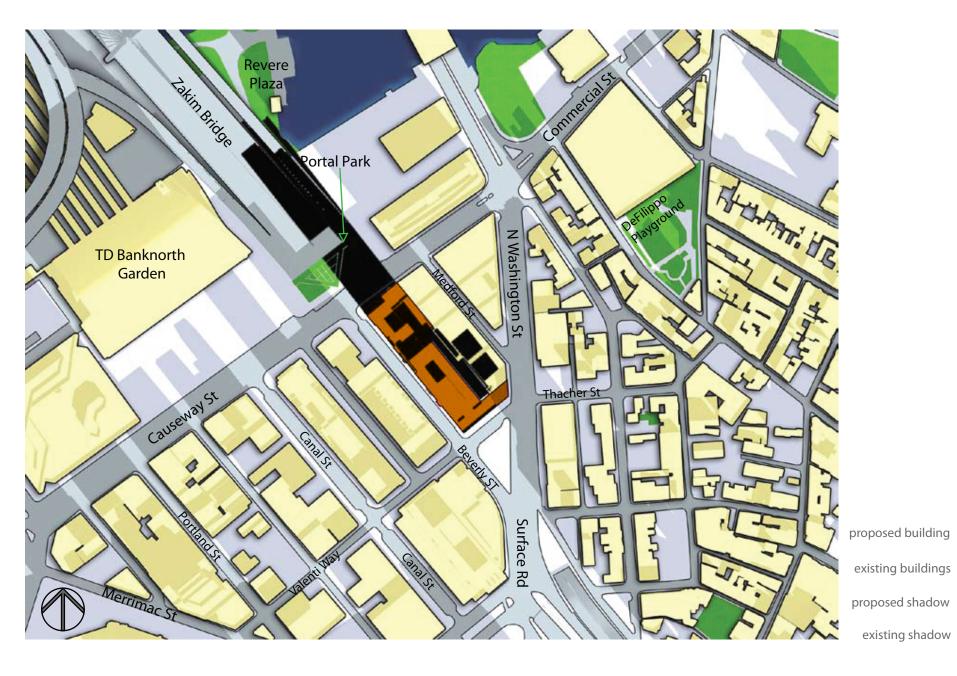
At 12:00 p.m., much of the area is under existing shadow, and new shadow will be cast onto a small portion of North Washington Street, and onto a very minor portion of Causeway Street and its sidewalks.

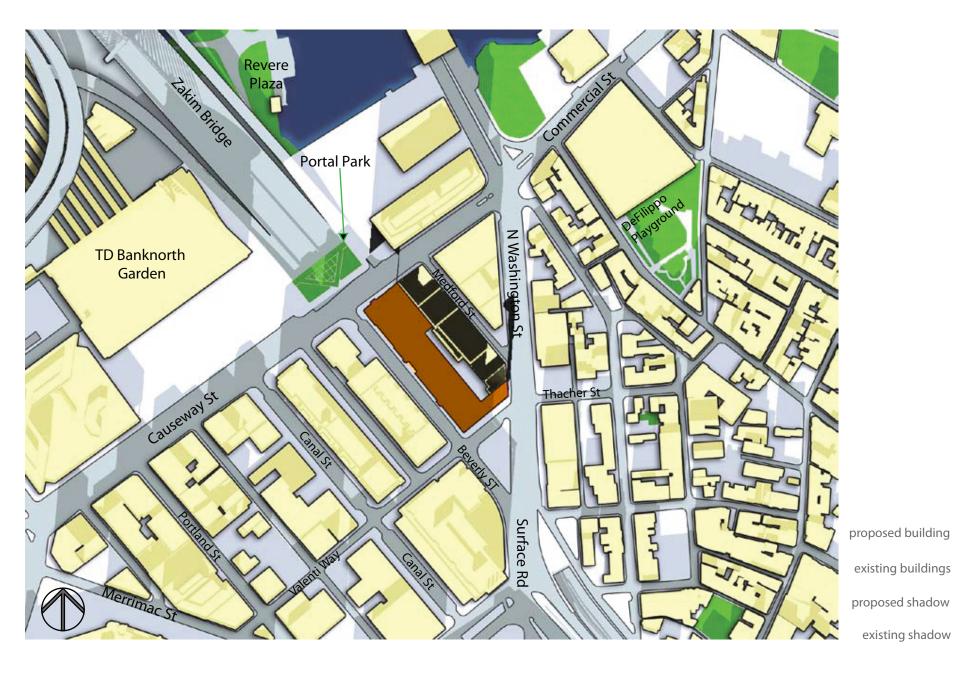
At 3:00 p.m., shadow fall northeasterly across portions of North Washington Street and its sidewalks, and Commercial Street and its southern sidewalk. New shadow will also be cast onto a minor portion of DeFilippo Playground.

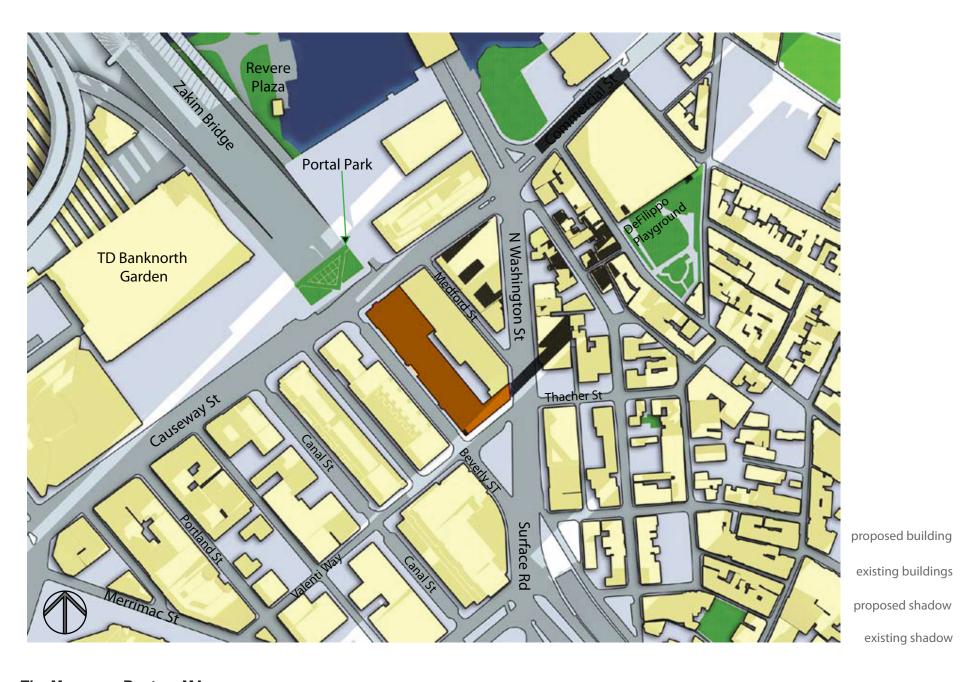
New shadow created on the winter solstice is illustrated in Figures 3.2-12 through 3.2-14.

#### 3.2.6 Conclusions

The Project will create limited new shadow in the area, although the existing and planned buildings adjacent to the site minimize the amount of new shadow created by the Project. New shadow will generally be cast onto the adjacent streets and their sidewalks. During nine of the 14 time periods studied, the Project will not cast new shadow onto Portal Park. During 13 of the 14 time periods studied, the Project will not cast any new shadow onto DeFilippo Park. New shadow at DeFilippo Park is limited to the 3:00 p.m. time period studied during the winter solstice. During 13 of the 14 time periods studied, the Project will not cast any new shadow onto DeFilippo Park. New shadow at Revere Plaza is limited to the 9:00 a.m. time period during the winter solstice. The Project is not expected to result in substantial adverse impact to other open spaces in the area.







## 3.3 Daylight Analysis

## 3.3.1 Introduction and Summary of Analysis

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of the project site. As is typically required by the BRA, the daylight analysis for the Project considers both existing and proposed daylight conditions as well as those of the surrounding area. Since the Project site abuts existing buildings, these buildings are included in both the existing and proposed conditions.

The Project site is primarily vacant (however, it currently includes one small building) and the site abuts existing buildings. Although the development of the Project will result in increased daylight obstruction at the site over existing conditions, the resulting conditions are typical of a densely developed area and are similar to daylight obstruction values associated with other existing and proposed buildings in the vicinity of the Project site.

# 3.3.2 Methodology

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

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

As mentioned, the BRA typically requests that the analysis treats the following elements as controls for data comparison:

- Existing Conditions;
- Proposed Conditions; and
- ♦ The Context of the Area.

Viewpoints were chosen along Beverly Street (Viewpoints 1, 2 and 3), Valenti Way (Viewpoint 4), Medford Street (Viewpoint 5), and Causeway Street (Viewpoint 6). The daylight analysis examined daylight obstruction from the four locations for the existing and proposed conditions. Additionally, this study considered area context points to provide a basis of comparison to existing conditions in the surrounding area. These viewpoints were taken along Valenti Way (AC1 and AC6), looking northwest; Causeway Street (AC2, AC7), looking southeast; Friend Street (AC3), looking northeast; and Haverhill Street (AC4), looking southwest; Canal Street (AC5), looking northeast. The viewpoints are illustrated on Figure 3.3-1.

## 3.3.3 Daylight Analysis Results

The results for each viewpoint under each alternative condition are described in Table 3.3-1. Figures 3.3-2 through 3.3-6 illustrate the BRADA results for each analysis and are located at the end of this section.

Table 3.3-1 Viewpoint Locations

Viewpoint Locations		Existing Conditions	Proposed Conditions
Viewpoint 1	Beverly Street at Hotel Portion		80.6%
Viewpoint 2	Beverly Street at Office Portion		81.9%
Viewpoint 3	Beverly Street	16.2%	
Viewpoint 4	Valenti Way	12.9%	82.2%
Viewpoint 5	Medford Street	80.1%	80.2%
Viewpoint 6	Causeway Street	21.5%	71.1%
Area Context Points*			
AC1	Valenti Way (looking west at Canal Place**)	75.2%	
AC2	Causeway Street (Looking east at Canal Place)	66.9%	
AC3	Friend Street (looking at 233 Friend St.)	71.9%	
AC4	Haverhill Street (looking southwest at Canal Place)	73.2%	
AC6	Valenti Way (looking at 14 Valenti Way)	41.3%	
AC7	Causeway Street (looking south at 27 Medford St.)	76.5%	

<sup>\*</sup>AC1 through AC6 are based on a daylight analysis prepared by Epsilon Associates for the Canal Place Expanded PNF, November, 2005; AC7 is based on a daylight analysis prepared by Epsilon Associates for the Lovejoy Wharf DPIR, July 2005.

#### Beverly Street - Viewpoints 1, 2 and 3

Beverly Street runs along the southwestern edge of the Project site. Viewpoints 1 and 2 were taken from the center of the street. Viewpoint 3 was taken from the center of the proposed Beverly Street (currently not open to the public). Viewpoint 1 looks northeast at the hotel portion of the Project. Viewpoint 2 looks northeast at the office portion of the

<sup>\*\*</sup>Canal Place is now known as Avenir.





Viewpoint Location and Direction

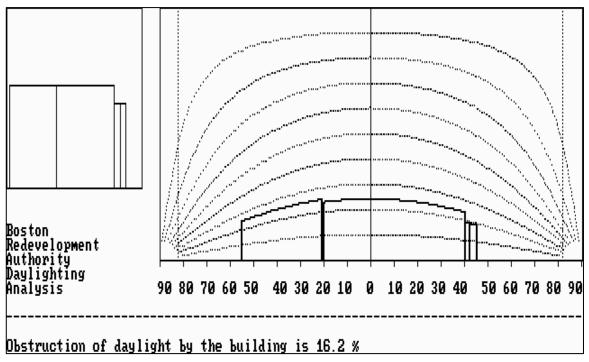
Basemap: 2005 Orthophotography, MassGIS

Scale 1:2100 1 inch = 175 feet

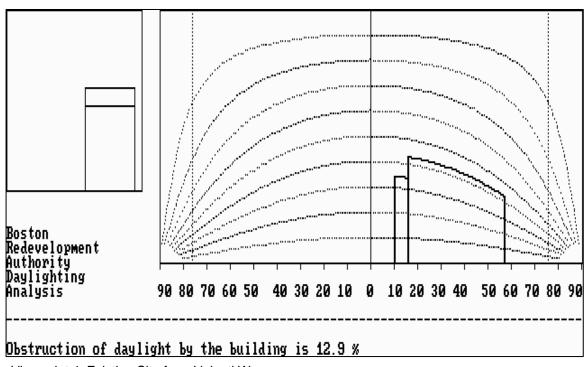
Area Context Location and Direction

100

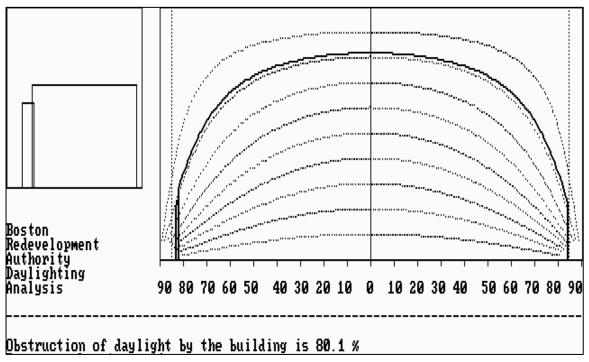
200



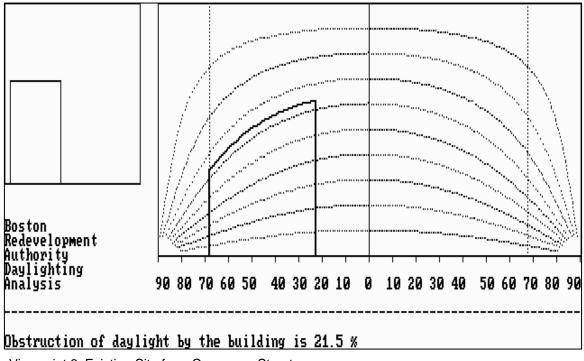
Viewpoint 3: Existing Site from Beverly Street



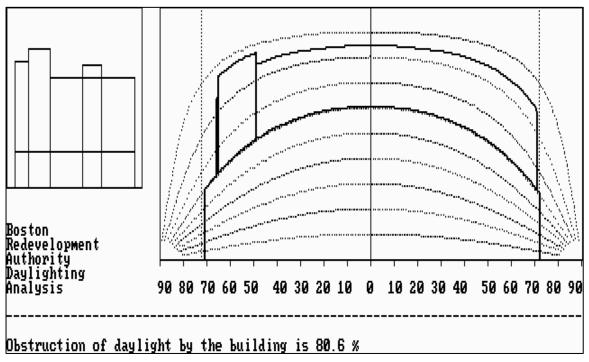
Viewpoint 4: Existing Site from Valenti Way



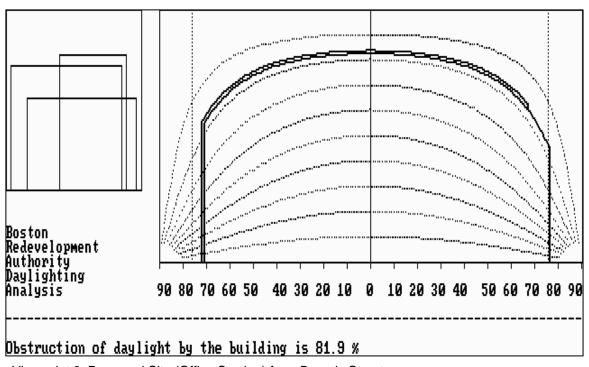
Viewpoint 5: Existing Site from Medford Street



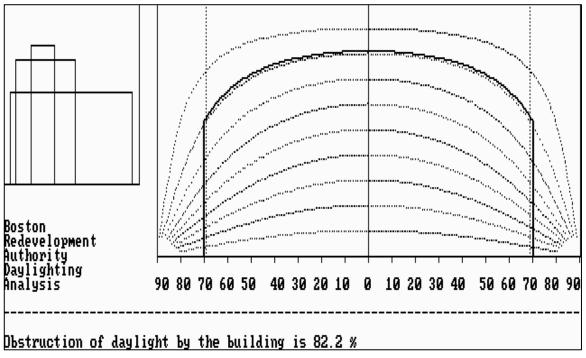
Viewpoint 6: Existing Site from Causeway Street



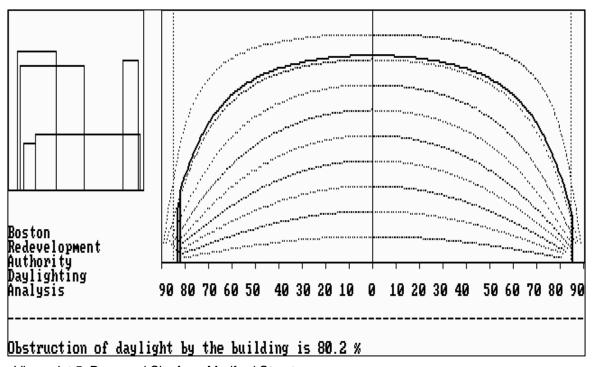
Viewpoint 1: Proposed Site (Hotel Section) from Beverly Street



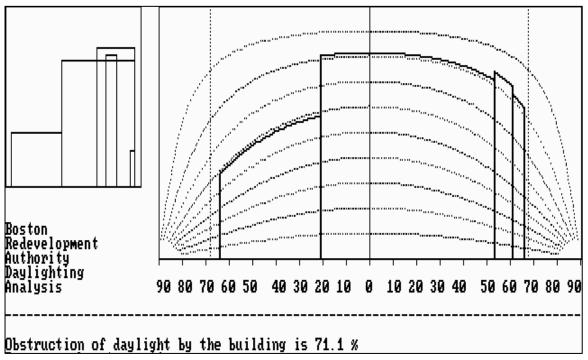
Viewpoint 2: Proposed Site (Office Section) from Beverly Street



Viewpoint 4: Proposed Site from Valenti Way



Viewpoint 5: Proposed Site from Medford Street



Viewpoint 6: Proposed Site from Causeway Street

Project. Viewpoint 3 looks northeast at the whole Project site. Due to the vacant space between the Beverly Street and the existing buildings, the existing daylight obstruction value is only 16.2%.

With the development of the vacant site between the existing buildings and Beverly Street, the daylight obstruction value will increase to 80.6% (at Viewpoint 1) and 81.9% (at Viewpoint 2), slightly more than the daylight obstruction values found in the surrounding area and typical of dense urban areas.

# Valenti Way – Viewpoint 4

Valenti Way runs along the southeastern edge of the Project site. Viewpoint 4 was taken from the center of Valenti Way looking northwest at the site. The existing daylight obstruction value at the site is 12.9%. The development of the Project will increase daylight obstruction values at the site to 82.2%, which is only slightly more than the daylight obstruction values found in the surrounding area and is typical of dense urban areas.

# Medford Street - Viewpoint 5

Medford Street runs along the northeastern edge of the Project site. Viewpoint 5 was taken from the center of the street looking southwest at the Project site.

Due to the height of the existing buildings along Medford Street, the proposed Project will not be visible from the center of the street. Therefore, the existing and proposed daylight obstruction values are almost the same at 80.1 % and 80.2%, respectively.

#### Causeway Street – Viewpoint 6

Causeway Street runs along the northwestern edge of the Project site. Viewpoint 6 was taken from the center of the street looking southeast at the Project site. The existing building at the corner of Causeway Street and Medford Street, and the vacant Project site adjacent to it, allow for a relatively low daylight obstruction value of 21.5%. The development of the Project will increase the daylight obstruction value to 71.1%. While this is an increase over existing conditions, the daylight obstruction value is within the daylight obstruction range of other buildings in the Project vicinity.

#### Area Context Views

The Project site is located between two areas with contrasting building heights. To the north, west and south of the Project site, the area is characterized by taller high-rise existing and proposed buildings such as the Thomas P. O'Neill Federal Building, the TD Banknorth Garden, Simpson Parcel 1, Avenir, and The Bulfinch Triangle Project. To the east of the Project site are the lower rise buildings along Boston's Inner Harbor and residential

buildings in the North End. The Project's daylight obstruction values fit within the context of these areas.

To provide a larger context for a specific comparison of daylight conditions, obstruction values were calculated from seven viewpoints. The daylight conditions ranged from 41.3% on Valenti Way between Canal and Friend Streets (AC6) to 76.5% at 27 Medford Street (AC7) adjacent to the project site. In addition, the daylight obstruction values for other proposed projects in the vicinity range from 38.2% to 82.9% for The Bulfinch Triangle Project and from 61.3% to 84.9% for Simpson Parcel 1. In comparison, daylight obstruction values for the project range from 71.1% to 82.2%.

#### 3.3.4 Conclusions

The daylight analysis conducted for the Project describes existing and proposed daylight obstruction conditions at the Project site and in the surrounding area. The Project design sets some taller portions of the building back from the streets, thus reducing the impact on pedestrian's views of the sky. The results of the BRADA analysis indicate that while the development of the Project will result in increased daylight obstruction at the site over existing conditions, the resulting conditions generally will be consistent with the area context and are typical of daylight obstruction values downtown.

#### 3.4 Solar Glare

It is not anticipated that the Project will include the use of reflective glass or other reflective materials on the building facades that would result in adverse impacts from reflected solar glare from the Project.

# 3.5 Air Quality Analysis

#### 3.5.1 Introduction

An air quality analysis was conducted to determine the impact of carbon monoxide (CO) emissions from combustion and mobile source emissions generated by the Project. A microscale analysis is typically performed to evaluate the potential air quality impacts due to traffic flow around the Project area. In addition, for stationary sources (i.e. combustion stacks, loading/unloading area, and garage vents), United States Environmental Protection Agency (EPA) approved air dispersion models were used to estimate ambient concentrations of nitrous oxide (NOx), particulate matter (PM), and sulfur dioxide (SO2).

The impacts were added to monitored background values and compared to the Federal National Ambient Air Quality Standards (NAAQS). The standards were developed by EPA to protect the human health against adverse health effects with a margin of safety.

A mesoscale analysis was also performed for the Project based on the number of vehicle trips per day (vtd) generated, which will exceed the 3,000 vtd threshold for a mesoscale

analysis. The analysis includes both an estimate of the volatile organic carbon (VOC) emissions associated with all project-related vehicle trips and a comparison of the No-build to Build conditions. In the case where hydrocarbon emissions from the build condition are expected to be greater than the future no-build, the analysis includes identification and review of reasonable and feasible reduction and mitigation measures.

The modeling methodology was developed in accordance with the latest Massachusetts Department of Environmental Protection guidelines. The air quality analysis results show that CO, NOx, PM, and SO2 concentrations at all sensitive receptors studied are well under NAAQS thresholds.

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

#### 3.5.2 Methodology

#### 3.5.2.1 Microscale Analysis

The microscale analysis typically examines ground-level CO impacts due to traffic queues and parking garage exhaust systems in the immediate vicinity of a project. CO is used in microscale studies to indicate roadway pollutant levels since it is the most abundant pollutant emitted by motor vehicles and can result in so-called "hot spot" (high concentration) locations around congested intersections. NAAQS have been established by the EPA for CO to protect the public health (known as primary standards). These standards do not allow ambient CO concentrations to exceed 35 parts per million (ppm) for a one-hour averaging period and nine ppm for an eight-hour averaging period, more than once per year at any location. The widespread use of CO catalysts on late-model vehicles has reduced the occurrences of CO hotspots. Air quality modeling techniques (computer simulation programs) are typically used to predict CO levels for both existing and future conditions to evaluate compliance of the roadways with the standards.

The microscale analysis has been conducted using the latest versions of EPA MOBILE6.2, CAL3QHC, and SCREEN3 to estimate CO concentrations at sidewalk and other sensitive locations.

Future build and no-build emissions data calculated from the MOBILE6.2 model, along with traffic data, were input into the CAL3QHC program to determine CO concentrations due to traffic flowing through the intersections. SCREEN3 was used to estimate potential ground-level impacts due to emissions from the parking garage, heating boilers, and the loading docks.

CAL3QHC and SCREEN3 results were then added to background CO values of 3 ppm (one-hour) and 1.8 ppm (eight-hour), as provided by the DEP, to determine total air quality impacts due to the project. This value was compared to the NAAQS for CO of 35 ppm (one-hour) and 9 ppm (eight-hour).

#### Intersection Selection

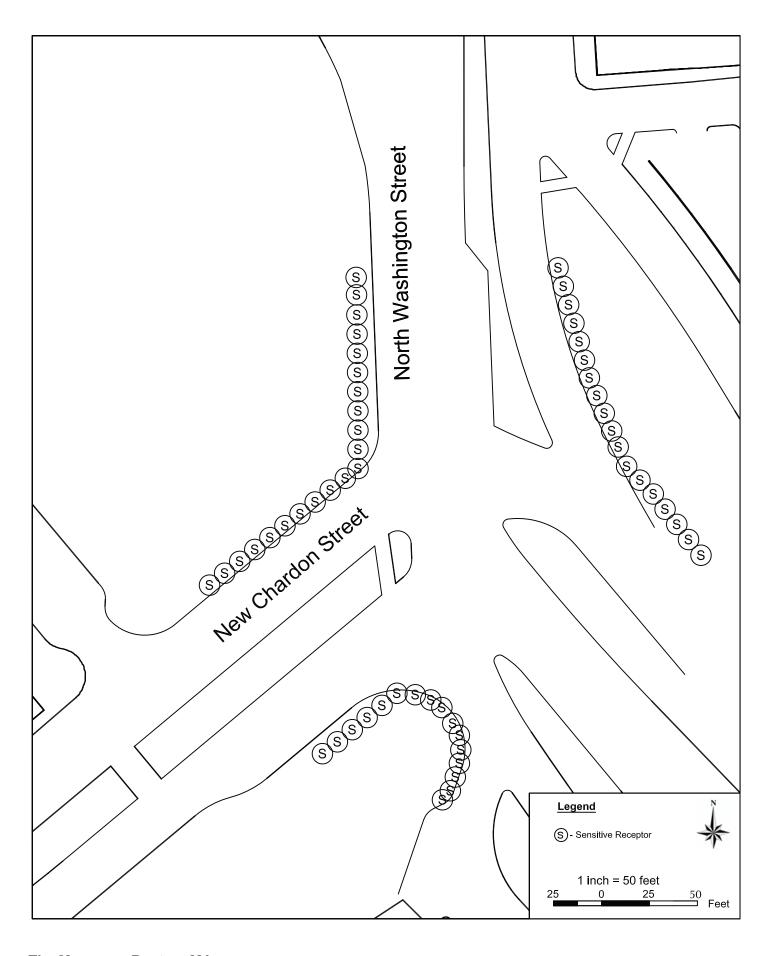
Intersection selection criteria for a microscale analysis is typically based on a Level of Service (LOS) D where the project increases traffic volumes by ten percent or greater, or if the intersection operates at LOS E or F and the project degrades conditions at the location. An analysis of the intersections from the traffic study conducted by Howard/Stein-Hudson, Associates for the Build Condition was conducted (See Chapter 2.0, Transportation). There were three intersections that met the microscale analysis criteria:

- 1. North Washington Street/Causeway Street;
- 2. North CausewayStreet/Valenti Way/Thacher Street; and
- 3. New Chardon Street/Surface Road/I-93 Southbound and Callahan Tunnel Onramp/Sumner Tunnel Off-ramp.

The traffic volumes and LOS calculations provided in Chapter 2.0 and Appendix C form the basis of evaluating the traffic data versus the microscale thresholds.

## Sensitive Receptors Evaluated

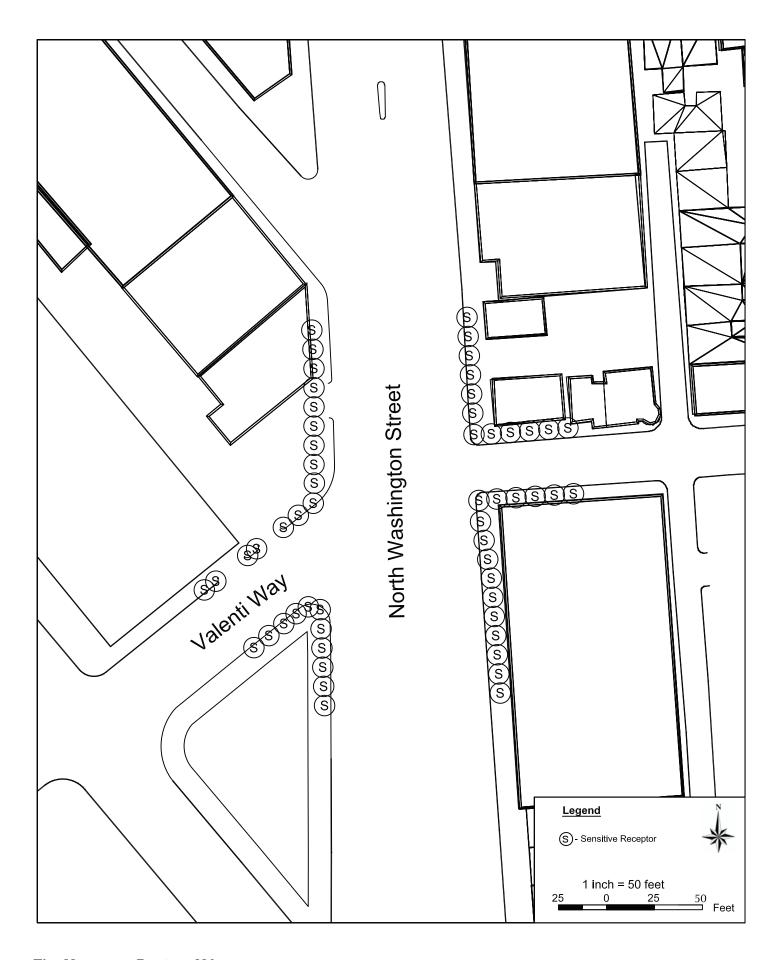
Receptors were placed in the vicinity of the project area and at each intersection. The receptor locations are presented in Figures 3.5-1 through 3.5-3.



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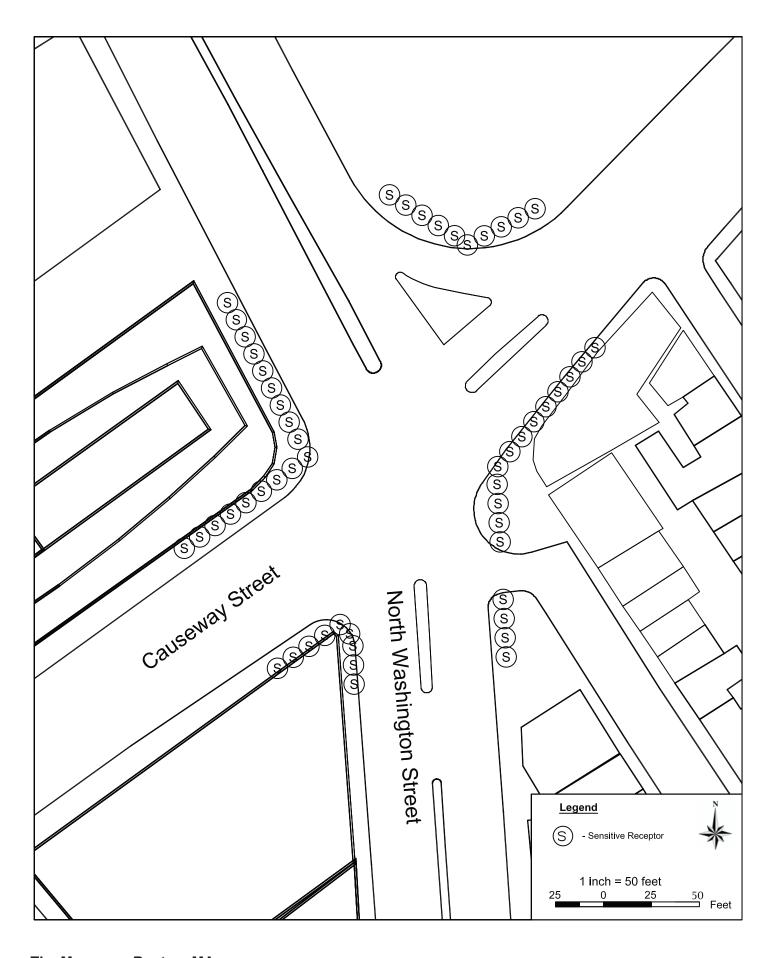




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### Emissions Calculations (MOBILE6.2)

The MOBILE6.2 inputs are based on the latest guidance issued by MassDEP<sup>1</sup> regarding updated inputs to the model.

To estimate emissions from trucks in the loading dock area, idle emissions were calculated.

The current version of MOBILE6.2 does not explicitly calculate idle emissions. However, idle emissions can be obtained from a vehicle speed of 2.5 miles per hour (mph) (the lowest speed MOBILE6 will model). The resulting emission rate given in (grams/mile) is then multiplied by 2.5 mph to estimate idle emissions (given in grams/hour). Moving emissions are calculated based on actual speeds at which free-flowing vehicles travel through the intersections.

### Impact Calculations (CAL3QHC)

The CAL3QHC model predicts one-hour concentrations using queue-links at intersections based on worst-case meteorological conditions and traffic input data. The one-hour concentrations were scaled by a factor of 0.7 to estimate eight-hour concentrations. The CAL3QHC methodology was based on EPA CO modeling guidance. Signal timings were provided directly from the traffic modeling runs. Travel speeds were estimated based on field observations, traffic data, and queue links at the intersections. The CAL3QHC parameters are listed in Appendix C.

### SCREEN3 Modeling

The EPA SCREEN3 model was used to estimate ground-level impacts due to emissions from the combustion sources. This model allows for the consideration of urban dispersion environments, building downwash, and cavity regions.

#### Parking Garage Exhaust Vents

There is an above-grade parking garage planned for the Project. The garage will consist of one level (level 2) and have a capacity of up to 226 spaces (double stacked). There are two supply and two exhaust vents on the roof. Carbon monoxide monitors will be installed within the garage to measure the levels of CO. For the air quality analysis, it was assumed that the exhaust fans will discharge emissions from the parking garage 10 feet above the building. This corresponds to 169 feet above ground level (agl) for the office and 157 feet agl for the retail at the closest sensitive receptor. For modeling purposes, emissions are conservatively assumed to vent from one louver at the lowest exhaust height (147 agl). Emissions from the parking garage were calculated using MOBILE6.2 and an estimate of the

MassDEP: February 12, 2003 memorandum for MOBILE6 inputs for performing indirect source air quality analysis and latest inputs supplied by BRA.

total miles traveled within the garages during the a.m. and p.m. peak hours. The total miles traveled are calculated by multiplying the average distance a car would travel in the garage by the number of cars entering and leaving the garage. It was estimated that each vehicle, on average, is driven halfway into the garage and halfway out to park and leave.

The footprint of the garage is approximately 425 feet by 120 feet. Assuming the cars entering and exiting the garage travel approximately 545 feet, a total trip of 23.3 miles is traveled on the garage (545 feet x 226 cars / 5,280 feet per mile) during the peak a.m. or p.m. hour.

To provide a conservative assumption for emissions from the garage, an emission rate from MOBILE6.2 of 2.5 miles per hour was assumed for the 2013 conditions.

Therefore, the emission rate from the garage can be calculated as follows:

### 2013 Conditions

19.42 grams/mile x 23.3 miles/hour x 1 hour/3600 seconds x 2.5 = 0.31 grams/second

The SCREEN3 model was run to determine ground level impacts. The following input parameters were used:

- ♦ The vent was placed 157 feet (47.8 meters) above ground level;
- ◆ Building dimensions of the mechanical roof height (using worst case conservative building dimensions) were used for downwash and cavity calculations (H = 159', Width = 150', L = 425'); and
- ♦ Urban dispersion coefficients were used.

### Heating Equipment

A total estimated boiler heat input of 24 million British Thermal Units (BTU per hour) is proposed for providing heat and hot water to the Hotel and Office building. The boilers will be natural gas-fired and located in a mechanical penthouse area on the roof of each building. The boilers will not be subject to the MassDEP's Environmental Results Program (ERP) since individual estimated heat inputs are less than the 10 MMBtu/hr ERP threshold. For this analysis, however, emissions were estimated for each boiler based on the MassDEP Boiler ERP program emission limits. Dispersion modeled impacts from the heating units were conservatively estimated from one exhaust stack 10 feet (157 feet above ground level) above the building mechanical roof height of 147 feet above ground level. Detailed calculations are presented in Appendix C.

### Emergency Generator

The building will contain two 550-kW standby generators designed to provide temporary power to the building in the case of a power interruption. The generators will exhaust at least ten feet above the mechanical penthouse roof height (157 feet above ground level). Typically, the generator will operate for approximately one hour each month for testing and general maintenance. On March 23, 2006, the MassDEP new regulations for emergency generators became effective. The emergency generator ERP regulation applies to new generators greater than 37 kW. The regulation is similar to the boiler ERP in that new engines are subject to emission standards, recordkeeping, certification, and compliance with the MassDEP noise policy. Since the generator's maximum rating capacity is greater than the ERP limit of 37 kW, both units will be subject to the new ERP program. Per the ERP, the generator owner will limit operation of the generator to less than 300 hours per year and submit a certification form to MassDEP within 60 days of commencement.

Emissions were estimated for the emergency generator based on vendor supplied data and the new ERP limits for a 550-kW generator. Detailed calculations are presented in Appendix C.

### Loading/Unloading Dock Vents

Loading and service are provided by two loading dock areas. The northern loading dock will serve the hotels and restaurants, while the southern loading area will serve the retail and office tenants. Access and egress are provided from the South Site Driveway from Valenti Way. Preliminary estimates are for a total of up to 26 trips per day (tpd) from the northern loading area and 21 tpd from the southern loading area.

Emissions of particulate matter (PM) for an idling truck were estimated from the EPA MOBILE6.2 emission factor program. Concentrations were estimated for the Valenti Way area from the CAL3QHC model. Idling at both the loading/unloading areas were assumed for five minutes.

Receptors were placed around the loading/unloading area of the Project site to determine maximum 24-hour and annual concentrations.

The CAL3QHC modeling results are presented in Table 3.5-2 for the loading/unloading areas along with the mechanical equipment and compared to the NAAQS.

### Methodology

The maximum concentrations from SCREEN3 for the loading dock vents and the heating/emergency generator stacks were added together. This is conservative in that maximum impacts are added together regardless of space or time. Therefore, if maximum combined impacts from both sources are below the NAAQS at one receptor, then this is indicative of any receptor placed around the Project.

### 3.5.3 Background CO Concentrations

An air quality analysis also requires an estimate of "background" air quality levels, representing the contribution of all sources in the project area except the specific intersections. Background levels of future CO concentrations of 3 ppm (one-hour) and 1.8 ppm (eight-hour) were provided by DEP.

For the peak eight-hour period, SCREEN3 concentrations were calculated using an eight-hour to one-hour ratio (or persistence factor) of 0.70 as recommended by EPA. This persistence factor accounts for the variability in meteorology over an eight-hour period relative to one-hour conditions.

### 3.5.4 Air Quality Results

### 3.5.4.1 Mobile Source Analysis

The results of the one-hour build CO concentrations from CAL3QHC and SCREEN3 for the highest predicted receptor are provided in Table 3.5-1.

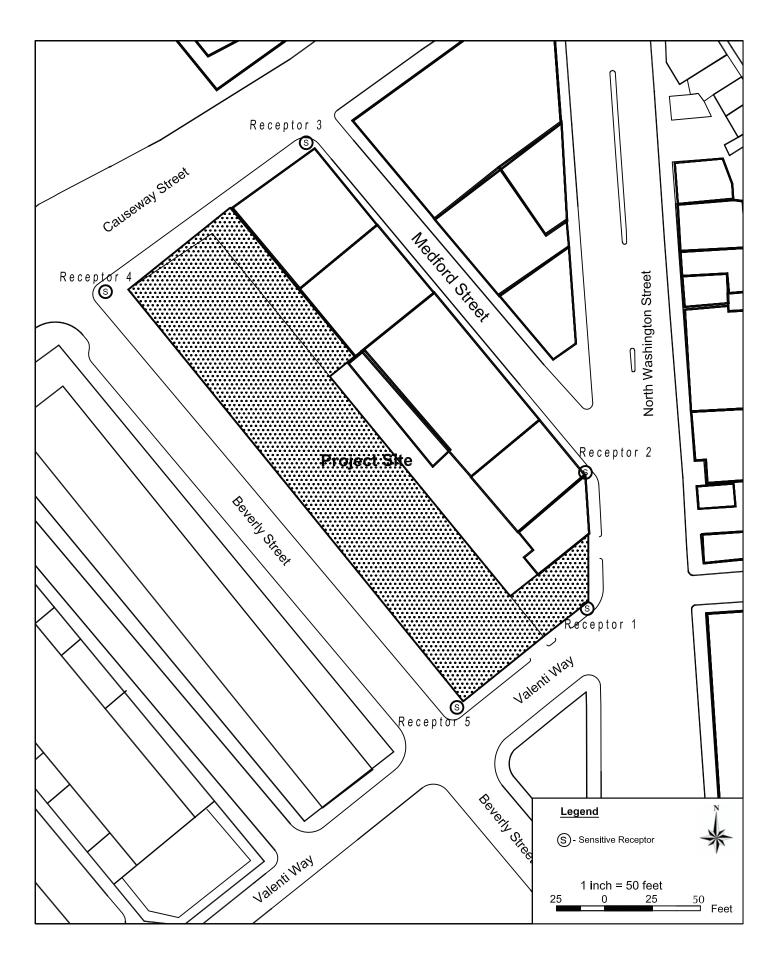
The results of the one-hour modeled CO ground-level concentrations from both models were added to DEP supplied background levels for comparison to the NAAQS. The one-hour values were then scaled by 0.7 to generate eight-hour values. These values represent the highest potential concentrations as they are predicted during the simultaneous occurrence of "defined" worst case meteorology.

The highest one-hour concentration predicted in the area of the project for the future build conditions plus background is 5.1 ppm at two of the sensitive receptors located at the Project site (i.e Receptor 1 and Receptor 2 from Figure 3.5-4). The total one-hour concentration includes the maximum predicted concentrations from SCREEN3 for the parking exhaust vent, the heating boilers, and the emergency generator. This value is well below the one-hour NAAQS standard of 35 ppm.

The highest eight-hour concentration predicted in the area of the project for the future build conditions plus background is 3.2 ppm at the same locations as the one-hour. The total eight-hour concentrations include maximum predicted concentrations from SCREEN3 modeled sources. This value is well below the eight-hour NAAQS standard of nine ppm.

### 3.5.4.2 NAAQS Analysis

In addition to the microscale analysis, a cumulative impact analysis was also conducted for comparison to the NAAQS for SO2, NOx, and PM. This analysis addresses emissions from the Project's heating boilers, emergency generator, and the loading/unloading area (PM only). Similar to the microscale analysis, the one-hour predicted concentrations from SCREEN3 were scaled by EPA approved adjustment factors of 0.9, 0.4, and 0.08 to obtain three-hour, 24-hour, and annual concentrations.



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Worst case maximum predicted impacts from these sources were added to monitored background values obtained from the MassDEP website for 2005 and compared to the NAAQS.

Table 3.5-2 presents the cumulative modeling results for the three sources. The total impacts when combined with the monitored background values are well below the NAAQS for all pollutants and averaging periods.

Table 3.5-1 Summary of Microscale Modeling Analysis

Intersection	Peak
Valenti Way at North	AM
Washington Street	PM
New Chardon Street at	AM
North Washington Street	PM
Causeway Street at	AM
North Washington Street	PM
	AM
Sensitive Receptor 1	PM
	AM
Sensitive Receptor 2	PM
	AM
Sensitive Receptor 3	PM
	AM
Sensitive Receptor 4	PM
	AM
Sensitive Receptor 5	PM
MAX	

1-hour Modeled CO Impacts (ppm)	Project Garage CO Modeled Impacts (ppm)	Project Mechanical Equipment Modeled Impacts (ppm)	Total Build CO Impacts (ppm)
0.9	0.10	0.35	1.4
0.8	0.10	0.35	1.3
1.5	0.10	0.35	2.0
1.6	0.10	0.35	2.1
1.4	0.10	0.35	1.9
1.5	0.10	0.35	2.0
1.5	0.10	0.35	2.0
1.6	0.10	0.35	2.1
1.5	0.10	0.35	2.0
1.6	0.10	0.35	2.1
0.3	0.10	0.35	0.8
0.3	0.10	0.35	0.8
0.1	0.10	0.35	0.6
0.2	0.10	0.35	0.7
0.3	0.10	0.35	0.8
0.4	0.10	0.35	0.9
1.6	0.10	0.35	2.1

		1-hr Back	3
3-hour Scaled CO Impacts (ppm)		1-hour Total CO Impacts (ppm) <sup>1</sup>	1-hour NAAQS (ppm)
0.9		4.4	35
0.9		4.3	35
1.4		5.0	35
1.4		5.1	35
1.3		4.9	35
1.4		5.0	35
1.4		5.0	35
1.4		5.1	35
1.4		5.0	35
1.4		5.1	35
0.5		3.8	35
0.5		3.8	35
0.4	L	3.6	35
0.5		3.7	35
0.5		3.8	35
0.6	L	3.9	35
1.4		5.1	35

• ··· - a	
8-hour Total CO Impact (ppm) <sup>1</sup>	8-hour NAAQS (ppm)
2.7	9
2.7	9
3.2	9
3.2	9
3.1	9
3.2	9
3.2	9
3.2	9
3.2	9
3.2	9
2.3	9
2.3	9
2.2	9
2.3	9
2.3	9
2.4	9
3.2	9

8-hr Back

1.8

#### Notes:

<sup>1)</sup> Total concentrations include background value.

<sup>2)</sup> Sensitive Receptor 1 denotes the receptor located at the intersection of Valenti Way and North Washington Street.

<sup>3)</sup> Sensitive Receptor 2 denotes the receptor located at the intersection of Medford Street and North Washington Street.

<sup>4)</sup> Sensitive Receptor 3 denotes the receptor located at the intersection of Medford Street and Causeway Street.

<sup>5)</sup> Sensitive Receptor 4 denotes the receptor located at the intersection of Beverly Street and Causeway Street.

<sup>6)</sup> Sensitive Receptor 5 denotes the receptor located at the intersection of Beverly Street and Valenti Way.

Table 3.5-2 Summary of NAAQS Modeling Analysis

Pollutant	Period	Generator Concentration (ug/m³)	Loading Dock Concentration (ug/m³)	Monitored Background (ug/m³)	Total Concentration (ug/m³)	NAAQS (ug/m³)
NOx	Annual	2.23		47	49	100
SO2	3-Hour	5.52		84	90	1300
	24-Hour	2.45		52	54	365
	Annual	0.026		11	11	80
PM	24-Hour	9.8	0.05	58	68	150
	Annual	0.33	0.01	29	29	50
CO	1-Hour	412.6		2552	2965	40000
	8-Hour	288.8		1740	2029	10000

Notes:

#### 3.5.5 Conclusion

Using conservative estimates, the CO concentrations at the nearest sensitive receptors for impacts from the three intersections, and the heating and emergency generator units, plus monitored background values, are well under the CO NAAQS thresholds. In addition, maximum cumulative impacts from the heating and emergency units plus monitored background values are also well below the NAAQS thresholds for SO2, NOx, and PM.

### 3.5.6 Mesoscale Analysis

A mesoscale analysis was performed for the Project based on the number of vehicle trips per day (vtd) generated, which will exceed the 3,000 vtd threshold for a mesoscale analysis. The analysis includes both an estimate of the VOC emissions associated with all project-related vehicle trips and a comparison of VOC emissions associated with the build condition compared to the no-build condition. In the case where hydrocarbon emissions from the build condition are expected to be greater than the future no-build, the analysis includes identification and review of reasonable and feasible reduction and mitigation measures.

The analysis was conducted consistent with the MassDEP mesoscale guidance and other similar projects.

<sup>1)</sup> Emergency Generators assumed to operate for 300 hours per year.

<sup>2)</sup> Heating boilers assume to operate for 8760 hours per year.

A mesoscale analysis was performed to assess the total VOCs/NOx associated with motor vehicle emissions related to the Project. Transportation demand management (TDM) and other mitigation strategies to reduce air quality impacts are described in Chapter 2.0 of this PNF.

### 3.5.6.1 Mesoscale Analysis

A mesoscale analysis predicts the change in regional emissions due to the Project. The total vehicle pollutant burden was estimated for the no-build and build conditions for the future year 2013 based on the traffic analysis. The conditions are described in more detail in Chapter 2.0 of this PNF.

For each condition modeled, the EPA MOBILE6.2 computer program was used to estimate motor vehicle emissions of VOC/NOx on the roadway network. Emission estimates derived from MOBILE6.2 for VOCs/NOx are based on the worst case of either wintertime or summertime conditions.

#### 3.5.6.2 Intersection Selection

Intersection selection criteria for a mesoscale analysis is typically based on the area where the Project will affect the surrounding intersections and traffic patterns. For this analysis, five intersections were included in the analysis based on the traffic study. The intersections and traffic volumes calculations provided in Chapter 2.0 and Appendix C form the basis of the mesoscale study.

### 3.5.6.3 Emissions Calculations (MOBILE6.2)

For each case modeled, the EPA MOBILE6.2<sup>2</sup> computer program was used to estimate motor vehicle emissions on the roadway network. Emissions data calculated by the MOBILE6.2 model are based on motor vehicle operations typical of peak periods. The Commonwealth's statewide annual Inspection and Maintenance (I&M) Program was included, as well as state specific vehicle age registration distribution. The MOBILE6.2 inputs are based on the latest guidance issued by MassDEP<sup>3</sup> regarding updated inputs to the model. MOBILE6.2 input parameters are provided in the air quality appendix, Appendix C. In addition, emission calculations are presented for the VOC build and no-build scenarios.

<sup>&</sup>lt;sup>2</sup> MOBILE6.2 is an EPA computer model that calculates emission factors for hydrocarbons, carbon monoxide, and oxides of nitrogen form gasoline and diesel fueled highway motor vehicles

<sup>&</sup>lt;sup>3</sup> MADEP: February 12, 2003 memorandum for MOBILE6 inputs for performing microscale and mesoscale analysis. Inputs are based on the latest MOBILE6 inputs from MassDEP dated 7/7/2004.

The mesoscale analysis predicts the change in regional emissions due to the Project. This is accomplished by multiplying changes in traffic flow (in vehicle miles traveled<sup>4</sup>) by an emission factor (grams per vehicle mile traveled). An average vehicle speed of 30 mph was used to estimate emissions for all links.

#### 3.5.6.4 Conclusion

Results of the mesoscale analysis are presented in Table 3.5-3 for the 2013 buildout condition. The results show an increase in daily VOC and NOx emissions for the 2013 build conditions versus the no-build condition.

The 2013 build condition results in an increase in morning and evening peak hourly VOC/NOx emissions of 1.2 percent and 1.5 percent, respectively.

## 3.5.6.5 Mitigation Measures and Conclusions

As is required when the mesoscale results show an increase in emissions from the no-build to build conditions, the Proponent has identified and reviewed reasonable and feasible reduction and mitigation measures to address the increase in emissions associated with the 2013 build scenario. Proposed traffic mitigation measures are described in detail in Chapter 2.0 of this PNF.

Table 3.5-3 2013 Buildout Mesoscale Analysis Summary

Pollutant	Time	Units	Full Build	No-Build	BD-NB	% Difference (BD-NB)
VOC	AM					
VOC	Peak	grams/hr	1,546.6	1,528.8	17.9	1.17%
		tons/hr	0.00170	0.00169	0.00002	1.17%
		tons/day*	0.017	0.017	0.000	1.17%
	PM Peak	grams/hr	1711.017	1686.180	24.8	1.47%
		tons/hr	0.00189	0.00186	0.00003	1.47%
		tons/day*	0.019	0.019	0.000	1.47%

BD = Full Build

NB = No-build

\* Tons/day estimated by assuming hourly peak is 10 percent of total volume.

<sup>&</sup>lt;sup>4</sup> Vehicle Miles Traveled (VMT) – the average daily traffic multiplied by the roadway link length.

Table 3.5-3 2013 Buildout Mesoscale Analysis Summary (continued)

Pollutant	Time	Units	Full Build	No-Build	BD-NB	% Difference (BD-NB)
	AM					
NOx	Peak	grams/hr	3,152.4	3,116.0	36.4	1.17%
		tons/hr	0.00347	0.00343	0.00004	1.17%
		tons/day*	0.035	0.034	0.000	1.17%
	PM					
	Peak	grams/hr	3,487.4	3,436.8	50.6	1.47%
		tons/hr	0.00384	0.00379	0.00006	1.47%
			_			
		tons/day*	0.038	0.038	0.001	1.47%

BD = Full Build

NB = No-build

### 3.6 Solid and Hazardous Waste

### 3.6.1 Hazardous Waste

A Phase I Environmental Site Assessment following the general guidance of the ASTM Phase I Standard Practice has been conducted for the Project. The study included a site reconnaissance, a visual inspection of the subject site and surrounding properties for the presence of oil or hazardous materials (OHM), a review of site history, a review of selected local, state, and federal regulatory records, and interviews with persons and agencies familiar with the site. Historically recognized environmental conditions were identified at the site. However, historical releases or sources of OHM that were present at the site are believed to have been removed as part of the construction of the Central Artery tunnel that underlies the site.

Recent test pit explorations performed over the tunnel structures that underlie the site indicate that the soil consists of fill that was placed above the tunnels as part of the Central Artery/Tunnel project. Based on the regulatory requirements governing the Central Artery/Tunnel project, it is likely that only "clean" fill materials were used.

Available boring logs indicate the presence of urban fill underlying the ground surface outside the tunnel footprints. Common "urban" contaminants are anticipated to be present in fill, including ash, cinders, and miscellaneous debris. Residual contamination from historical use of portions of the site as a shoe manufacturing company, a carriage manufacturer, a machine shop, woodworking shops, a gasoline service station, and over 200 years of urban use on the remainder of the site may be present in localized site soils. Off-site disposal of soils at the site that may be required will be performed in accordance with Massachusetts Department of Environmental Protection (MassDEP) policies, which will

<sup>\*</sup> Tons/day estimated by assuming hourly peak is 10 percent of total volume

be outlined in a site specific Soil Management Plan prepared for the Project and incorporated into the Contract Documents.

Presently, no regulatory response action or notification is required. Should construction activity or utility replacement encounter soil contamination resulting from historical site uses, notification to the MassDEP may be required.

### 3.6.2 Operation Solid and Hazardous Waste Generation

The Project will generate solid waste typical of other mixed-use projects. Solid waste generated by the Project will be approximately 674.9 tons per year, based on the amount of retail space proposed at a generation rate of 5.5 tons per 1,000 square feet per year, the amount of office space proposed at a generation rate of 1.3 tons per 1,000 square feet per year, and the number of hotel rooms proposed at a generation rate of four pounds per room per day as shown in Table 3.6-1.

Table 3.6-1 Solid Waste Generation

Proposed Use	Program	Generation Rate	Solid Waste
			(tons per year)
Office	213,000 sf	1.3 tons/1,000 sf/year	276.9
Retail/Restaurant	36,000 sf	5.5 tons/1,000 sf/year	198.0
Hotel	274 rooms	4 pounds/room/day	200.0
Total Solid Waste Genera	674.9		

Solid waste will include wastepaper, cardboard, glass, bottles, and food waste. A portion of the waste will be recycled as described below. The remainder of the waste will be compacted and removed by a waste hauler contracted by building management. With the exception of "household hazardous wastes" typical of office, hotel and retail uses (for example, cleaning fluids and paint), the Project uses will not generate hazardous waste.

Trash will be picked up from the internal loading docks (two for the hotels and restaurants and two for office space) four times per week. Restaurant trash will be stored at the northern loading dock for collection.

### 3.6.3 Recycling

The Proponent will coordinate with the City of Boston to implement a strategy that complements the City's Recycling Strategic Plan. Recycling by retail, office and hotel tenants will be encouraged and coordinated. To encourage recycling, the Proponent will implement a recycling program throughout the Project. The Project will include space for recycling in the building, and the loading and receiving areas will include space for the

storage and pick-up of recyclable materials. Recyclable materials are expected to include newspaper, cardboard, cans, and bottles.

# 3.7 Noise Impacts

### 3.7.1 Introduction

This section provides a noise analysis for the Project, including a noise-monitoring program to determine existing noise levels and an estimate of future noise levels when the Project is in operation.

The analysis indicates that predicted noise levels from Project mechanical equipment with appropriate noise mitigation will be below the most stringent City of Boston Noise Zoning requirements for nighttime and daytime residential zones, and well below existing measured baseline noise levels in the area.

### 3.7.2 Noise Terminology

There are several ways in which sound (noise) levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. The following information defines the noise measurement terminology used in this analysis.

The decibel scale is logarithmic, to accommodate the wide range of sound intensities found in the environment. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a three-decibel increase (to 53 dB), not a doubling to 100 dB. Thus, every three dB change in sound levels represents a doubling or halving of sound energy. Related to this is the fact that a change in sound levels of less than three dB is imperceptible to the human ear.

Another property of decibels is that if one source of noise is 10 dB or more, louder than another source, then the total sound level is simply the sound level of the higher source. For example, a source of sound at 60 dB plus another source of sound at 47 dB is 60 dB.

The sound level meter used to measure noise is a standardized instrument. It contains "weighting networks" to adjust the frequency response of the instrument to approximate that of the human ear under various circumstances. One network is the A-weighting network (there are also B- and C-weighting networks). The A-weighted scale (dBA) most closely approximates how the human ear responds to sound at various frequencies. Sounds are frequently reported as detected with the A-weighting network of the sound level meter. A-weighted sound levels emphasize the middle frequency (*i.e.*, middle pitched – around 1,000 Hertz sounds), and de-emphasize lower and higher frequency sounds. A-weighted sound levels are reported in decibels designated as "dBA."

Because the sounds in the environment vary with time they cannot simply be described with a single number. Two methods are used for describing variable sounds. These are exceedance levels and the equivalent level, both of which are derived from a large number of moment-to-moment A-weighted sound level measurements. Exceedance levels are values from the cumulative amplitude distribution of all of the sound levels observed during a measurement period. Exceedance levels are designated L<sub>n</sub>, where n can have a value of 0 to 100 percent. For example:

L<sub>90</sub> is the sound level in dBA exceeded 90 percent of the time during the measurement period. The L<sub>90</sub> is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when there are no obvious nearby intermittent noise sources.

L<sub>50</sub> is the median sound level: the sound level in dBA exceeded 50 percent of the time during the measurement period.

 $L_{10}$  is the sound level in dBA exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The  $L_{10}$  is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles.

The equivalent level is the level of a hypothetical steady sound that would have the same energy (*i.e.*, the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level is designated L<sub>eq</sub> and is also A-weighted. The equivalent level represents the time average of the fluctuating sound pressure, but because sound is represented on a logarithmic scale and the averaging is done with linear mean square sound pressure values, the L<sub>eq</sub> is mostly determined by occasional loud, intrusive noises.

By using various noise metrics it is possible to separate prevailing, steady sounds (the L<sub>90</sub>) from occasional, louder sounds (L<sub>10</sub>) in the noise environment or combined average levels (L<sub>eq</sub>). This analysis of sounds expected from the Project treats all noises as though they will be steady and continuous and hence the L<sub>90</sub> exceedance level was used. In the design of noise control treatments it is essential to know something about the frequency spectrum of the noise of interest. Noise control treatments do not function like the human ear, so simple A-weighted levels are not useful for noise-control design. The spectra of noises are usually stated in terms of octave band sound pressure levels, in dB, with the octave frequency bands being those established by standard. To facilitate the noise-control design process, the estimates of noise levels in this analysis are also presented in terms of octave band sound pressure levels.

Baseline noise levels were measured in the vicinity of the proposed Project. Those baseline levels were then compared against the predicted noise levels from mechanical equipment operation. Sound levels for the equipment were based on information provided by the

manufacturers. The predicted noise levels were compared to the City of Boston Zoning District Noise Standards.

### 3.7.3 Noise Regulations and Criteria

The primary set of regulations relating to the potential increase in noise levels is the City of Boston Zoning District Noise Standards (City of Boston Code – Ordinances: Section 16–26 Unreasonable Noise and City of Boston Air Pollution Control Commission Regulations for the Control of Noise in the City of Boston). Results of the baseline ambient noise level survey and the modeled noise levels were compared to the City of Boston Zoning District Noise Standards. Separate regulations within the Standard provide criteria to control different types of noise. Regulation 2 is applicable to the effects of the completed proposed Project and was considered in this noise study. Table 3.7-1 presents the Zoning District Standards.

MassDEP regulates community noise by its Noise Policy: DAQC policy 90-001. The MassDEP policy limits source sound levels to a 10-dBA increase in the ambient measured noise level (L90) at the Project property line and at the nearest residences. The policy further prohibits pure tone conditions – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by three decibels or more.

Table 3.7-1 City of Boston Zoning District Noise Standards, Maximum Allowable Sound Pressure Levels

Octave Band	Res	sidential	Resider	itial-Industrial	Business	Industrial
Center	Zonii	ng District	Zoni	ng District	Zoning District	Zoning District
Frequency	Daytime	All Other Times	Daytime	All Other Times	Anytime	Anytime
(Hz)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
31.5	<i>7</i> 5	68	79	72	79	83
63	76	67	78	<i>7</i> 1	78	82
125	69	61	73	65	73	77
250	62	52	68	5 <i>7</i>	68	73
500	56	45	62	51	62	67
1000	50	40	56	45	56	61
2000	45	33	51	39	51	5 <i>7</i>
4000	40	28	47	34	47	53
8000	38	26	44	32	44	50
A-Weighted (dBA)	60	50	65	55	65	70

Notes: Noise standards are extracted from Regulation 2.5, City of Boston Air Pollution Control Commission, "Regulations for the Control of Noise in the City of Boston", adopted December 17, 1976.

- Standards apply at the property line of the receiving property.
- dB and dBA based on a reference pressure of 20 micropascals.
- Daytime refers to the period between 7:00 a.m. and 6:00 p.m. daily except Sunday.

# 3.7.4 Existing Conditions

#### 3.7.4.1 Baseline Noise Environment

An ambient noise level survey was conducted to characterize the existing baseline acoustical environment in the vicinity of the Project. Existing noise sources in the vicinity of the Project include vehicular traffic (including trucks) on the local roadways, construction activity, pedestrian traffic, mechanical equipment located on nearby buildings, and the general din of the city.

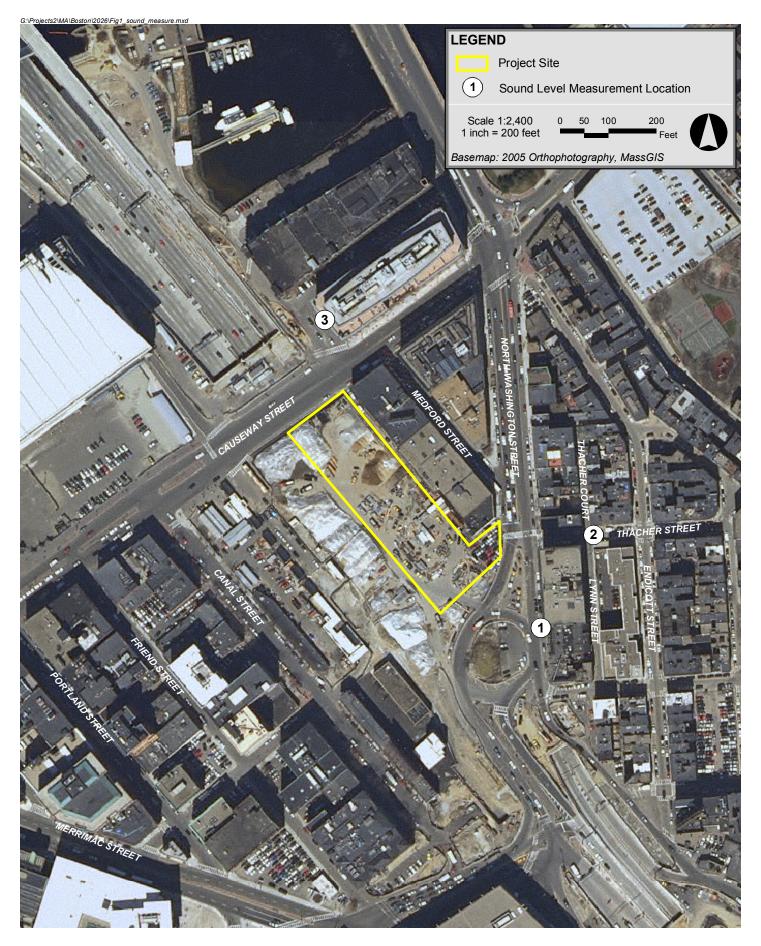
#### 3.7.4.2 Noise Measurement Locations

The selection of the sound monitoring receptor locations was based upon a review of the current and anticipated land use in the area surrounding the Project. Three noise-monitoring locations were selected in representative locations to obtain a sampling of the ambient baseline noise environment. This area encompasses locations on or near North Washington Street and Causeway Street. The measurement locations are depicted on Figure 3.7-1 and are described below.

- Location 1 is near 61 North Washington Street. Sound levels there were reflective of vehicular traffic on North Washington Street, pedestrian foot traffic, and mechanical equipment on building rooftops.
- Location 2 is at the intersection of Thacher Street and Thacher Court. This location is within a residential neighborhood off of North Washington Street. The primary audible sound source at this location was vehicular traffic on North Washington Street and airconditioning units from a nearby building.
- ♦ Location 3 is the residential building located at 266 Causeway Street. Sound levels there were primarily due to traffic on I-93 (before the roadway goes underground).

# 3.7.4.3 Noise Measurement Methodology

Sound level measurements were taken for 20 minutes per location during daytime (1:00 p.m. to 4:00 p.m.) on May 30, 2008, and during the nighttime (12:00 a.m. to 3:00 a.m.) on May 30, 2008. Since noise impacts are greatest at night when existing noise levels are lowest, the study was designed to measure community noise levels under conditions typical of a "quiet period" for the area. Daytime measurements were scheduled to exclude peak traffic conditions.



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The sound levels were measured at publicly accessible locations at a height of five feet above the ground and at locations where there were no large reflective surfaces to affect the measured levels. The measurements were made under low wind conditions and with dry roadway surfaces. Wind speed measurements were made with a Davis Instruments TurboMeter electronic wind speed indicator, and temperature and humidity measurements were made using a Weksler sling psychrometer. Unofficial observations about meteorology or land use in the community were made solely to characterize the existing sound levels in the area and to estimate the noise sensitivity at properties near the proposed Project.

### 3.7.4.4 Measurement Equipment

A CEL Instruments Model 593.C1 Precision Sound Level Analyzer equipped with a CEL-257 Type 1 Preamplifier, a CEL-250 half-inch microphone and a four-inch foam windscreen were used to collect broadband and octave band ambient sound pressure level data. The instrumentation meets the "Type 1 - Precision" requirements set forth in American National Standards Institute (ANSI) S1.4 for acoustical measuring devices. The meter was tripod-mounted at a height of five feet above ground. The meter was equipped with an internal octave band filter set along with data logging capabilities.

Statistical levels were calculated from the sound levels collected during each 20-minute sampling period. Octave band levels for this study correspond to the same data set processed for the broadband levels. The measurement equipment was calibrated in the field before and after the surveys with a CEL-284/2 acoustical calibrator which meets the standards of IEC 942 Class 1L and ANSI \$1.40-1984.

#### 3.7.4.5 Baseline Ambient Noise Levels

The existing ambient noise environment is impacted by vehicular traffic, including trucks, construction activity, and by general human activity during the daytime. During the nighttime, vehicular traffic was still moderate while pedestrian traffic was low, and construction activity was non-existent.

Baseline noise monitoring results are presented in Table 3.7-2 and summarized below.

The daytime residual background (L90 dBA) measurements ranged from 60 to 69 dBA;

The nighttime residual background (L90 dBA) measurements ranged from 52 to 60 dBA;

The daytime equivalent level (Leq dBA) measurements ranged from 64 to 72 dBA;

The nighttime equivalent level (Leg dBA) measurements ranged from 56 to 68 dBA;

It should be noted that the existing background sound levels (L90) for Location 2 (L90 = 52 dBA) already exceed the City of Boston noise standards for a residential area at night (50 dBA Night).

 Table 3.7-2
 Baseline Ambient Noise Measurements

						Octave Band Center Frequency: L <sub>90</sub> Sound Levels								
Receptor I.D	Start	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>	Leq	32	63	125	250	500	1000	2000	4000	8000
	Time	(dBA)	(dBA)	(dBA)	(dBA)	L90	L90	L <sub>90</sub>	L90	L90	L <sub>90</sub>	L90	L <sub>90</sub>	L90
						(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
Loc 1 Day	2:22 p.m.	74	69	67	72	72	<i>7</i> 5	70	65	62	63	59	52	41
Loc 1 Night	12:55 a.m.	<i>7</i> 1	65	60	68	64	66	62	58	56	57	52	38	24
Loc 2 Day	2:52 p.m.	67	62	60	64	66	66	61	58	5 <i>7</i>	56	52	46	36
Loc 2 Night	1:18 a.m.	58	54	52	56	5 <i>7</i>	58	54	53	50	48	43	36	24
Loc 3 Day	3:24 p.m.	73	<i>7</i> 1	69	72	71	72	67	64	64	67	61	48	33
Loc 3 Night	1:43 a.m.	66	62	59	65	61	64	60	55	54	56	51	36	19

#### Notes:

- 1. Daytime weather: Temperature =  $85^{\circ}$ F, RH =  $25^{\circ}$ K, winds 5– 8 mph from the west Nighttime weather Temperature =  $66^{\circ}$ F, RH =  $30^{\circ}$ K, winds light and variable
- 2. Road Surfaces were dry during all periods.
- 3. All sampling periods were approximately 20 minutes in duration
- 4. Daytime measurements were collected on May 30, 2008 Nighttime measurements were collected on May 30, 2008

# 3.7.5 Overview of Potential Project Noise Sources

The primary outdoor sources of sound resulting from the Project will include cooling towers, heating plants, hot water plants, emergency generators, and rooftop ventilation fans. A summary of the major mechanical equipment proposed for the Project is presented below in Table 3.7-3. A summary of noise emissions from the primary sources is presented in Table 3.7-4, which includes broadband (dBA) sound power levels and octave-band sound power levels.

The hotel and office sections of the building will each be equipped with cooling towers. Each cooling tower will be fitted with "Whisper Quiet" fans. For the heating system, each section of the building will have gas-fired boilers, which will be housed inside roof-top mechanical penthouses. The mechanical penthouse for the office section of the building will also contain two 350-ton centrifugal water-cooled chillers. The hotel section of the building will have two gas-fired energy recovery units on the rooftop. Also located on the rooftops will be elevator and stairwell pressurization fans, as well as exhaust/make-up air units for the smoke proof vestibules. Garage exhaust fans will also be located on the roof. Each section will also have a 550 kW emergency diesel generator.

Reference sound levels were calculated for the boilers and chillers using methods described in "Noise Control for Buildings and Manufacturing Plants" (Hoover and Keith, inc., 2005). It was assumed that each chiller would be composed of a packaged centrifugal compressor. Sound power values for rooftop fans and the energy recovery units were determined based on data published by the Greenheck Fan Corporation. Sound power levels for the cooling towers were taken from product literature published by Baltimore Aircoil Company (BAC).

Mitigation will be applied to multiple sources to ensure compliance with noise regulations. The boilers and chillers will be enclosed within mechanical penthouses, and it was assumed that the walls of the penthouses would have a Sound Transmission Class (STC) of at least 28 (STC 28). The emergency generators will be controlled using exhaust silencers and sound-attenuating enclosures. To further limit impacts, the required periodic routine testing of the generators will be conducted during daytime hours when background sound levels are highest. A summary of the noise mitigation proposed for the Project is presented below in Table 3.7-5.

Table 3.7-3 Expected Primary Noise Sources

# Hotel Section of the Building

Noise Source	Quant ity	Location (elevations approximate)	Size/Capacity (per unit)
Boilers	6	Penthouse – 132' AGL	2,000 MBH (each)
Energy Recovery Ventilators	2	Roof – 132' AGL	350 MBH and 200 MBH
Cooling Tower	2 Cells	Roof – 132' AGL	15 HP Fan
Garage Exhaust Fan	1	Roof – 132' AGL	22,500 CFM
Emergency Generator	1	Roof – 132' AGL	550 kW
Elevator Pressurization Fan	2	Roof	5,000 CFM
Stairwell Pressurization Fan	4	Roof	8,250 CFM
Smoke proof Vestibule Exhaust Fan	2	Roof	10,000 CFM
Smoke proof Vestibule Gas-Fired Make-Up Air Unit	2	Roof	6,500 CFM

# Office Section of the Building

Noise Source	Quant ity	Location (elevations approximate)	Size/Capacity (per unit)
Centrifugal Chillers	2	Penthouse – 144' AGL	350 Tons (each)
Boilers	6	Penthouse – 144' AGL	2,000 MBH (each)
Ventilation Unit	1	Penthouse – 146' AGL	29,000 CFM
Cooling Tower	2 Cells	Roof – 144' AGL	20 HP Fan
Garage Exhaust Fan	1	Roof – 144' AGL	22,500 CFM
Emergency Generator	1	Roof – 144' AGL	550 kW
Elevator Pressurization Fan	1	Roof	5,000 CFM
Stairwell Pressurization Fan	1	Roof	8,250 CFM
Smokeproof Vestibule Exhaust Fan	1	Roof	10,000 CFM
Smokeproof Vestibule Gas-Fired Make- Up Air Unit	1	Roof	6,500 CFM

Table 3.7-4 Reference Equipment Noise Levels – Total for All Units

Noise Source	Form of Data	Ref.	Sound	Octave Band Center Frequency (Hz)							
		Distance	Level	63	125	250	500	1000	2000	4000	8000
			(dBA)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
BAC Model 15227 Cooling Tower	Sound Power	NA	90	101	97	91	89	83	81	76	70
(15 HP Whisper Quiet Fan) <sup>1</sup>											
BAC Model 15325 Cooling Tower	Sound Power	NA	91	102	98	92	90	84	82	77	72
(20 HP Whisper Quiet Fan) <sup>2</sup>											
Trane Model CVHF Centrifugal	Sound Power	NA	96	97	98	99	96	98	98	94	87
Chiller											
2,000 MBH Boiler (sound levels	Sound Power	NA	96	99	98	96	93	90	87	84	81
represent one unit)											
350 MBH Gas-Fired Energy	Sound Power	NA	94	101	99	94	90	88	88	86	82
Recovery Ventilation Unit –											
Greenheck Model ERCH-90H-30-27											
200 MBH Gas-Fired Energy	Sound Power	NA	90	98	94	88	85	84	84	81	76
Recovery Ventilation Unit –											
Greenheck Model ERCH-90H-30-20											
Elevator Pressurization Fan –	Sound power	NA	78	76	74	73	74	74	73	68	62
Greenheck Model RSFP-180-20											
Stairwell Pressurization Fan –	Sound Power	NA	80	84	80	84	77	73	<i>7</i> 1	66	63
Greenheck Model SWB-227-50											
Smokeproof Vestibule Exhaust Fan –	Sound Power	NA	80	84	81	83	77	74	72	67	63
Greenheck Model SWB-230-50											
600 MBH Gas-Fired Smokeproof	Sound Power	NA	89	91	85	82	84	85	81	79	76
Vestibule Makeup Air Unit –											
Greenheck Model IGX-115-H22											

Table 3.7-4 Reference Equipment Noise Levels – Total for All Units (Continued)

Noise Source	Form of Data	Ref.	Ref. Sound Octave Band Center Frequency (Hz)								
		Distance	Level (dBA)	63 (dB)	125 (dB)	250 (dB)	500 (dB)	1000 (dB)	2000 (dB)	4000 (dB)	8000 (dB)
Garage Exhaust Fan – Greenheck Model QEI-36-I	Sound Power	NA	87	86	91	86	87	82	77	71	64
Emergency Generator (550 kW) <sup>3</sup>	Sound Power	NA	84	90	90	83	74	77	76	76	70
Emergency Generator Exhaust (550 kW) <sup>3</sup>	Sound Pressure	1 meter	116	63	88	102	103	108	110	110	107

NA = Not Applicable to sound power data.

- 1. Rooftop of hotel section of the building
- 2. Rooftop of office section of the building
- 3. Sound data for a Cummins DQCA 600 kW diesel generator were used

Table 3.7-5 Attenuation Values Used for Sound Level Modeling (dB)

Noise Source	Form of Mitigation	Octave Band Center Frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
Emergency Generator –	Exhaust Silencer	17	26	32	34	33	32	31	32
Exhaust <sup>1</sup>									
Mechanical Penthouse	Transmission Loss of	10	13	1 <i>7</i>	26	33	36	47	47
Equipment: Chilled Water	Wall Assembly								
and Hot Water Plants <sup>2</sup>									

<sup>1.</sup> GT Exhaust Systems, Inc 411-5200 Series Critical Grade

# 3.7.6 Modeling Methodology

Anticipated noise impacts associated with the Project were predicted at the nearest residences around the Project using the Cadna/A noise calculation model. This model uses the ISO 9613-2 industrial noise calculation methodology. This model allows for octave band calculation of noise from multiple noise sources, as well as for computation of diffraction around building edges and multiple reflections off parallel buildings and solid ground areas. In this manner, all significant noise sources and geometric propagation effects are accounted for in the noise modeling.

### 3.7.7 Future Sound Levels from Project

Predicted Project-generated noise levels at each measurement location are all at least 10 dBA lower than the quietest nighttime sound levels, which accounts for attenuation due to distance, structures, and noise control measures. The predicted exterior sound levels with noise mitigation measures are expected to range from 39 dBA to 40 dBA at the street-level modeling locations. The street level sound levels are well within the most stringent nighttime residential zoning limits for the City of Boston (50 dBA). The Project's rooftop mechanical equipment will not create new pure tone conditions when combined with existing middle of the night background sound levels. The results of the modeling, including mitigation, are shown in Table 3.7-6 (MassDEP criteria) and Table 3.7-7 (Boston criteria).

<sup>2.</sup> North American Insulation Manufacturer's Association - STC 29 R13 Wall

Table 3.7-6 Comparison of Future Predicted Nighttime Sound Levels Incorporating Appropriate Mitigation with Existing Background – MassDEP Criteria

Location	Lowest Existing Nighttime L <sub>90</sub> (dBA)	Future Project L <sub>90</sub> (dBA) <sup>1</sup>	Future L <sub>90</sub> – Nighttime Total (dBA)	Increase (dBA)
Location 1 – 66 North Washington Street	60	31	60	0
Location 2 – Thacher Street and Thacher Court	52	40	52	0
Location 3 – 266 Causeway Street	59	38	59	0

Notes: Calculations include rooftop ventilation equipment, cooling towers, chillers, and boilers. Emergency generator and parking garage fans not included.

Table 3.7-7 Comparison of Future Predicted Nighttime Sound Levels Incorporating Appropriate Mitigation to City of Boston Criteria

Location	Future L <sub>90</sub> Project (dBA)	Boston Nighttime Limit (dBA)
Location 1 – 61 North Washington Street	31	50
Location 2 – Thacher Street and Thacher Court	40	50
Location 3 – 266 Causeway Street	38	50

Notes: All noise sources listed in 3.9-7 included except the emergency generators.

### 3.7.8 Emergency Generators

The emergency generators will only operate during the day for brief, routine testing when the background sound levels are high, or during an interruption of the electrical grid, in which case the rooftop mechanical equipment will not be operating.

Sound levels from the emergency generators were calculated, and the results are shown in Table 3.9-8. Expected worst-case sound levels will be below the City of Boston daytime noise limit of 60 dBA. The generators will be equipped within sound-attenuating enclosures, so there will be very little increase above the sound levels shown in Tables 3.7-6 and 3.7-7.

Table 3.7-8 Predicted Emergency Generator Noise Levels Incorporating Appropriate Mitigation (Generators Operate During Daytime Only)

Receptor ID	Generator Sound Level
Location 1 – 61 North Washington Street	31 dBA
Location 2 – Thacher Street and Thacher Court	41 dBA
Location 3 – 266 Causeway Street	38 dBA
City of Boston Residential Zoning Criteria	60 dBA (day)
City of Boston Business/Commercial Zoning Criteria	65 dBA (day)

#### 3.7.9 Conclusions

The above results indicate that noise levels due to the Project at the various receptor locations are predicted to be below the most stringent City of Boston Noise Zoning requirements for a nighttime residential zone for street level receptors, and are well below existing measured nighttime baseline noise levels. Through the various forms of noise mitigation incorporated into this Project, the results of the analysis indicate that the proposed building can operate without significant impact on the existing acoustical environment.

### 3.8 Water Quality/Storm Water Management

### 3.8.1 Existing Conditions

The Project site was formerly used for an elevated roadway section of Interstate 93. Storm water runoff from this portion of the elevated highway was discharged into the Boston Water and Sewer Commission (BWSC) combined sewer system at several locations. As part of the Central Artery/Tunnel project mitigation program, and on behalf of the City of Boston, the Massachusetts Turnpike Authority installed new storm water drainage systems adjacent to the Project site to remove storm water flows from the combined sewer system. Even though the previous surface characteristic of this site was completely impervious, portions of the undeveloped Project site currently include temporary grass cover on the soil portion of the site.

### 3.8.2 Future Storm Water Conditions

Storm water runoff from the Project will be directed to the existing BWSC storm water drainage system in adjacent public streets – (Beverly Street and Valenti Way) - and to the

54-inch diameter storm water drainage pipe located within an on-site easement east of Beverly Street, at the rear of 239 Causeway Street and 160 North Washington Street. This BWSC storm drain discharges into Boston Harbor in the vicinity of Lovejoy Wharf. Based on initial investigations, this drainage system is adequately sized to accept the incremental increase of storm water from the Project site.

The installation of green roofs is planned for the buildings, which will reduce peak runoff flow rates.

BWSC will review and evaluate the impacts of storm water connections to its system under its Site Plan Review Process. The Project team will submit a Storm Water Management Program to BWSC. The estimated existing runoff and future storm water flows from the site are summarized below in Table 3.8-1.

Table 3.8-1 Storm Water Runoff

	2-year Storm	10-year Storm	25-year Storm	100-year Storm
Estimated Existing Runoff (cfs)	3.6	4.7	5.5	10.4
Projected Future Runoff (cfs)	4.0	5.2	6.1	11.5

Information on the Project's compliance with the requirements of the MassDEP Stormwater Management Policy can be found in Section 6.4.3.

### 3.9 Flood Hazard Zones / Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the site located in the City of Boston - Community Panel Number 250286 0005 D indicates the FEMA Flood Zone Designations for the site area. The map shows that the Project is located in a Zone C, Area of Minimal Flooding.

The site does not contain wetlands.

### 3.10 Geotechnical Impacts

As part of the Central Artery/Tunnel project, extensive geotechnical investigations and reports were performed in and around the Project site. This information is used to evaluate the subsurface conditions for the proposed development of the Project site. The Project is proposed to be located above underground structures that cross the property, including the Central Artery. The Project is to be founded on the Central Artery tunnels in combination with independent deep foundations as needed.

#### 3.10.1 Subsurface Soil and Bedrock Conditions

Above the Central Artery tunnel, the ground surface is underlain by upwards of 11 feet of granular fill. The ground surface over the portion of the site that is not occupied by the tunnel is generally underlain by a 10- to 13-foot thickness of miscellaneous fill associated with historic site filling. Underlying the fill deposit is an approximate 15- to 35-foot thick deposit of organic silt and peat. Beneath the fill and organic deposits, a marine clay deposit is anticipated to extend to a depth of about 60 feet below the existing ground surface. The marine clay deposit is anticipated to be underlain by a deposit of glacial till. The glacial till deposit is anticipated to be interbedded by discontinuous deposits of very dense sand and gravel and a hard silt and clay. Bedrock is anticipated at depths ranging from approximately 80 to 93 feet below ground surface.

#### 3.10.2 Groundwater

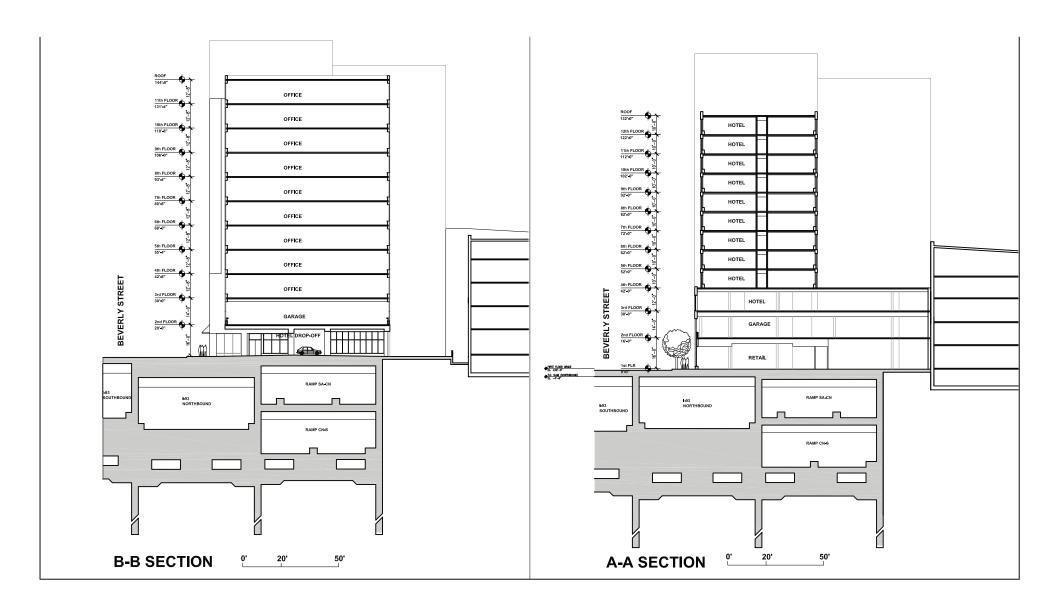
Groundwater monitoring in the vicinity of the site over a period of several years indicates groundwater levels ranging from El. +7 to +11 (City of Boston Base). The groundwater level across the site will fluctuate due to seasonal changes, rainfall, local construction and utility activities, and other factors. Neither tidal fluctuations nor the water level in the Charles River appear to have a significant effect on the groundwater level at the site.

The Project site is located within the Groundwater Conservation Overlay District (GCOD) as outlined in Section 6 of Article 32 of the City of Boston Zoning Code. Because of the site's location in the Bulfinch Triangle, the Proponent will certify that the Project will not negatively impact groundwater levels on the site or on adjacent lots pursuant to the provisions of Article 32, Section 6. The Proponent has contacted the Boston Groundwater Trust to discuss the Project.

#### 3.10.3 Project Impacts and Foundation Considerations

As previously indicated, the CA/T tunnel structures underlie the majority of the site (see Figure 3.10-1). These structures comprise most of the underground space within the site and leave little room for independent foundations for air rights development of the parcel. Therefore, it is proposed that the air rights development be based on the Central Artery tunnels with independent deep foundations installed for the portions of the proposed building located outside the existing tunnel footprint.

Based upon the design and configuration of the existing CA/T tunnel and the anticipated subsurface conditions overlying the tunnel roof, foundation support for the portion of the proposed structure to be located above the existing tunnel will be provided by a shallow footing foundation system. Foundation support for the portion of the proposed building



The Merano Boston, MA

located outside the tunnel footprint will be provided by end bearing piles, such as steel H-piles or precast concrete piles, that transfer the structural loads through the unsuitable fill, compressible organic and marine deposits, and into the underlying glacial till or bedrock deposits.

Pile driving produces ground vibrations that are perceptible to humans, but generally do not cause damage to structures. During pile driving, vibration levels will be monitored at the CA/T tunnel structure and surrounding properties to ensure that the pile driving is not adversely affecting the existing structures.

Given that groundwater is generally anticipated to be present at a depth of about 8 to 10 feet below ground surface, dewatering is generally not anticipated to be required for foundation construction other than to manage localized perched water conditions in pile cap and utility excavations. The proposed building is not anticipated to have below-grade space, and hence the building will not require perimeter or underslab drainage, and will therefore not have an adverse impact on the groundwater level within or adjacent to the site.

As discussed above, the Project will include coordination with the Boston Groundwater Trust to protect groundwater levels in the area, and it will include the monitoring of existing groundwater observation wells in the vicinity of the site before, during, and following construction.

# 3.11 Construction Impacts

A Construction Management Plan (CMP) will be submitted to the Boston Transportation Department (BTD) for review and approval prior to issuance of a building permit. The CMP will define truck routes which will help in minimizing the impact of trucks on local streets. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Construction methodologies that ensure public safety and protect nearby businesses will be employed. Techniques such as barricades, walkways, painted lines, and signage will be used as necessary. Construction management and scheduling – including plans for construction worker commuting and parking, routing plans and scheduling for trucking and deliveries, protection of existing utilities, maintenance of fire access, and control of noise and dust - will minimize impacts on the surrounding environment.

It is expected that virtually all construction activities can be accommodated within the current site boundaries. The proposed construction staging plan will be designed to secure the perimeter and isolate the construction while providing safe access for pedestrians and vehicles during normal day-to-day activity and emergencies.

#### 3.11.1 Construction Schedule and Coordination

Construction of the Project is estimated to last approximately 24 months, with initial site work expected to begin in fall 2008.

Typical construction hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 3:30 p.m. No sound-generating activity will occur before 7:00 a.m. If longer hours, additional shifts, or Saturday work is required, the Construction Manager will place a work permit request to the Boston Air Pollution Control Commission and BTD in advance. Notification should occur during normal business hours, Monday through Friday. It is noted that some activities such as finishing activities could run beyond 6:00 p.m. to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete cannot be interrupted.

Proper planning with the City, neighborhood and developers of other projects under construction in the area will be essential to the successful construction of the Project. The construction contractor will be responsible for coordinating construction activities during all phases of construction with City of Boston agencies to minimize potential scheduling and construction conflicts with other ongoing construction projects in the area.

#### 3.11.2 Foundation Construction

Section 3.10 provides details regarding foundation methodology and plans to protect adjacent infrastructure, buildings and underground tunnels during construction.

### 3.11.3 Construction Staging/Public Safety/Access

To minimize transportation impacts during the construction period, the CMP will include detailed construction trucking routes to and from the site. It is anticipated that the primary construction route will be I-93 to North Washington Street, with possible additional access along Causeway Street and Valenti Way.

Primary staging will be on-site. The proposed construction staging plan will be designed to isolate the construction while providing safe access for pedestrians and vehicles during normal day-to-day activities and emergencies. The staging areas will be secured by chain-link fencing to protect pedestrians from entering these areas.

Although specific construction and staging details for each phase of construction have not been finalized, the Proponent and its construction management consultants will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the site. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered

pedestrian walkways when appropriate and, if required, the suspension of the use of certain sidewalks during the most hazardous periods of overhead work activity during the construction of the superstructure. If required by BTD and the Boston Police Department, police details will be provided to facilitate traffic flow. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.

# 3.11.4 Construction Employment and Worker Transportation

The number of workers required during the construction period will vary, with an estimated average daily work force ranging from approximately 200 to 240. The Proponent will make reasonable good-faith efforts to have at least 50 percent of the total employee work hours be for Boston residents, at least 25 percent of total employee work hours be for minorities and at least 10 percent of the total employee work hours be for women. The Proponent will enter into a construction jobs agreement with the City of Boston.

To reduce vehicle trips to and from the construction site, minimal construction worker parking will be available at the site and all workers will be strongly encouraged to use public transportation and ridesharing options. The Proponent and contractor will work aggressively to ensure that construction workers are well informed of the public transportation options serving the area. The building is being constructed close to the existing MBTA trains directly adjacent to the Project. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the site each day.

#### 3.11.5 Construction Truck Routes and Deliveries

The construction team will manage deliveries to the site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. The construction team will provide subcontractors and vendors with Construction Vehicle & Delivery Truck Route Brochures in advance of construction activity. "No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

The Proponent will coordinate with BTD to designate access routes for truck deliveries and truck routes which will be established in the CMP.

Truck traffic will vary throughout the construction period, depending on the activity. Construction truck routes to and from the Project site for contractor personnel, supplies, materials, and removal of excavations required for the Project will be coordinated with BTD. Truck Access during construction will be determined by the BTD as part of the Construction Management Plan. These routes will be mandated as a part of subcontractors' contracts for the Project. Traffic logistics and routing are planned to minimize community impacts.

#### 3.11.6 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

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

### 3.11.7 Construction Air Quality

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

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;

- Minimizing spoils on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site; and
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

#### 3.11.8 Construction Waste

The Proponent will reuse or recycle construction materials to the extent feasible. Construction procedures will allow for the segregation, reuse, and recycling of materials. Materials that cannot be reused or recycled will be transported in covered trucks by a contract hauler to a licensed facility, per the MassDEP regulations for Solid Waste Facilities, 310 CMR 16.00.

### 3.11.9 Rodent Control

A rodent extermination certificate will be filed with the building permit application to the City. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work for the proposed Project, in compliance with the City's requirements. Rodent extermination prior to work start-up will consist of treatment of areas throughout the site. During the construction process, regular service visits will be made.

#### 3.11.10 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its plan review process.

### 3.11.11 National Pollutant Discharge Elimination System

The Project involves the disturbance of over one acre, therefore it will require coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater during construction.

# 3.12 Sustainable Design

The Proponent is committed to developing a sustainable project that uses resources efficiently, reduces impacts on its surroundings, and creates a beneficial environment for workers and visitors.

### 3.12.1 Transportation

The Project represents a Transit Oriented Development through the creation of a mixed-use development adjacent to a variety of transit choices. The Project is located adjacent to North Station, with access to four MBTA Commuter Rail lines, and Amtrak service to New Hampshire and Maine. The North Station subway station is located one block away on Valenti Way and provides service on the Orange and Green Lines. In addition, MBTA bus service is located two blocks away in either direction on Canal Street and New Chardon Street. The bus service on Canal Street provides a connection to the MBTA Silver Line.

#### 3.12.2 Smart Growth

Smart Growth is intended to draw attention and resources to restoring community vitality to city centers and older nearby suburbs. Smart growth and sustainable development principles that are embodied as part of the planning of the Project include:

- Concentrating development that is compact, integrates uses, and fosters a sense of place;
- Providing transportation choices;
- Increasing job opportunities near transportation options; and
- Planning regionally through the development of a project with regional benefits.

### 3.12.3 Leadership in Energy and Environmental Design (LEED)

The Project will comply with Article 37 of the Boston Zoning Code on Green Buildings requiring the Project to be certifiable under the Leadership in Energy and Environmental Design (LEED) program. In addition, the Proponent is committed to sustainable design and, as such, is exploring the potential for the Project to be LEED) certified.

The LEED New Construction rating system (version 2.2) has been applied to the Project, and the current checklist is attached as Appendix D. The LEED checklist indicates that the Project scope includes approximately 29 credits, potentially achieving a Certified rating.

The Project's LEED scope and specific methodologies are still being investigated and reviewed. It is proposed that the Project will do the following to meet LEED prerequisites and achieve LEED credits:

- ◆ Develop a sediment and erosion control plan in conformance with U.S. Environmental Protection Agency guidelines;
- Not be developed on an inappropriate site per the criteria prohibited by the LEED program, such as farmland, undeveloped floodlands, wetlands, habitat for rare and endangered species, undeveloped land within 50 feet of a water body, or prior public parkland;
- Increase development density and community connectivity by constructing the Project on a previously developed site in an urban area with a density far exceeding the LEED minimum of 60,000 sf per acre net;
- Reduce pollution and land development impacts from automobile use by locating the Project adjacent to a transportation hub and within a block or two of existing commuter rail, subway, and bus lines;
- Reduce pollution and land development impacts from automobile use by providing secure bike storage for 5% of all building users, and providing shower and changing facilities for 0.5% of the full-time equivalent occupants;
- Reduce pollution and land development impacts from automobile use by providing preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity;
- Reduce pollution and land development impacts from single occupancy vehicle use by providing preferred parking and drop off areas for carpools or vanpools for 5% of total provided parking spaces;
- Mitigate urban heat island effect by installing all parking within the building and installing a vegetative or light colored (high solar reflectance index) roof system;
- Reduce potable water consumption for landscape irrigation by utilizing native or adaptive species, using high efficiency irrigation systems, and recycling captured rainwater;
- ♦ Implement technologies to reduce water usage by 20% through the use of high efficiency/low flow water closets, urinals, lavatory faucets, showers, and kitchen sinks;
- ♦ Implement fundamental best practice commissioning procedures;

- Design the building to comply with ASHRAE/IESNA 90.1-2004 or the Massachusetts State code, whichever is more stringent;
- Utilize refrigerants which have both a low global warming potential and a low ozone depletion factor;
- Reduce environmental and economic impacts associated with excessive energy use by optimizing energy performance and exceeding the baseline building performance rating per ASHRAE/IESNA 90.1-2004 by 14%;
- Reduce waste generated by building occupants and disposed of in landfills by providing an easily accessible storage area for the collection and storage of materials for recycling;
- Develop and implement a construction waste management plan in order to divert 75% of nonhazardous construction waste from disposal in landfills and incinerators to recycle and/or reuse materials;
- Use construction materials with recycled content, reducing impacts from extraction and processing of virgin materials;
- Use construction materials that are manufactured regionally, thereby supporting the use
  of local resources and reducing the environmental impacts from transportation of
  materials;
- ♦ Enhance indoor air quality by meeting the minimum requirements of ASHRAE 62.1-2004, Ventilation for Acceptable Indoor Air Quality or local code, whichever is more stringent;
- ♦ Minimize exposure of building occupants to environmental tobacco smoke by prohibiting smoking in public areas of the building, limit exterior smoking to at least 25 feet from entries, intakes and operable windows opening to common area, and sealing penetrations in walls, ceilings and floors between hotel units;
- Develop a construction indoor air quality management plan to reduce indoor quality problems resulting from construction to enhance the well-being of both construction works and future building occupants;
- Reduce the indoor air contaminants and enhance air quality for installers and occupants through the use of low-emitting materials, including adhesives and sealants, paints, carpet systems, and composite wood products;
- Minimize cross-contamination of regularly occupied areas by chemical pollutants;
- Provide a high level of lighting system control by occupants to promote productivity, comfort and well-being of building occupants;

- Institute a comprehensive transportation management plan that demonstrates a quantifiable reduction in personal automobile use through the offering of multiple alternative transportation methods;
- ♦ Institute a green housekeeping program;
- Develop a building environmental education program, including appropriate written materials and signage; and
- Encourage design integration through the inclusion of multiple LEED Accredited Professionals on the Project team, including architectural and engineer team members.

Chapter 4.0 Urban Design

# 4.0 URBAN DESIGN

The Project envisions the revitalization of a prominent parcel located at the entranceway to the Bulfinch Triangle from the Rose Fitzgerald Kennedy Greenway, Downtown, and the North End. The three new major elements of the block are distinguished in height and mass to reflect their principal uses – hotel and office – and to best relate to the physical context of the surrounding structures.

The historic nature of the Project site is respected through preservation of the existing commercial buildings on Medford Street which are associated with the building scale of the adjacent North End. The site itself recreates a block structure similar to that existing prior to the building of the former elevated Central Artery, helping to knit the Bulfinch Triangle neighborhood back together. Retail activities at street level on Causeway and Beverly streets and Valenti Way will reinforce pedestrian links between the North End, the transportation hub at North Station, and Downtown.

The overall massing of the Project reflects the existing Bulfinch Triangle buildings that typically occupy their entire sites up to the sidewalk line with simple, large-scaled, mid-rise buildings articulated by simple brick facades.

The tallest building mass of the new construction (the extended-stay hotel) is placed on Causeway Street, where it addresses the views to Portal Park and the Zakim Bridge, and relates to the taller buildings across the street, including 236 Causeway Street and the TD Banknorth Garden. The highest element accentuates the entryway character of this site along the major thoroughfare of Causeway Street, visible when entering the Central Artery tunnel below on I-93 South. A prominent articulation of the building corner at Beverly and Causeway streets orients toward North Station.

The building steps down along Beverly Street toward the second hotel element, offering variety in the heights of the block. The office and retail building element sets back at the upper floors to mitigate the height along Beverly Street and transition to the lower office building mass along Valenti Way. The elevation along Valenti Way is lower in height, sympathetic to the North End neighborhood across North Washington Street from the site, wrapping around the end of the block to transition to the lower existing buildings along Medford Street. The southern corners of the site offer urban views from within the building to the city beyond.

A welcoming streetscape is fostered by wide, tree-planted sidewalks with ground-level retail space attracting passerby attention and extending street-level activity through the neighborhood. Sidewalks surrounding the site on Causeway, Beverly, and North Washington streets and Valenti Way will be replaced with new concrete walks with granite paving at the building's main entrances to the hotels and office lobbies. Existing newly planted street trees will be relocated and supplemented to coordinate with the building design.

An open air space, parallel to the block, centered between the existing buildings adjacent to the site and the new construction, allows natural light to reach the rear of both new and existing buildings, facilitates fire separation, and provides a vehicle access zone. The space also minimizes the width of the new building elements.

The mixed use Project includes retail, hotel, office and parking and will complement and enhance the Rose Fitzgerald Kennedy Greenway and Bulfinch Triangle neighborhood.

Please see Appendix A for figures showing floor plans, elevations, sections, and perspectives of the Project.

Historic and Archaeological Resources

# 5.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

# 5.1 Introduction

The following section describes historic resources in the vicinity of the Project and generally discusses potential impacts on historic resources from the Project. A review of the State and National Registers of Historic Places, Massachusetts Historical Commission (MHC) and Boston Landmarks Commission (BLC) survey files, as well as a field review of the areas in the vicinity of the Project, were undertaken to identify historic resources.

The Project site is located immediately adjacent to the Causeway/North Washington Street District, a district determined eligible for listing on the National Register of Historic Places as part of the Central Artery project. The Project site is also located in the vicinity of the Bulfinch Triangle Historic District, a district listed in the State and National Registers of Historic Places.

# 5.2 Historic and Archaeological Resources

### 5.2.1 Existing Historic Resources

The name and address of properties listed in the State and National Registers of Historic Places and properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth within a quarter-mile radius of the Project are listed in Table 5-1. Figure 5-1 depicts the locations of these properties. Photographs of the Project site and adjacent historic properties and a photograph key are depicted in Figure 5-2 to 5-8.

There are no historic properties located within the Project site. The Project site is located immediately adjacent to the Braman, Dow and Company Building at 239-245 Causeway Street; three late 19<sup>th</sup> century commercial buildings at 6-24 Medford Street; and the Francesco Building at 90 North Washington Street, contributing resources in the Causeway/North Washington Street District. This District, which also includes properties north of Causeway Street, east of Medford Street and along North Washington Street, consists of a group of six-to-nine-story, 19<sup>th</sup> and early 20<sup>th</sup> century commercial structures. A one-story, ca. 1929 structure is located at 88 North Washington Street. The structure is not included in the Inventory or listed in the State and National Registers of Historic Places.

Table 5-1 Historic Resources in the Vicinity of the Project Site

Мар Кеу	Historic Resource	Address				
to Figure 5-1						
State and National Register-listed Properties						
Α	Bulfinch Triangle Historic District	Canal, Causeway, Friend, Lancaster, Lowell				
		Square, Merrimack, Portland and Traverse				
		Streets				
В	North Terminal Garage	600 Commercial Street				
С	Copp's Hill Burial Ground	Snowhill Street				
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth						
1	Causeway/North Washington Street Area	Causeway and North Washington Streets				
2	North End Area	Roughly the waterfront to North Washington to				
		Central Artery to Clinton Street to Atlantic				
		Avenue				
3	Charlestown Bridge	North Washington to Rutherford Avenue over				
		Charles River				
4	Lindeman Center	15-25 Staniford Street				
5	35, 43-45 Hawkins Street					
6	25 New Chardon Street					
7	JFK Federal Building	15 Cambridge Street				

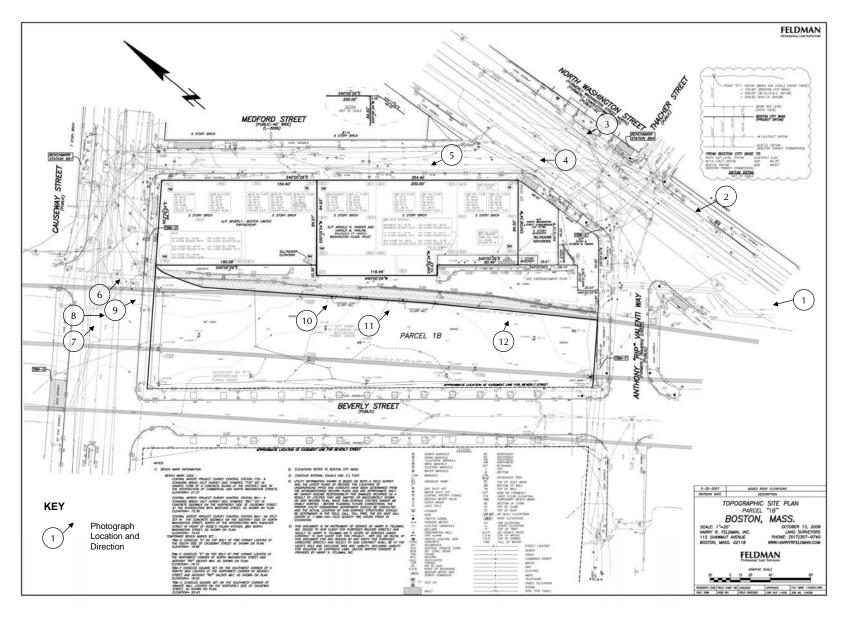
### 5.2.2 Development of the Causeway/North Washington Street Area

The Causeway Street/North Washington Street area was first developed when a polluted mill pond was filled with gravel taken from the peak of Beacon Hill, and a new street grid was laid out by then Boston selectman, architect Charles Bulfinch. Known as the Bulfinch Triangle, the original layout formed a triangle between Merrimac, North Washington and Causeway streets. The grid of streets, together with the buildings thereon was partially destroyed in the mid-twentieth century for the construction of the elevated Central Artery. The original street grid was restored as part of the Third Harbor Tunnel, Interstate 90/Central Artery, Interstate 93 project in the late twentieth century.

The Project site is located within the newly restored City block bounded by Causeway, Beverly and Medford streets and Valenti Way (formerly Traverse Street). The southeast corner of the block also includes a small frontage on North Washington Street, created when North Washington Street was widened in the early twentieth century. In the midnineteenth century, the block was dominated by two-to-three-story, primarily wood frame commercial structures with storage yards for materials. By 1885, the first large-scale brick structure was constructed at the corner of Causeway and Medford streets, which housed the Boston Rubber Shoe Company. This five-story structure was connected to another five-story









Photograph 1: View northwest of Parcel 1B, 88 North Washington Street, 90 North Washington Street, from intersection of North Washington Street and Valenti Way.



Photograph 2: View west of 88 North Washington Street and 90 North Washington Street, from intersection of North Washington Street and Valenti Way.





Photograph 3: View north, from intersection of North Washington and Thatcher Streets to Medford Street.



Photograph 4: View north down Medford Street



Photograph 5: View northwest along Medford Street of 6-24 Medford Street and 239 - 245 Causeway Street.



Photograph 6: View east along Causeway Street of 239-245 Causeway Street.



Photograph 7: View east from intersection of Causeway and Beverly Streets of 239-245 Causeway Street and 6-24 Medford Street



Photograph 8: View southeast of Parcel 1B from Causeway Street.



Photograph 9: View southeast of 239-245 Causeway Street and rear elevations of 6-24 Medford Street from Causeway Street.



Photograph 10: View east of rear elevations of 6-24 Medford Street from Parcel 1B.





Photograph 11: View east of rear elevations of 6-24 Medford Street from Parcel 1B.



Photograph 12: View east of 6-24 Medford Street, 90 North Washington Street and 88 North Washington Street from Beverly Street.



masonry structure housing the same company, which is located within the present-day Parcel 1B. At that time, Parcel 1B also included several smaller, four- and five-story brick structures and storage yards along Beverly Street. In addition, several two-story tenements were also located within this block. By 1895, two of the three, five-story, brick commercial buildings still present on Medford Street were constructed, and most of the remaining parcels on Beverly Street were infilled with new masonry structures, although some small, wood frame structures still remained.

By 1909, several new buildings constructed of reinforced concrete were added to the center parcels on the block, leaving only a few small-scale, wood frame structures at the northwest and southeast corners of the block. At that time, the Beverly and Medford streets' buildings located at the north end of the block shared party walls, several smaller structures were located immediately between the central buildings on Beverly and Medford streets, and the last two-story tenement, on the present-day location of 90 North Washington Street, had been converted to a "junk shop."

By 1929, the structures on the northwest corner of the block (within Parcel 1B) were demolished for a filling station. The former tenement building had been replaced with the present-day 90 North Washington Street building and the structures on the southeast corner of the block (now 88 North Washington Street) were also replaced with a filling station, including the existing building on the site. By the mid-twentieth century, all structures along Beverly Street, now located within Parcel 1B, as well as Beverly Street itself, were demolished for the construction of the elevated Central Artery. The original street grid was restored as part of the Central Artery project, and Parcel 1B was created as an air rights development site over the new below-grade tunnel system.

### 5.2.3 Archaeological Resources

No known archaeological resources are located within the Project site. The Project site was previously disturbed by the construction of the Central Artery/Tunnel project. No previously unidentified archaeological resources are anticipated to be located within the Project site.

### 5.3 Joint Development Guidelines

The redevelopment of Parcel 1B is subject to review by the MHC and BLC in compliance with Section 106 of the National Historic Preservation Act (Section 106). A Memorandum of Agreement (MOA) with the Federal Highway Administration was developed in 1984 to mitigate adverse effects to historic resources associated with the construction of the Third Harbor Tunnel, Interstate 90/Central Artery, Interstate 93 project. In compliance with Stipulation 5 of this MOA, certain parcels will be subject to the Joint Development Guidelines (JDG) drafted by the Massachusetts Department of Public Works (now the Massachusetts Highway Department), MHC, and BLC.

The historic resource considerations included in the JDG were developed as thematic guidelines that allow for flexible interpretation with the framework of the Secretary of the Interior's Standards. The purpose of the JDG was to encourage design that is compatible with historic resources by reinforcing historic patterns and the relationship between historic elements essential to the character of individual historic resources and districts. Major design issues include setbacks, size and shape of building forms, roof shapes, proportions of facades, rhythms of facades, proportions of fenestration, and rooflines.

# 5.3.1 Consistency with Joint Development Guidelines

The JDG are arranged into two categories: Corridor-wide Issues and Neighborhood Issues.

#### 5.3.1.1 Corridor-wide Issues

Corridor-wide guidelines were developed during the Section 106 review and in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Preservation Projects*. These Standards encourage new design to take existing architectural themes into account, and to interpret rather than imitate historic architecture. The guidelines for new construction are organized into eight principles; this section describes how the Project is consistent with these principles.

1. Reinforce the historic street plan between areas disrupted by the elevated Artery – such as along Traverse, North Washington, Hanover, Salem, Commercial, State, Central, Milk, and India Streets and Atlantic Avenue - by providing strong, continuous street edges and/or pedestrian routes.

The design of the Project will reinforce the restored street plan along Beverly Street and Valenti Way and will maintain and reinforce the existing street plan along Causeway and North Washington streets by locating the proposed new construction along the rear edge of the sidewalks. The Project will reintroduce a strong street wall following the restored street pattern and reconnect pedestrian links from the Bulfinch Triangle Historic District, across the new Greenway and into the Causeway/North Washington Streets District.

2. Reinforce the connections between, and views of, historic resources, including views of the harbor and of Fort Point Channel, and connections between the Bulfinch Triangle and the Causeway/North Washington Streets District; the North End, Blackstone Block, and the two parts of the original Bulfinch Triangle; Quincy Markets and the Fulton/Commercial Streets District; and the Essex/Kingston, Leather, and Chinatown districts.

The Project will reinforce the visual connection between the Causeway/North Washington Streets District across the Greenway and the Bulfinch Triangle Historic District through the building's architectural expression and choice of building materials. Along the Causeway Street and Valenti Way elevations, the components of the new

construction are composed of a modern expression of a clearly defined base, middle, and top, an architectural framework found in buildings in both districts. This connection with the old is also expressed through the use of natural materials including brick, stone and pre-cast masonry.

3. Respect and respond to features such as size, scale, massing, color, and materials that give adjacent historic buildings and district their character. Respect the different proportions and scale of residential, commercial, and industrial buildings. The size of new details should respond to the proportions of neighboring historic features.

In addition to Parcel 1B, the Project site also includes the parcel of land at 88 North Washington Street. The inclusion of this small parcel provides an opportunity to strengthen the restored street wall of the city block by wrapping the new construction around to the existing commercial structure at 90 North Washington Street. The proposed new construction will also maintain the street wall along Causeway Street by locating the new construction on the same plane as the existing historic building. The ground floor of the new construction will feature large expanses of tall storefronts consistent with the character of the ground floors of other buildings within the block and the overall Causeway/North Washington Streets District.

The massing of the new construction has been designed to take into account the character of the surrounding former manufacturing/industrial buildings which consist of large commercial blocks with punched openings. The restored interior courtyard, historically located within the center of the block, will be used as an automobile entrance into the parking garage located on the second floor. This design will restore the historic layout of party walls along Causeway and North Washington streets while maintaining the rear exterior walls of the former commercial structures at 6-24 Medford Street and 90 North Washington Street. The height of the proposed new construction is addressed in Section 5.4.3. The use of different materials, building heights and setbacks enliven the elevations while maintaining the sense of rhythm created by other commercial blocks in the area.

Overall, the Project takes its cues from the surrounding commercial structures within the Causeway/North Washington Streets District, but presents the Project in a modern architectural expression. As Project plans develop, architectural details will also respond to features within the adjacent historic district.

4. At the street edge, use similar front setbacks (typically non-existent in the downtown area) to form a continuous edge along the street. Above the street, use similar building heights (and/or setbacks) to maintain the shape of the space enclosed by neighboring structures.

Along the restored street edges of Causeway, Beverly and North Washington streets and along Valenti Way, the proposed Project is designed to meet the street edge and

reinforce and extend the existing street walls within the Causeway/North Washington Streets District.

Specifically, along Causeway Street, the street wall of the existing Braman, Dow and Company Building is extended through to the new construction. The same is proposed adjacent to 90 North Washington Street. The Project has also been designed to be set back from the existing buildings at 6-24 Medford Street to prevent the new construction from being visible from Medford Street above the existing buildings. Although the new construction is taller than the height of the buildings on Causeway, Medford and North Washington streets, the setback reduces the daylight obstruction on Medford and Canal streets while creating a similar feeling of the pedestrian experience one finds on other streets within the Causeway/North Washington Streets District.

5. Respect existing roof and cornice lines that define the skyline of adjacent historic districts. When new buildings are taller, use materials, banding, cornice lines, and building setbacks to refer to predominant building heights in adjacent historic districts. Minimum building heights should also be considered.

The proposed Project will incorporate setbacks at various intervals along all elevations above the base of the building to provide variation to the elevations. Components of the new building will be further differentiated through the use of differently sized punched window openings and articulation of the facades through the use of traditional masonry materials and detailing, including horizontal banding, and more modern glass curtain wall elements. Architectural detailing of the overall Project will be more fully developed at the 60 percent design phase, but is anticipated to include moderately recessed window openings to provide shadow lines at all elevations, the use of strong horizontal banding, and architectural elements that minimize the appearance of vehicular entrances and exits to maintain a strong element of glass storefronts along the sidewalk.

6. Respect the distinctive horizontal levels that are typical of historic buildings, including an articulated base and top. For example, a common architectural pattern along the Central Artery alignment consists of first floor storefronts with a high proportion of transparent openings; a middle section of relatively solid masonry walls with punched openings; and a projecting cornice and/or contrasting top story.

The proposed new construction is consistent with this guideline. All components of the new construction contain a clearly defined base with a high proportion of transparent openings; the middle sections are typically characterized by solid vertical lines with regularly spaced punched opening; and the tops contain a flat and solid horizontal expression in a contrasting material and appearance.

7. Relate to the façade rhythm of elements such as door and window openings, perceived floor-to-ceiling height, proportion of window and door openings, and projections such as bay windows, cornices, and trim.

The Project has been designed to create richly detailed elevations as a method of bringing variety to the facades. Along the base of each elevation, the percentage of transparent openings is far greater than it is in the middle and top sections of the building. These larger expanses of openings along the base are consistent with the traditional storefront proportions found in other buildings within the Causeway/North Washington Streets District. The floor to ceiling heights, proportion of windows, and location and articulation of the top sections of the components similarly takes its proportion from the nearby warehouse and industrial structures in the District.

8. Acknowledge the rich layering of details that is characteristic of historic architecture and adds texture, light, shadow, and individuality to a building. Recognize both the variety and common themes of the historic architecture of downtown Boston, and respond to the particular context of each joint development parcel.

The character of the adjacent Causeway/North Washington Street District is reflected in the new construction. While individual components of the Project create a varied streetscape consistent with the adjacent historic district, the massing of the new base firmly establishes this Project within a pedestrian-friendly environment. The introduction of setbacks creating planes of light and shadow will be highlighted further as Project plans develop. Specific architectural details on elevations will also be refined.

# 5.3.1.2 Neighborhood Issues

Located within the Bulfinch Triangle Area, the Neighborhood Guidelines indicate new development on particular parcels should consider and respond to the historic resources in the area that merit protection. In addition, the activation of the ground floors on restored streets and pedestrian-oriented design is encouraged. This section describes how the proposed new construction is consistent with these principles.

Specifically, guidelines for Parcel 1B include a recommended height of 100 feet and a recommended minimum height of 60 feet. The guidelines recommend a minimum 20-foot set back along Causeway Street for those portions of buildings more than 65 feet in height.

The guidelines further recommend that building facades align with the back of the sidewalk at ground level to reinforce and continue the street wall. Along Causeway Street, which is restricted by a subsurface utility corridor, an open arcade (covered walkway) it may be necessary at the ground floor to allow access to these utilities.

The heights of proposed new construction range from 42 to 149 feet along Causeway Street; 42 to 149 feet on Beverly Street; and 106 to 144 feet along North Washington Street and Valenti Way. A 149 foot component immediately abuts the Braman, Dow and Company Building on Causeway Street but steps down to 42 feet extending into the center of the parcel. An open courtyard separates the buildings at 6-24 Medford Street from the 144 foot section of the building; and a 106 foot component immediately abuts the building at 90 North Washington Street. Although the height of the new construction exceeds the recommended 100 foot maximum height, the additional height is required to produce sufficient revenue to offset the cost of construction and to accommodate the necessary square footage to make the office and hotel uses financially viable. Please see the alternatives analysis (Section 5.4) for additional information. A 20 foot setback above 65 feet along Causeway Street is not possible as the Project requires a sufficient number of hotel rooms to be financially viable, which cannot be accommodated in a single-loaded corridor scenario. Two notches in the new construction are proposed from the height of the roof of the Braman, Dow and Company Building to the roof of the new construction to reference and reinforce the roofline of the adjacent historic building.

As noted above, the massing of the components of the building is designed to create interesting and varied elevations rather than a solid massive structure. Consistent with the guidelines, the building facades will align with the sidewalk at the ground level and will reinforce the street wall on Causeway, Beverly and North Washington streets and Valenti Way.

# 5.3.2 Shadow Impacts

New shadow impacts to historic resources is limited to a brief period of time during daylight hours. Minor net new shadow will be cast on the rear elevations and rooftops of the 6-24 Medford and 90 North Washington streets buildings at 12:00 p.m., 3:00 p.m. and 6:00 p.m. on the vernal equinox. Fleeting shadow also extends to the rooftops of buildings in the North End at 3:00 p.m. and 6:00 p.m. when much of the area is already in shadow. At 3:00 p.m. on the summer solstice, new shadow will fall on the rear elevations and rooftops of 6-24 Medford Street. These shadows will remain at 6:00 p.m. and will also extend across to one structure on North Washington Street in the North End Area. Fleeting new shadow from the Project will fall across the roof of 24 Medford Street and 90 North Washington Street at 9:00 a.m. at the autumnal equinox. At 12:00 p.m., new shadow falls on the rear elevations of 6-24 Medford Street and 90 North Washington Street. At 3:00 shadow will fall on rooftops of 239-245 p.m., Causeway, 6-24 Medford and 90 North Washington streets with a fleeting shadow across North Washington Street in the North End area. Shadow at 6:00 p.m. is limited to the roof of 90 North Washington Street and fleeting shadow on one building across North Washington Street; however, the majority of the area is already in shadow at this time. New shadow during the winter solstice is limited to fleeting shadow across the rooftop of 6-24 Medford Street, which will then extend to the roofs of 239-245 Causeway Street and 90 North

Washington Street by 12:00 p.m. New shadow extends across North Washington Street onto the façade of one building and the rooftops of other structures within the North End Area at 3:00 p.m. when the majority of the area is already in shadow.

New shadow from the Project is limited and will not have significant impacts on nearby historic resources. Shadow impacts are discussed in further detail in Section 3.2.

# 5.4 Alternatives Analysis

## 5.4.1 Existing and Proposed Site Considerations

The proposed Project has been designed to take into consideration existing site conditions associated with the Central Artery structures, as well as current market conditions. This section describes these conditions and impacts each has had on the proposed design. Unique characteristics of the Project site present challenges to the design process to make the Project financially and programmatically viable.

### 5.4.1.1 Below-grade Structures

The Project site includes a portion of the I-93 Northbound tunnel on the south side of the site and two stacked tunnels for on- and-off ramps to the I-93 Northbound tunnel. The presence of below-grade tunnels prohibits construction below the surface of this site of uses that are often located below ground, such as loading, parking and some mechanical equipment.

The Central Artery tunnels below the Project site can bear only a limited amount of weight from new construction above. During the due diligence phase of the Project, it was determined that the below-grade tunnels were closer to the surface of the Project site than previously identified. As a result, the Project must span trusses over the tunnels which are both expensive and consume great expanses of space within the Project site. The costs associated with construction over the tunnels must be offset by the revenues generated by the proposed Project.

#### 5.4.1.2 Adjacent Buildings

The Project site is bounded on the north by the Braman, Dow and Company Building and the structures at 6-24 Medford and 90 North Washington streets. The Proponent owns the Braman, Dow and Company Building at 239-245 Causeway Street as well as 90 North Washington Street.

Punched openings were added to the rear (south) elevation of the Braman, Dow and Company Building following demolition of the Beverly Street structures in the midtwentieth century, and large openings, some possibly fire doors between the portion of the building demolished for the elevated highway, are present at the east end of the south

elevation of the building. The rear wall will be restored to a party wall by abutting the new construction.

A one-story, former filling station building located at 88 North Washington Street, which will also be owned by the Proponent, abuts the east wall of the building at 90 North Washington Street. There are no window openings on the east wall of 90 North Washington Street. The small structure at 88 North Washington Street will be demolished, and the new construction will immediately abut the east wall of 90 North Washington Street. The existing windows on the rear (south) elevation will be retained within the courtyard area of the proposed Project.

Consistent with the historical development of this city block, the rear elevation of the buildings at 6-24 Medford Street will be located within the central courtyard created by the new construction. No alterations to the rear elevations of these buildings are proposed.

#### 5.4.1.3 Office/Hotel Uses

An office use requires an approximately thirteen foot floor-to-floor height. Hotel uses require a ten foot floor-to-floor height. Nine floors of office are proposed at the east end of the site and nine floors of hotel rooms are proposed on the west end of the site with an additional level at the third floor for the hotel lobby and ancillary hotel uses. To provide adequate light and air and usable floor plates, the office floors are laid out to provide wide open floor spaces serviced by a single central elevator and service core on each floor. A secondary egress stair is located at the east end of the building and is accessed by a rear corridor serving the east side of the office component of the building.

Two hotels will be constructed at the site: one an extended stay hotel and the other a storm-term stay hotel. The two types of hotels require separate elevator cores. Within the hotel component, hotel rooms are located on each side of a central corridor serviced by two elevators and service cores, one in each wing of the hotel component. On hotel room floors, the massing of the building is dictated by the need for exterior windows, to provide light and air into each hotel room, created through the use of a double loaded corridor.

The size and shape of the Project site and location of loading and parking on the interior of the city block requires that the office component have a single entrance on Beverly Street. The ground level lobby connects to the upper level elevator cores which extend though the second floor parking level. On the hotel side of the Project, guests enter into a porte cochere and the hotel lobby under the main mass of the building. Elevators provide access to the third floor hotel lobby and extend through the second level parking floor.

### 5.4.1.4 Parking, Loading and Access Requirements

Sufficient parking to meet the needs of the hotel use is required on site. Since no parking can be constructed below-grade due to the presence of the Central Artery tunnels, parking is proposed on the second level of the new construction. By locating the parking on the

second level, the ground floor spaces can be used for retail uses to activate the pedestrian experience along Causeway and Beverly streets and Valenti Way. Parking is accessible via an up and down ramp within the center of the building and is accessible from the porte cochere off of Beverly Street.

To minimize the impact of loading on the restored pedestrian experience, loading for the proposed Project will be located within the center of the city block. Access to loading is located off of Valenti Way, adjacent to 88 North Washington Street, through a ground level tunnel below the office section of the building. These back-of-house functions have been located within the center of the block and access to these areas has been designed to minimize the impact of these necessary uses on the pedestrian experience along public facades of the building.

### 5.4.2 Detailed Project Design

The proposed design of the new construction and its association with the adjacent structures in the Causeway/North Washington Streets District is described in this section.

## 5.4.2.1 Setback from Adjacent Buildings

The new building will abut the existing buildings at 239-245 Causeway Street and 90 North Washington Street along the property lines leaving a nominal six-inch seismic gap between the buildings. A code-required fire-rated demise is required at the new building's ground through fifth floors along the property lines. The new construction has been designed to align with the existing buildings along the rear edge of the sidewalk and immediately abut these buildings to reinforce the streetwall and provide sufficient square footage to make the Project viable.

### 5.4.2.2 Architectural Design of New Construction

The perspective views included in Appendix A depict preliminary views of the body of the new building as a red brick façade with recessed windows in the office section of the building. This treatment is proposed to link the new construction literally and visually to the existing Causeway/North Washington Streets District masonry building facades. The upper office floors, set back from Valenti Way and Beverly and North Washington streets, are distinguished by a change of material from brick to a glass curtain wall system. This treatment creates a strong top to the façade composition and mitigates the building height relative to its immediate neighbors.

To maintain a regularity of ground floor storefronts, the office entry is highlighted by a monumentally-scaled, three-story glass curtain wall with an inset entrance vestibule set beneath an overhang. The hotel entrance is located within the porte cochere, allowing retail and restaurant uses to dominate the elevations of the new building. Vehicular entrances are limited to one-story at the ground level, thereby reducing their impact on the rhythm of the ground floor storefronts.

The architectural framework of base, middle and top found in the adjacent historic district is articulated in the new construction with a clearly distinguished base created by a cast stone horizontal string course running along the North Washington Street, Valenti Way and Beverly Street elevations above the third floor. Along Causeway Street, the base of the building is articulated through the third floor by the use of various window types. The middle section of the building along this elevation is identified through its use of recessed vertical bays with each floor articulated in brick and detailed with cast stone bands at each floor level, and the top is defined by a wide horizontal band, reminiscent of the wide cornices in the adjacent historic district, at the parapet. The setback vertical bays of the middle section and the defined parapet at the top extend around to Beverly Street in the hotel portion of the building. The office section of the building is differentiated in both height and material at mid-block through the use of a wide vertical bay of glass curtain wall which extends horizontally above the lower masonry middle portion of the office building along the ninth, tenth and eleventh floors. At the top of the masonry middle portion, a wide parapet band, similar to that in the hotel section, creates the top portion of this section.

Overall, the use of traditional masonry materials and regularly-spaced openings and the orientation of the facades to incorporate a traditional base, middle and top allow this simple, yet richly detailed masonry building, to read as a new structure incorporating more modern glass curtain wall systems into the new building while remaining in concert with its immediate existing neighbors.

### 5.4.2.3 Cornerstone

The proposed Project will include a dated cornerstone facing a public right-of-way within the new construction to identify the date of construction for future generations.

### 5.4.3 Consideration of Alternatives

Alternatives to avoid, minimize, or mitigate adverse effects to the Causeway/North Washington Streets and Bulfinch Triangle districts have been considered by the Proponent. The Proponent undertook a series of studies to reduce the size of the proposed Project to a maximum building height of 100 feet and a minimum building height of 60 feet as anticipated in the 2002 JDG and to include additional the 20 foot setback along Causeway Street above 65 feet. The results of these studies are summarized in this section.

#### 5.4.3.1 Reduction to 60 to 100 feet in Height

The Proponent considered reducing the height of the proposed new construction to 100 feet, the recommended maximum height identified in the JDG. This was determined to be infeasible. To reduce the proposed height of the project from 149 feet (not including the rooftop mechanicals) to 100 feet, the square footage devoted to hotel, office and retail must be reduced.

Reduction in the square footage of hotel uses and office space was not considered a prudent and feasible alternative. As described above, the uses of the Project require sufficient square footage and floor layouts to accommodate the proposed uses, and the Project is not financially viable without the proposed square footage. The specific Project uses were chosen in part to address the desire of the community to have a balance of office and residential uses within the Bulfinch Triangle. This creates a better balance of uses by including a significant office component.. As shown in the building plans and sections, the hotel and office components of the Project must be separated due to their differing uses. In addition, the office building requires, to the maximum extent possible, a double loaded corridor to maximize the square footage of office space. One wing of the office section is already reduced to a single loaded corridor, thereby reducing leasable square footage, to avoid blocking existing windows on the rear elevation of 90 North Washington Street. Similarly, the hotel section requires a double loaded corridor to provide a sufficient number of hotel rooms and the required exterior windows for light and air. Due to the number of hotel rooms for each section of the hotel (long- and short-term) and the separate clientele associated with each, the form taken by the hotel requires two separate wings, each with an elevator core and emergency egress stairs.

The available square footage for office and hotel uses is limited by the setback required to provide fire separation and adequate light and air to rear elevations of 6-24 Medford Street and 90 North Washington Street. In addition, as much massing of the new construction above the Medford Street buildings as possible has been held back from the center of the block to minimize the visibility of the new construction from within the Causeway/North Washington Streets District. To reduce the height of the Project to 100 feet, four levels of office and five levels of hotel rooms would be removed, leaving only five floors of usable office space, six floors of hotel rooms, and one level for the hotel lobby. Although a reduction in office space and hotel rooms would concurrently reduce the parking needed to serve the Project site, it would not significantly diminish the height of the ground through second floors due to the presence of the parking ramps and would not provide sufficient revenue to offset the cost of construction. Therefore, a reduction in office space and hotel rooms is not a viable alternative.

### 5.4.3.2 Reduction to between 101 and less than 149 feet in Height

Although any Project over 100 feet would exceed the height limit identified in the JDG, consideration was given to reducing the height of the proposed Project to between 101 and less than 149 feet after determining that reducing the height to 100 feet was infeasible. To meet this goal, the size of the hotel and the square footage of office and retail spaces must be reduced. This option was determined to be infeasible.

## Reduction in Hotel Space

If the number of floors for the entire hotel were reduced, the reduction in square footage would not reduce the size of the entrance/lobby, porte cochere and two required elevators

and egress stairs, due to the layout of the building into two wings, but would reduce the size of the mechanicals and number of parking spaces dedicated to this use. The proposed restaurant uses could be omitted from the Project, and the hotel lobby relocated to the first floor, thereby freeing up the third level for hotel uses; however, this additional square footage would not be sufficient to make the Project viable due to the loss of a substantial number of hotel rooms. In addition, the omission of the restaurant uses along the ground floor would diminish the pedestrian experience on this prominent corner of Causeway Street.

Consideration was given to reducing the height of only the hotel wing adjacent to 239-245 Causeway Street; however, this alternative would require the omission of too many hotel rooms to make the Project financially viable. Omitting the restaurant use along Causeway Street for use as the hotel lobby was also considered in this scenario; however, this option was infeasible for the same reasons discussed above.

# Reduction in Office Space

A reduction in the square footage of office space was considered to reduce the height of the Project. As described in Section 5.4.3.1, any reduction in office space is not financially viable as the revenue produced from the proposed square footage of office space is necessary to offset the additional costs associated with constructing over two Central Artery tunnels. A reduction in office space makes the Project infeasible. Although one floor of office could be located on the ground floor by omitting the proposed retail uses, this alternative would only reduce the height of the new construction by approximately 12 feet and would diminish the pedestrian experience along Beverly Street, Valenti Way and North Washington streets, which this Project, together with the new construction on other nearby Central Artery Parcels, will reconnect the Bulfinch Triangle Historic District with the Causeway/North Washington Streets District and the North End.

#### 5.4.3.3 Introduction of Setbacks along Causeway Street

Consideration was given to including a setback of 20 feet for those sections over 65 feet in height along Causeway Street. This was determined to be infeasible. A 20 foot setback along Causeway Street above the sixth floor would require the relocation of the Causeway Street wing further back into the center of the Project site. This reorientation of hotel rooms would result in the loss of too many hotel rooms to make the Project viable. Specifically, the available square footage provided in this scenario reduces the length of the double loaded corridors allowing access to the reduced number of hotel rooms. If only a single loaded corridor was provided along Causeway Street, this option would also result in too few hotel rooms to make the Project viable.

# 5.5 Coordination of Design Review

As noted above, the redevelopment of Parcel 1B requires review by the MHC and BLC in compliance with Section 106. As noted in Stipulation 5 of the MOA and in Part 1 of the design guidelines, the MHC and BLC will be afforded the opportunity to review and approve preliminary, final, and construction specifications for joint development ventures for consistency with the design guidelines, as they affect historic resources. The preliminary design plans included in this document are provided to the MHC and BLC as the first (preliminary) review of the proposed Project design. The Proponent anticipates continued design review with these agencies as Project plans are developed.

The Proponent intends to continue consultation with the MHC, BLC and FHWA to address the adverse effects associated with the proposed Project.

# 5.6 Proposed Mitigation

The MHC and the BLC will be afforded the opportunity to review and comment on the plans at the 60 and 90 percent design levels for the proposed new construction on the Project site.

Chapter 6.0 Infrastructure Component

# 6.0 INFRASTUCTURE COMPONENT

The Project will connect to existing municipal and private utility company systems in the adjacent public streets of Valenti Way and Beverly Street. This chapter evaluates the infrastructure systems that will support the Project. Based on initial investigations and consultations with the appropriate agencies and utility companies, existing infrastructure systems are adequately sized to accept the incremental increase in demand associated with the development and operation of the Project. The following utilities were reviewed: wastewater, water, drainage, natural gas, electricity, and telecommunications. In addition, consideration was given to sustainable elements of the energy supply provision for the Project. Appendix E includes a site survey.

The final design process for the Project will include required engineering analyses and will adhere to applicable protocols and design standards, ensuring that the proposed building is properly supported by the City's infrastructure. Detailed design of the Project's utility systems will proceed in conjunction with the design development of the buildings and interior mechanical systems.

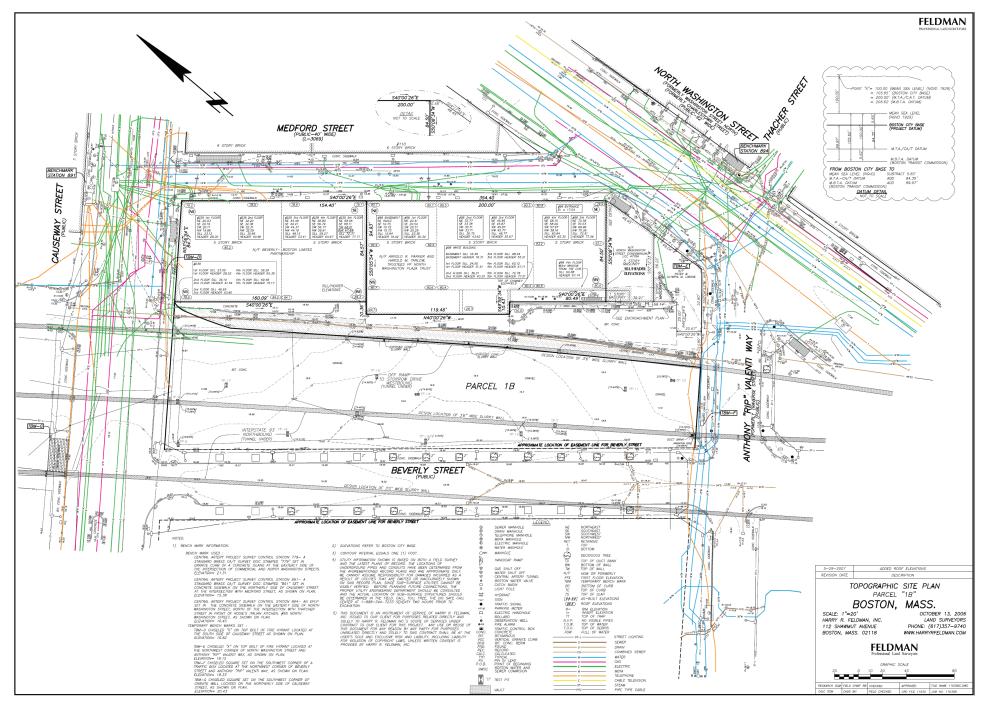
The systems discussed below include those owned and managed by the Boston Water and Sewer Commission, private utility companies, and on-site infrastructure systems. There will be close coordination among these entities and the Project engineers and architects during subsequent reviews, and the design development process. Figure 6-1 depicts the existing utilities infrastructure.

All improvements and connections to the BWSC infrastructure will be reviewed by the BWSC as part of its Site Plan Review Process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity, and establishment of water and sewer service accounts.

# 6.1 Regulatory Framework

This chapter, in addition to a description of existing and future infrastructure connections, discusses the regulatory framework of utility connection reviews and standards. All connections will be designed and constructed in accordance with city, state and federal standards.

- ♦ In the City of Boston, the BWSC is responsible for the majority of water, sewer and storm water drainage systems.
- ◆ The Boston Fire Department (BFD) will review the Project with respect to fire protection measures such as siamese connections and standpipes.
- Design of site access hydrant connections and energy systems (gas and electric) will also be coordinated with the respective system owners, such as National Grid and NSTAR.





- ◆ The Boston Public Works Department will authorize new utility connections through the street opening permit process, as required.
- ◆ Additional information on the regulatory framework for each utility system is included in subsequent sections of this chapter.

A more complete list of the state and local permits anticipated in connection with the Project infrastructure is included above in Section 1.8.

### 6.2 Wastewater

# 6.2.1 Existing Wastewater

Local sanitary sewer service in the City of Boston is provided by the BWSC. The Project site will be serviced by the combined sewer system at Valenti Way and North Washington Street. There is no sanitary sewer available in Beverly Street.

#### 6.2.2 Demand Use

The Project consists of approximately 444,000 square feet of building space as listed below. A total sewer generation of 62,815 gallons per day (gpd) is expected for the proposed building program. Generation rates are based on wastewater flow design criteria included in the Massachusetts Department of Environmental Protection 310 CMR 15.203: *The State Environmental Code (Title 5).* The Project is also expected to generate demand for "blow down" from cooling systems operations, which is included in the total wastewater generation as shown.

Table 6-1 Projected Wastewater Flows

Use	Program	Generation Rate	GPD
Short-term Hotel	153 rooms	110 gpd / room	16,830
Long-term Stay Hotel	121 rooms	110 gpd / room	13,310
Office	213,000 sf	75 gpd / 1,000 sf	15,975
Retail	19,000 sf	50 gpd / 1,000 sf	950
Restaurant	450 seats	35 gpd / seat	15,750
TOTAL			62,815

# 6.2.3 Proposed Connection

The sewer connection will be made on the BWSC 48-inch combined sewer near the intersection of Valenti Way and North Washington Street by means of a 12-inch gravity sewer pipe to be positioned in the Service Road area east of the new building, and behind 98 North Washington Street and 239 Causeway Street. Sanitary sewers cannot be installed in Beverly Street because of the height of the underground Central Artery tunnel structure.

The Proponent will coordinate with the BWSC and the necessary agencies on the design and capacity for proposed connections to the sewer system. In addition, the Proponent will submit a General Service Application and Site Plan, for review as the Project progresses.

Since the projected flow rate of wastewater generated is greater than 50,000 gallons per day, the Project is subject to the DEP requirements for submitting a *Sewer System Extension Permit Application Form WP 74*.

#### 6.3 Domestic Water and Fire Protection

## 6.3.1 Existing Water Supply System

Water for domestic and fire supply purposes will be obtained from the BWSC. There are two different water systems serving the Project area. The southern low service system with a typical pressure range of 50 to 60 psi is located in North Washington Street and Valenti Way. The southern high service system with a pressure range of 90 to 100 psi is also located in North Washington Street and Valenti Way. There are no water mains in Beverly Street.

### 6.3.2 Demand / Use

Domestic water demand is based on estimated wastewater generation with an added factor of ten percent for consumption, system losses and other uses. Based upon the wastewater generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203, the Project will require approximately 69,100 gallons per day for domestic water supply purposes.

#### 6.3.3 Proposed Connections

The Project will require a minimum of two connections – one for domestic from the BWSC low service system in Valenti Way, and a second connection for fire supply purposes from the BWSC high service system also in Valenti Way. The Proponent of the Project has discussed the installation of multiple meters for different portions of the building with the BWSC.

Compliance with the standards for the water main connections for domestic and fire supply purposes will be reviewed as part of BWSC's Site Plan Review Process. This review will include, but is not limited to, sizing of the domestic and fire supply protection services, calculation of meter sizing, backflow prevention design, and locations of hydrants and siamese connections conforming with the BWSC and BFD requirements.

### 6.4 Storm Water Management

Since the majority of the Project is currently impervious to rainfall percolation, construction of the Project will not produce significant changes in either the pattern of, or increase the

rate of, storm water runoff. Storm water management controls will be established in compliance with BWSC standards, and the Project will not result in the introduction of any peak flows, pollutants or sediments that would potentially impact the local BWSC storm water drainage system.

## 6.4.1 Existing Conditions

The Project site was formerly used for an elevated roadway section of the Massachusetts Turnpike Authority Central Artery Interstate Route 93. Storm water runoff from this portion of the elevated highway was discharged into the BWSC combined sewer system at several locations. As part of the Central Artery/Tunnel Project Mitigation Program, and on behalf of the City of Boston, the Massachusetts Turnpike Authority constructed new 54-inch diameter storm drain adjacent to the Project site to divert storm water flows away from the BWSC combined sewer system. Even though the previous surface characteristics of this site was completely impervious, portions of the undeveloped site contain temporary grass cover.

# 6.4.2 Proposed Conditions

Storm water runoff from the Project site will be directed to the existing BWSC drainage systems in adjacent public streets – Beverly Street and Valenti Way) and to the 54-inch diameter storm water drainage pipe located within an on-site easement east of Beverly Street at the rear of 239 Causeway Street and 98 North Washington Street. This BWSC storm drain discharges into Boston Harbor in the vicinity of Lovejoy Wharf. Based on initial investigations, this drainage system is adequately sized to accept the incremental increase of storm water from the Project site.

The Proponent is planning installation of green roofs on the buildings, which will help to reduce peak runoff flow rates and improve storm water quality. Storm water generated from the proposed green roof and landscaped areas will be collected by area drains on site and conveyed to the BWSC storm drains within a private sub-surface drainage system.

The BWSC will review and evaluate the impacts of storm water connections to its system under its Site Plan Review Process. The Proponent will submit a Storm Water Management Program to the BWSC. The estimated existing runoff and future storm water flows for the site are summarized below in Table 6-2.

Table 6-2 Storm Water Runoff

	2-year Storm	10-year Storm	24-year Storm	100-year Storm
Estimated Existing Runoff (cfs)*	3.6	4.7	5.5	10.4
Projected Future Runoff (cfs)	4.0	5.2	6.1	11.5

<sup>\*</sup> cfs = cubic feet per second

The BWSC will review and evaluate the impacts of storm water connections to its system under its Site Plan Review Process. Storm water management controls will be established in compliance with BWSC standards; the Project will not introduce any increased peak flows, pollutants or sediments that would potentially impact the Boston Harbor. In conjunction with the Site Plan and the General Service Application, the Proponent will submit a Storm Water Management Plan to BWSC. Compliance with the standards for the final site design will be reviewed by the BWSC under the Site Plan Review Process.

# 6.4.3 Compliance with MassDEP Storm Water Management Policy

The Project will comply with the requirements of the MassDEP Stormwater Management Policy as follows:

Standard No. 1: Untreated Storm Water

*Compliance*: The Project will provide treatment of runoff from service roads, entrance-ways by means of catch basins.

Standard No. 2: Post-Development Peak Discharge Rates

*Compliance*: The impervious characteristic of the post-development site will be the same as the historical pre-existing conditions. The post-development runoff rate will exceed the pre-development rate to Boston Harbor.

Standard No. 3: Recharge to Groundwater

*Compliance*: Since most of the Project site will be developed over the existing Interstate 93 Highway Tunnel structure, it is doubtful that groundwater recharge is feasible.

Standard No. 4: 80 Percent Total Suspended Solids Removal

*Compliance*: Storm water runoff will be directed to catch basins prior to discharge into the BWSC storm drainage system.

Standard No. 5: Higher Potential Pollutant Loads

Compliance: The Project site does not contain land uses with higher potential pollutant loads.

Standard No. 6: Protection of Critical Areas

*Compliance*: The Project site does not contain critical areas.

Standard No. 7: Redevelopment Projects

Compliance: The Project will meet or exceed these standards.

Standard No. 8: Erosion / Sediment Controls

*Compliance*: Construction contracts will include requirements for erosion and sediment controls, including silt fences, straw bales, catch basin filter sacks. Construction dewatering discharges will comply with National Pollutant Discharge Elimination System (NPDES) and City of Boston dewatering standards.

Standard No. 9: Operation / Maintenance Plan

Compliance: The Project team will prepare an Operation and Maintenance Program for both the construction and post-development phases of the Project to minimize movement of sediment and pollutants off-site. Typical requirements during the Construction Phase will include removal of excess soils from the site, routine street sweeping, catch basin cleaning and cleaning of catch basin filter sacks. A truck and trailer wheel wash station will be established during construction at the Work Zone exit area to minimize transport of construction materials off site.

#### 6.5 Anticipated Needs

The Project will connect to existing public and private utilities in Beverly Street, Valenti Way and Causeway Street. The Project will require the following utility connections:

<u>Utility Service</u>	Connection Location
Domestic Water	BWSC 20-inch low service in Valenti Way
Fire Supply Connection	BWSC 16-inch high service in Valenti Way
Sanitary Sewer Connection	BWSC 48-inch combined sewer in North Washington Street

Utility Service Connection Location

Communications Comcast and Verizon in Valenti Way

Verizon in Valenti Way / North Washington Street

Electric Power NSTAR network at Valenti Way &

North Washington Street

Natural Gas National Grid – (Keyspan) 6-inch intermediate pressure

service North Washington Street

Based on initial investigations, the existing utility infrastructure systems have adequate capacity for the new service connections. Coordination meetings with the various utility companies will be conducted during Design Development.

#### 6.6 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities and drainage improvements within public ways will be in accordance with the BWSC, the Boston Public works Department, the Dig Safe program and governing utility company requirements. All necessary permits will be obtained before the commencement of work. Specific methods for constructing proposed water sewer and drainage systems will be reviewed by the BWSC as part of the Site Plan Review Process.

Coordination with Other Governmental Agencies / Public Review Process

# 7.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES / PUBLIC REVIEW PROCESS

#### 7.1 Community Outreach

The Proponent is committed to effective community outreach and will continue to engage the community to ensure public input on the Project. It should be noted the Proponent was designated as developer of Central Artery Parcel 1B by the Massachusetts Turnpike Authority following a public Request for Proposal process which included numerous public presentations and meetings. More recently the Proponent has met with the Downtown North Association, and has also reached out to immediate abutters including the BTCAC cochairs of West End, Strada 234 and West End Council/West End Place. The Proponent has also met with the Boston Redevelopment Authority (BRA).

#### 7.2 Architectural Access Board Requirements

The Project will comply with the requirements of the Architectural Access Board and will be designed to comply with the standards of the Americans with Disabilities Act.

### 7.3 Massachusetts Environmental Policy Act (MEPA)

The Project is subject to environmental impact review by the Massachusetts Environmental Policy Act (MEPA) Office of the Massachusetts Executive Office of Energy and Environmental Affairs. An expanded Environmental Notification Form will be filed.

#### 7.4 Massachusetts Historical Commission

The redevelopment of Parcel 1B requires review by the Massachusetts Historical Commission (MHC) and Boston Landmarks Commission (BLC) in compliance with Section 106. As noted in Stipulation 5 of the MOA and in Part 1 of the design guidelines, the MHC and BLC will be afforded the opportunity to review and approve preliminary, final, and construction specifications for joint development ventures for consistency with the design guidelines, as they affect historic resources. The preliminary design plans included in this document are provided to the MHC and BLC as the first (preliminary) review of the proposed Project design. The Proponent anticipates continued design review with these agencies as Project plans are developed.

The Proponent intends to continue consultation with the MHC, BLC and Federal Highway Administration (FHWA) to address the adverse effects associated with the proposed Project.

### 7.5 Other Permits and Approvals

#### Boston Civic Design Commission

The Project will comply with the applicable provisions of the Boston Zoning Code. The PNF will be submitted to the Boston Civic Design Commission as part of the Article 80 process.

#### **Boston Landmarks Commission**

The Project is subject to review by the Boston Landmarks Commission (BLC) in their role as a signatory to the Section 106 Memorandum of Agreement described in Section 7.4.

The proposed Project is also subject to review by the Boston Landmarks Commission through the Boston Environment Department. The PNF will be submitted to the BLC as part of the Article 80 process.

An application is also being submitted to the BLC concurrently with this filing for review of the proposed demolition of the one-story, ca. 1929 structure at 88 North Washington Street in compliance with Article 85 of the Boston Zoning Code, Demolition Delay.

#### Other Permits

Section 1.8 provides a list of agencies from which permits and approvals for the Project may be sought.

Chapter 8.0 Project Certification

### 8.0 PROJECT CERTIFICATION

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

Signature of Proponent's Representative

Richard Wakeman, Jr. Boston Development Group 93 Union Street, Suite 315 Newton Centre, MA 02459

Signature of Preparer

6/21/08

Laura Rome Epsilon Associates, Inc. 3 Clock Tower Place, Suite 250 Maynard, MA 01754

Dato

Floor Plans, Elevations, Sections, and Perspectives

CAUSEWAY STREET

parcel 1b, boston, ma

CAUSEWAY STREET

parcel 1b, boston, ma

parcel 1b, boston, ma

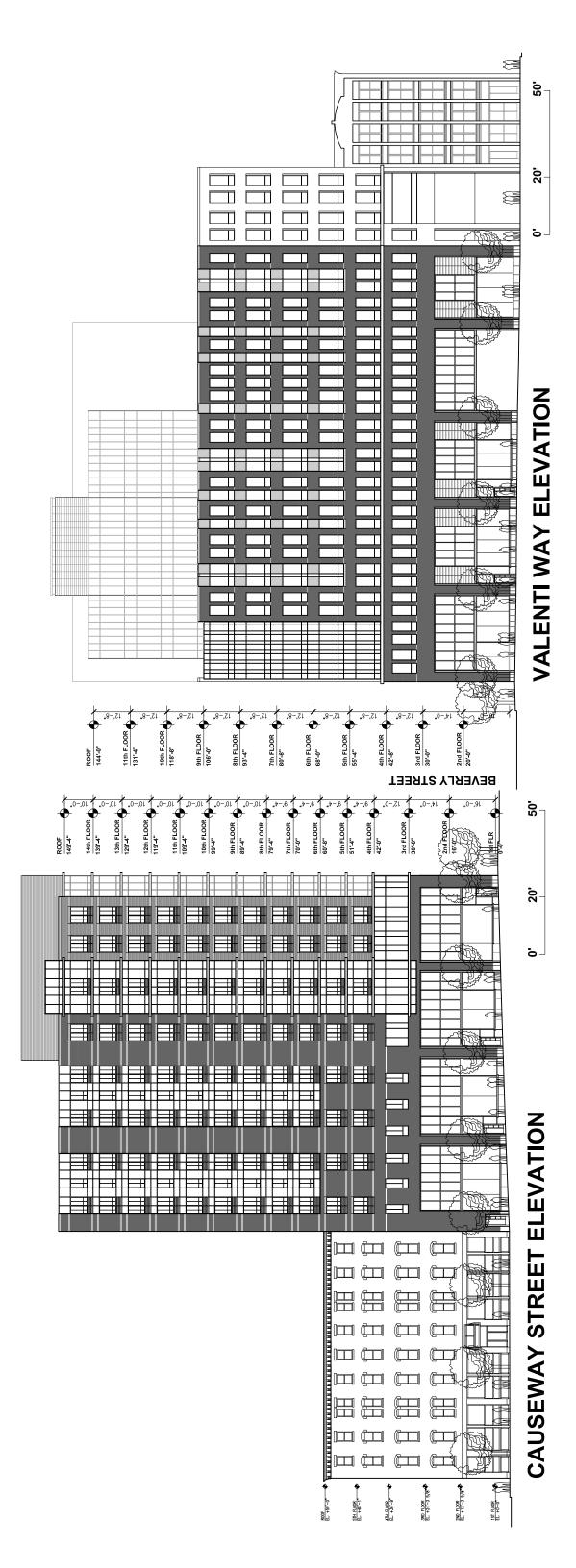
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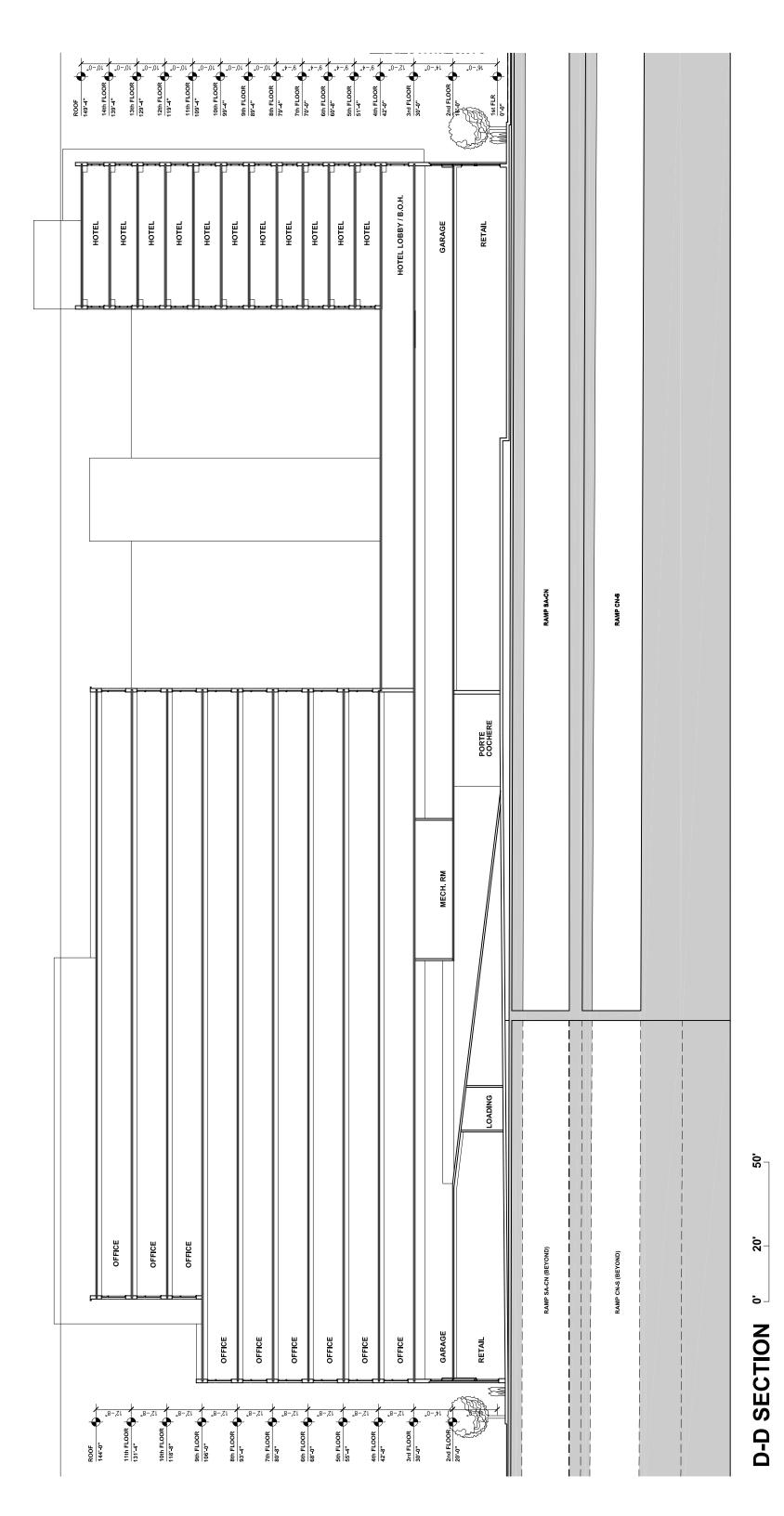
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VATION **BEVERLY STREET ELEV** 



parcel 1b, boston, ma elevations

parcel 1b, boston, ma sections



perspective at corner of Causeway street and Beverly Street





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Transportation Appendix

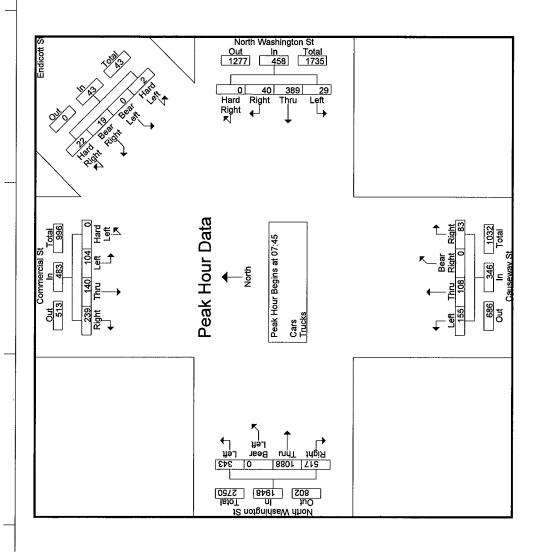
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0 104 140 239 483 2 0 19 22 43 29 389 40 0 458 155 108 0 83 0 215 29 495 47 0 44,2 51,2 6.3 84,9 8.7 0 44,8 31,2 0 24	08:30	0	24	27	20	121	0	0	7	œ	15	7	100	10	0	117	47	22	0			0	0 26			
0 21.5 29 49.5 4.7 0 44.2 51.2 6.3 84.9 8.7 0 44.8 31.2 0	Total Volume	0	104			483	2	0	19	22	43	29		40	0	458	155	108	0			343	1088	8 517		
	% App. Total	0	21.5	29	49.5		4.7	0	44.2	51.2		6.3	84.9	8.7	0		44.8	31.2	0	24	17	9	55.			



N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way City/State: Boston, MA Weather: Clear

File Name : 61880001 Site Code : 61880001 Start Date : 8/1/2007

Page No : 1

Groups F	rinted-	Cars -	Trucks
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	N		ington ( North	St			her St East		N	l Washi From	ngton : South	St			ti Way West			į.	
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07:00	17	192	0	16	0	0	0	7	50	124	10	1	0	0	0	6	30	393	423
07:15	10	217	1	30	0	0	0	18	60	111	9	1	0	0	0	14	63	408	471
07:30	11	247	4	42	0	0	0	15	64	120	14	2	0.	0	0	7	66	460	526
07:45	15	262	4	52	0	0	0	15	83 257	151 506	14 47	0 4	0	0	0	12 39	79 238	529 1790	608 2028
Total	53	918	9	140	U	U	U.	55	237	200	41	** }	U	U	U	39	200	1130	2020
08:00	10	274	2	58	0	0	0	23	72	144	15	1	0	0	Ò	. 8	90	517	607
08:15	17	256	4	58	Ō	Ō	0	25	71	146	8	0	0	0	0	8	91	502	593
08:30	3	288	2	49	0	0	0	15	66	157	11	2	0	0	0	10	76	527	603
08:45	17	225	6	45	0	0	0	27	61	142	4	3	0	0	0		82	455	537
Total	47	1043	14	210	0	0	0	90	270	589	38	6	0	0	Ō	33	339	2001	2340
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09:00 09:15	15	212	7	26	: 0	Õ	ő	12	72	163	10	4	ő	ŏ	ŏ	13	55	479	534
09:30	12	204	7	28	ŏ	ō	0	12	51	113	7	1	õ	Ō	0	3	44	394	438
09:45	18	163	5	7	0	0	0	19	44	116	7	0	0	0	0	7	33	353	386
Total	57	805	23	109	0	0	0	79	209	519	35	5	0	0	0	41	234	1648	1882
40.00		400		00	•		•	40	: én	445	E	Á.	0	0	0	7	51	344	395
10:00	22	138 124	4 2	32 27	0	0	0	12 10	60 58	115 130	5 7	0	0	0	0	6	43	332	375
10:15 10:30	11 9	130	6	15	0	ő	ő	16	54	115	5	Ö	ŏ	ő	ŏ	4	35	319	354
10:45	5	154	6	22	Ö	Ö	.0	17	50	117	6	1	ō	Ŏ	õ	10	50	338	388
Total	47	546	18	96	0	0	0	55	222	477	23	1	0	0	0	27	179	1333	1512
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11:00	20	145	2	15	0	0	-0	17	65	124	5	1	0	0	0	5	38	361	399
11:15	13	123	6	13	0	0	0	22	69 56	148	10	0	0	0	0	7 10	42 51	369 370	411 421
11:30	16 9	171 112	4 8	16 9	0	0	0	21 15	20 45	116 134	7 6	4 6	0	0	0	14	44	314	358
11:45 Total	58	551	20	53	0	0	0	75	235	522	28	11	0	0	ő	36	175	1414	1589
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12:00	16	151	3	53	0	0	0	18	51	114	9	5	0	0	0	16	92	344	436
12:15	17	161	7	40	0	0	0	14	72	136	6	0	0	0	0	9	63	399	462
12:30	10	157	4	77	0	0	0	30	56	127	9	0	0	0	0	5	112	363	475
12:45	16	169	6	61	0	0	0	26	56	118	<u>7</u> 31	0 5	0	0	0	5 35	92 359	372 1478	464 1837
Total	59	638	20	231	0	0	U	88	235	495	34	5	U	Ū	U	33	309	1410	1031
13:00	9	167	3	77	0	0	0	32	68	139	16	1	0	0	0	11	121	402	523
13:15	9	164	ő	44	ō	Ö	Ō	31	56	136	5	0	0	0	0	16	91	370	461
13:30	14	143	6	47	Ö	0	0	25	59	112	5	0	0	0	0	12	84	339	423
13:45	11	171	3	45	0	0	0	34	53	124	6	0	0	0	0	9	88	368	456
Total	43	645	12	213	0	0	0	122	236	511	32	1	0	0	0	48	384	1479	1863
14:00	14	168	4	46	0	0	0	30	65	143	8	0	0	0	0	23	99	402	501
14:15	19	165	4	51	0	0	ŏ	36	74	131	6	ŏ	ő	ŏ	ō	20	107	399	506
14:30	27	182	3	21	ő	Õ	õ	29	56	143	9	ō	Õ	ō	Ō	12	62	420	482
14:45	19	220	6	23	0	0	0	17	70	136	8	0	0	0	0	8	48	459	507
Total	79	735	17	141	0	0	0	112	265	553	31	0	0	0	0	63	316	1680	1996
45.00	7	223	o	21	0	0	0	20	65	152	13	0	0	0	0	4	45	468	513
15:00 15:15	7 14	223 256	8 3	29	0	0	0	41	63	162	15	Ö	ő	0	0	10	80	513	593
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Total	40	992	20	118	0	0	0	111	278	634	42	0	0	0	0	31	260	2006	2266
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16:00	11	255	5 2	22	0	0	0	25 30	57 77	145	1 <u>2</u> 9	0 }	0	0	0	8 19	55 87	485 516	540 603
16:15 16:30	8 15	251 261	3	38 34	0	0	0	15	68	169 167	6	0 .	0	0	0	4	53	520	573
16:45	21	274	3	58	Ö	ő	0	47	78	162	10	ő	Ö	0	ő	9	114	548	662
Total	55	1041	13	152	ŏ	ő	ō	117	280	643	37	Ö	0	Ö	ŏ	40	309	2069	2378
																		<b>5</b>	
17:00	19	245	2	83	0	0	0	33	68	189	4.	0	0	0	0	19	135	527	662
17:15	16	264	0	50	0	0	0	32	84	210	9	0	0	0	0	14	96	583	679 615
17:30	18	219	2	60	0	0	0	27 34	56 55	20 <b>5</b> 225	9 7	0 :	0	0	0	19 16	106	509 563	615 677
17:45 Total	17 70	258 986	<u>1</u> 5	64 257	0	0	0	126	55 263	829	29	0	0	0	0	16 68	114 451	2182	2633
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% Cars	97.7	91.1	83.6	100	0	0	0	100	90.8	89.7	96.2	100	0	0	0	100	0	Ó	92.2	š
Trucks	14	788	28		0	0	0		253	648	14		0	0	0	i S. C. e. O. gennin de la com-	0	0	1745	1
% Trucks	2.3	8.9	16.4	0	0	0	Ó	0	9.2	10.3	3.8	0	0	0	0	0	0	0	7.8	

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	:	N Wash	nington S	t		Thac	cher St			N Wasl	nington	St		Vale	nti Way		
			1 North			Fror	n East		1	From	South			Fron	ri West		
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Tota
Peak Hour Anal	ysis Fro	m 07:00	to 12:30	- Peak 1	of 1				M. r. c. a. m. a. m. m. re-tu-	entractual conference	*****	hamman de alle de la companie de la	To a construction of	han and a country than the country of the game,		t at a de discourant à serie serie	Na sanci wa sine a ameeo
Peak Hour for E	ntire In	tersectio	n Begins	at 07:45													
07:45	15	262	4	281	0	0	0	0	83	151	14	248	0	0	0	0	52
08:00	10	274	2	286	0	0	0	0	72	144	15	231	0	0	0	0	51
08:15	17	256	4	277	0	0	0	0	71	146	8	225	0	Ö	0	Õ	50
08:30	3	288	2	293	0	0	Ô	0	66	157	11	234	0	Ŏ	Ŏ	Ŏ	52
Total Volume	45	1080	12	1137	Ō	0	0	Ô	292	598	48	938	0	Õ	Ö	.0	207
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eak Hour Analy	vsis Fro	m 07:00	to 12:30	- Peak 1	of 1											-	
eak Hour for E					•											~	
	07:45				07:00	* 1 141901111			07:45				07:00				
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Total Volume	45	1080	12	1137	Ō	Ŏ	ŏ	0	292	598	48	938	Ö	<u>o</u> _	ŏ	Ŏ	
% App. Total	4	95	1.1		ō	ō	ŏ		31.1	63.8	5.1	000	ŏ	ő	ŏ	v	
PHF	.662	.938	.750	.970	.000	.000	.000	.000	.880	.952	.800	.946	.000	.000	.000	.000	
eak Hour Analy	sis Fro	m 12:45				· · · · · · · · · · · · · · · · · · ·						10 10	.000	.000	.000		
eak Hour for Er	ntire Inte	ersection	Begins	at 17:00	-, .											7.7	
17:00	19	245	2	266	0	0	0	0	68	189	4	261	0	0	0	.0	527
17:15	16	264	ō	280	Ō	ō	ŏ	ō	84	210	9	303	ő	0	0	0	583
17:30	18	219	2	239	ō	Õ	ō	o l	56	205	9	270	ŏ	ő	Ő	0	509
17:45	17	258	1	276	ŏ	ŏ	Õ.	ő	55	225	7	287	ŏ	ŏ	0	0	563
Total Volume	70	986	5	1061	Ö	Ō	Ö	ň	263	829	29	1121	0	0	ŏ	0	2182
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PHF	.921	.934	.625	.947	.000	.000	.000	.000	.783	.921	.806	.925	.000	.000	.000	.000	.936
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eak Hour for Ea					** '											,	
	16:30	177777		1	12:45				17:00				12:45				
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+15 mins.	21	274	3	298	ŏ	ŏ	ő	0	84	210	9	303	0	0	0	0	
+30 mins.	19	245	2	266	õ	ő	ő	0	56	205	9	270	0	0	0	0	
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PHF	.845	.953	.667	.942	.000	.000	.000	.000	.783	.921	.806	025	0	0	0	000	
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N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way City/State: Boston, MA Weather: Clear

File Name: 61880001 Site Code : 61880001 Start Date : 8/1/2007

Page No : 1

Groups Printed- Cars	

	N		ington S	St			ner St			l Wash	ngton 8	St			ti Way				
			North			From				From				From		The second			T
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right		Left	Thru		Peds		Inclu Total	Int. Total 385
07:00	17	171	0	16	0	0	0	7	44	113	10	1	0	.0	0	6	30 63	355 363	365 426
07:15	10	193	1	30	0	0	0	18	53	98	8	1	0	0	0	14		404	470
07:30	11	215	4	42	0	0	0	15	55	106	13	2	0	0	0	7	66		
07:45	15	238	2	52	0	0	0	15	75	127	14	0	0	0	0	12	79	471	550 1831
Total	53	817	7	140	0	0	0	55	227	444	45	4	0	Ü	U	39	238	1593	100:1
			_			•	^	00		400	4.5	4	^	Λ	0	O	00	464	554
08:00	10	248	2	58	0	0	0	23 25	66 64	123 130	15	1 0	0	0	0	8 8	90 91	453	544
08:15	17	231	4	58	0	0	0		59				0	0	0	10	76	479	555
08:30	2	262	2	49	0	0	0	15	59 54	143 126	11 4	2 3	0	0	0	7	82	417	499
08:45	16	211	6	45	0	0	0	27 90	243	522	37	6	Ö	0	ő	33	339	1813	2152
Total	45	952	14	210	i U.	U	U	90.	240	JZZ	31	Ų	v	U	.0	JĢ	000	10,10	2,102
09:00	12	204	4	48	0	0	0	-36	37	109	9	0	0	0	0	18	102	375	477
09:00	15	190	7	26	ŏ	0	Õ	12	67	145	9	4	ŏ	ŏ	ő	13	55	433	488
09:30	12	183	7	28	0	0	ŏ	12	44	99	7	1	ŏ	ŏ	ŏ	3	44	352	396
09:45	18	150	5	7	ő	ő	ő	19	39	100	6	ó	õ	ŏ	ŏ	7	33	318	351
Total	57	727	23	109	0	0	0	79	187	453	31	5	Õ	ő	ŏ	41	234	1478	1712
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10:15	11	108	2	27	Ŏ	ō	ō	10	51	119	7	0	0	0	Ö	6	43	298	341
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Total	45	477	15	96	0	ō	0	55	199	433	23	1	0	0	0	27	179	1192	1371
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11:15	13	109	6	13	0	0	0	22	64	131	10	0	0	0	Ó	7	42	333	375
11:30	16	155	3	16	0	0	0	21	52	103	6	4	0	0	0	10	51	335	386
11:45	8	101	8	9	0	0	0	15	43	123	6	6	0	0	0	14	44	289	333
Total	56	494	18	53	0	0	0	75	213	460	27	11	0	0	0	36	175	1268	1443
12:00	16	138	3	53	0	0	0	18	47	102	9	5	0	0	0	16	92	315	407
12:15	17	143	3	40	0	0	0	14	69	125	6	0	0	0	0	9	63	363	426
12:30	10	137	2	77	0	0	0	30	50	116	-9	0	0	0	0	5	112	324	436
12:45	16	147	6	61	0	0	0	26	53	106	6	0	0	0	0	5	92	334	426
Total	59	565	14	231	0	0	0	88	219	449	30	5	0	0	0	35	359	1336	1695
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13:00	9	154	3	77	0	0	0	32	61	121	15	1	0	0	0	11	121	363	484
13:15	9	153	0	44	0	0	0	31	51	122	5	0	0	0	0	16	91	340	431
13:30	10	128	5	47	0	.0	0	25	54	99	5	0	0	0	0	12	84	301	385
13:45	11	154	2	45	0	0	0	34	50	111	6	0	0	0	0	9	88	334	422
Total	39	589	10	213	0	0	0	122	216	453	31	1	0	0	0	48	384	1338	1722
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14:00	13	152	2	46	0	0	0	30	62	132	8	0	0	0	0	23	99	369	468 474
14:15	19	154	4	51	0	0	0	36	68 54	116	6	0	1.5	0 0	0 0	20	107 62	367 391	453
14:30	26	172	2	21	0 0	0	0	29 17	51 66	131 122	9 7	0	0	0	0	12 8	48	421	469
14:45	19 77	201 679	6	23 141	0	0	0	112	247	501	30	0	ő.	. 0.	ő.	63	316	1548	1864
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15:30	12	223	3	34	ő	ő	0	29	67	136	5	ŏ	ŏ	Ö	ŏ	8	71	446	517
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i Olai :	00	010	1.0	110	·	Ū	•	, , ,	20.	001		•	J	•	•	•		7.77	
16:00	11	234	4	22	0	0	0	25	51	126	11	0	0	Ö	0	8	55	437	492
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16:30	15	242	1	34	ŏ	ō	ő	15	58	150	6	ŏ	ŏ.	ŏ	ő	4	53	472	525
16:45	21	258	2	58	0	0	0	47	70	151	10	0	0	0	0	9	114	512	626
Total	55	966	9	152	0	0	0	117	250	580	36	0	0	0	0	40	309	1896	2205
			-																
17:00	19	230	1	83	0	0	0	33	59	172	4	0	0	0	0	19	135	485	620
17:15	16	248	0	50	0	0	0	32	75	194	9	0	0	0	0	14	96	542	638
17:30	18	204	2	60	. 0	0	0	27	52	191	9	0 :	0	0	0	19	106	476	582
17:45	17	246	1	64	0	0	0	34	49	211	7	0 :	0	0	0	16	114	531	645
Total	70	928	4	257	0	0	0	126	235	768	29	0	0	0	0	68	451	2034	2485
								4.4.4	Page 1	1						1			
Grand Total	594	8112	143	1720	0	O	0	1030	2497	5630	359	33	0	0	0	461	3244	17335	20579
												1							

		N Wash From	ington ! North	St	. ,	*	her St n East				nington : South	St			nti Way n West		
Start Time	Left			App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analy	ysis From	m 07:00	to 12:3	0 - Peak 1	of 1		J. 40, J. 2 March 11										
Peak Hour for E	ntire Inte	ersection	n Begins	at 07:45												192	
07:45	15	238	2	255	0	0	0	0	75	127	14	216	0	0	0	<i></i> (0	471
08:00	10	248	2	260	0	0	0	0	66	123	15	204	0	0	0	<i></i> 0	464
08:15	17	231	4	252	0	0	0	0	64	130	7	201	0	0	0	∵0	453
08:30	2	262	2	266	0	0	0	0	59	143	11	213	0	0	0	0	479
Total Volume	44	979	10	1033	0	0	0	0	264	523	47	834	0	0	0	. 0	1867
% App. Total	4.3	94.8	1		0	0	0		31.7	62.7	5.6		0	0	00		
PHF	.647	.934	.625	.971	,000	.000	.000	.000	.880	.914	.783	.965	.000	.000	.000	.000	.974
Peak Hour Analy Peak Hour for Ea	ach App	n 07:00 roach B	to 12:30 egins al	0 - Peak 1 t:													
	07:45				07:00				07:45				07:00				
+0 mins.	15	238	2	255	0	0	0	0	75	127	14	216	0	0	0	0	
+15 mins.	10	248	2	260	0	0	0	0	66	123	15	204	0	0	0	0	
+30 mins.	17	231	4	252	0	0	0	0	64	130	7	201	0	0	0	0	
+45 mins.	2	262	2	266	0	0	0	0	59	143	11	213	0	0	0	0	
Total Volume	44	979	10	1033	0	0	0	0	264	523	47	834	0	0	0	0	
% App. Total	4.3	94.8	1	:	0	0	0		31.7	62.7	5.6		0	0	0		
PHF	.647	.934	.625	,971	.000	.000	.000	.000	.880	.914	.783	.965	.000	.000	.000	.000	
Peak Hour Analy Peak Hour for Er					of 1												
17:00	19	230	1	250	0	0	.0	0 :	59	172	4	235	0	0	Ō	0	485
17:15	16	248	0	264	0	0	0	0	75	194	9	278	0	0	0	0	542
17:30	18	204	2	224	0	0	0	0	52	191	9	252	0	0	0	0	476
17:45	1.7	246	1	264	0	0	0	0	49	211	7:	267	0	0	0	0	531
Total Volume	70	928	4	1002	0	0	0	0	235	768	29	1032	0	0	0	0	2034
% App. Total	7	92.6	0.4		0	0	0		22.8	74.4	2.8		Ó	0	0		
PHF	.921	.935	.500	.949	.000	.000	.000	.000	.783	.910	.806	.928	.000	.000	.000	.000	.938
Peak Hour Analy Peak Hour for Ea	ach App						V. Hilled 1st faboure manchesisco		and the second s						n konstrukturun senten er stat sente	o	
	16:30				12:45				17:00				12:45				
+0 mins.	15	242	1	258	0	0	0	0	59	172	4	235	0	0	0	0	
+15 mins.	21	258	2	281	0	0	0	0	75	194	.9	278	0	0	0	0	
+30 mins.	19	230	1	250	0	0	0	0	52	191	9	252	0	0	0	0	
+45 mins.	16	248	0	264	0	0	0	0	49	211	7	267	0	0	0	0	
Total Volume	71	978	4	1053	0	0	0	0	235	768	29	1032	0	0	0	0	
% App. Total	6.7	92.9	0.4		0	0	0		22.8	74.4	2.8		0	0	0		
PHF	.845	.948	.500	.937	.000	.000	.000	.000	.783	.910	.806	.928	.000	.000	.000	.000	

N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way

City/State : Boston, MA Weather : Clear

File Name: 61880001 Site Code : 61880001 Start Date : 8/1/2007

Page No : 1

,	N		ington S	ŝt		Thaci From	ner St	Grou		ted- Tru Washi From	ngton S	it :		Valent From					
Ctart Time	Loft		North	Peds	Left	Thru	Right	Peds	Left	Thru		Peds	Left	Thru	Right	Peds	Exclu: Total	Inclu. Total	Int. Total
Start Time 07:00	Left 0	21	Right 0	0	0	0	0	0	6	11	0	0	Ö	0	0	0	0	38	38
07:15	ő	24	ŏ	Ö	ō	0	0	0	7	13	1	0	0	0	0	0	0	45	45
07:30	Ö	32	0	0	0	0	0	0	9	14	1	0	0	0	0	0	0	56	56
07:45	0	24	2	0	0	0	0	0	8	24	0	0	0	0	0	0	0	58 197	58 197
Total :	0	101	2	0	0	0.	0	0	30 6	62 21	2 0	0	0	0	0	0	0	53	53
08:00 08:15	0	26 25	0	0	0	0	0	0	7	16	1	0	0	0	0	0	Ö	49	49
08:30	1	26	ŏ	ő	ő	ő	ŏ	ŏ	7	14	o	0	ō	Ö	0	0	0	48	48
08:45	1	14	Ō	o	0	0	0	0	7	16	0	0	0	0	0	0	0	38	38
Total	2	91	0	0	0	0	0	0	27	67	1	0	0	0	0	0	0	188	188
09:00	0	22	0	0	0	0	0	0	5 5	18	2	0	0	0	0	0	0	47	47
09:15	0	22	0	0	0	0	0	0	5	18	1	0	0	0	0	0	0	46	46
09:30	Ō	21	0	0	0	Ö	0	0	7 5	14	0	0	0	0 0	0	0	0	42 35	42 35
09:45	0	13 78	0	0	0	0	0	0	22	16 66	4	0	0	ő	0	0	0	170	170
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10:45	ő	20	1	ŏ	ō	õ	Ö	0	2	14	Õ	0	0	0	0	0	0	37	37
Total	2	69	3	0	0	0	0	0	23	44	0	0	0	0	0	0	0	141	141
11:00	1	16	1	0	0	0	0	0	11	21	0	0	0	0	0	0	0	50	50
11:15	0	14	0	0	0	0	0	0	5	17	0	0	0	0	0	0	0	36	36
11:30	0	16	1	0	0	0	0	0	4	13	1	0	0	0	0	0	0	35 25	35 25
11:45	1	11	0 2	0	0	0	0	0	2 22	11 62	0	0	0	0	0_0	0	0	146	146
Total	2	57			0	-	0	0	4	12	0	0	0	0	0	0	0	29	29
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12:45	ő	22	ō	ő	ŏ	ŏ	ō	ŏ	3	12	1	o l	ō	Ö	Ö	Ö	ō	38	38
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Total	2	74	5	ŏ	Ö	ő	Ö	ŏ	17	67	2	ŏ	Ō	ő	ō	ŏ	ō	167	167
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16:00	0	21	1	0	0	0	Ö	0	6	19	1	0	0	0	0	0	0	48	48
16:15	0	19	0	0 -	0	0	0	0	6	16	0	0	0	0	0	0	0	41	41
16:30	0	19	2	0	0	0	0	0	10	17 11	0	0 0	0	0	0	0	0 0	48 36	48 36
16:45 Total	0 0	16 75	1 4	0	0	0	0	0	8 30	63	$-\frac{0}{1}$	0	0	0	0	0	ŏ	173	173
। प्रती	U	1-4	~	v	v	v	v	U :	50		•	V	v	v	v	Ų	•	,,,	,,,
17:00	0	15	1	0	0	0	0	0	9	17	0	0	0	0	0	0	Ö	42	42
17:15	0	16	0	0	0	0	0	0	9	16	0	0	0	0	0	0	0	41	41
17:30	0	15	0	0	0	0	0	0	4	14	0	0	0	0	0	0	0	33	33
17:45	0	12	0	0	0	0	0	0	6	14	0	0	0	0	0	0	0	32	32
Total	0	58	1	0 :	0	0	0	0	28	61	Ō.	0 )	0	0	0	0	0	148	148
Grand Total	14	788	28	0	0	0	. 0	0	253	648	14	0	0	0	0	0	0	1745	1745
Apprch %	1.7	94.9	3.4		0	0	Ó	- 100	27.7	70.8	1.5	1	0	0	.0				
Total %	0.8	45.2	1.6	3	0	0	0		14.5	37.1	8.0	)	0	0	0		0	100	

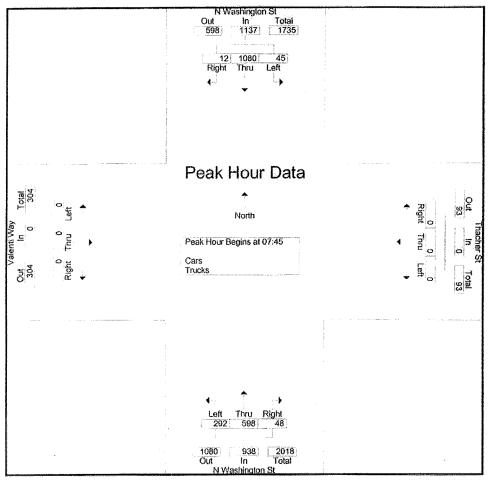
							•	T .	_		•						
			gidi esake	4 154	발발:57						erkültytt.					2	
	200 mani 11 milion 12 mili		ington St North				her St i East		manus and also represent		nington S			Valer From	76		
Start Time	Left		Right /	App. Total	Left			App. Total	Left		ere of arm a construction	App. Total	Left	Thru	Right	App. Total	Int. Tota
Peak Hour Anal		m 07:00	to 12:30	- Peak 1	of 1		•	*.*	or one address decision or control			. Calabana				A PARTIE CONT. CONT. CONT. CONT.	I A demonstration
Peak Hour for E	ntire Inte	ersection	Begins :	at 07:30													
07:30	0	32	0	32	. 0	0	0	0	9	14	1	24	0	0	0	0	56
07:45	0	24	2	26	0	0	0,	0	8	24	.0	32	0	0	0	0	58
08:00	0	-26	0	26	0	0	0	0	6	21	0	27	0	0	0	<b>0</b>	53
08:15	0	25	0	25	0	0	0	0	7	16	1	24	0	0	0	0	49
Total Volume	0	107	2	109	0	0	0	0	30	75	2	107	0	0	0	0	216
% App. Total	0	98.2	1.8	-	0	0	0		28	70.1	1.9		0	0	0		
PHF	.000	.836	.250	.852	.000	.000	.000	.000	.833	.781	.500	.836	.000	.000	.000	.000	.931
Peak Hour Anal Peak Hour for E	ach App 07:30	roach B	egins at:		07:00				07:30 9			24	07:00	0	0	0	
+0 mins.	0	32	0	32	0	0	0	0	-	14	1				0	0	
+15 mins.	0	24	2	26	0	0	0	0	8	24	0	32 27	0	0	0	- (	
+30 mins.	0	26	0	26	0	0	0	0	6	21	0		0	-	0	0	
+45 mins.	0	25	0	25	0	0_	0	0 :	7 30	16 75	1 2	24 107	0	0	0	0	
Total Volume	.0	107	2	109	0	0	0	U				107	-	_	-	U	
% App. Total	0	98.2	1.8		0	0	0	000	28	70.1	1.9	000	0	.000	.000	200	
PHF	.000	.836	.250	.852	.000	.000	.000	.000	.833	.781	.500	.836	.000	.000	.000	.000	
Peak Hour Analy Peak Hour for E	ntire Inte	ersection	n Begins a	at 15:30		•	0	n :	0	4.7	4	27	0	0	0	0	52
15:30	1	23	1	25	0	0	0	0	9	17 12	1 0	16:	0	0	0	0	37
15:45	1	19	1	21	0	0	0. 0	0	6	19	1	26	0	0	0	0	48
16:00 16:15	0	21 19	1 0	22 19	0	0	0	0	6	16	Ó	20	0	0	0	0	41
Total Volume	2	82	3	87	0	0	0		25	64	2	91	0	Ö	ő	0	178
	2.3	94.3	3.4	01	0	ő	ő	·	27.5	70.3	2.2	91	O.	0	Ö		1,,0
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Peak Hour Analy Peak Hour for E				- Peak 1	of 1											\$	
. wast Hold IVI by	15:30		-0": 11"		12:45				16:30			** ***********************************	12:45				
+0 mins.	1	23	1	25	0	0	0	0	10	17	0	27	0	0	0	0	
+15 mins.	1	19	1	21	õ	0	õ	0	8	11	Ō	19	Ō	0	0	0	
+30 m ns.	Ó	21	1	22	0	Ó	0	0	9	17	0	26	0	0	0	0	
+45 mins.	ő	19	Ó.	19	Ō	0	0	0	9	16	0	25	Ô	Ó	O	0	
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PHF	.500	.891	.750	.870	.000	.000	.000	.000	.900	.897	.000	.898	.000	.000	.000	.000	

N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way City/State : Boston, MA Weather : Clear

File Name: 61880001 Site Code : 61880001 Start Date : 8/1/2007

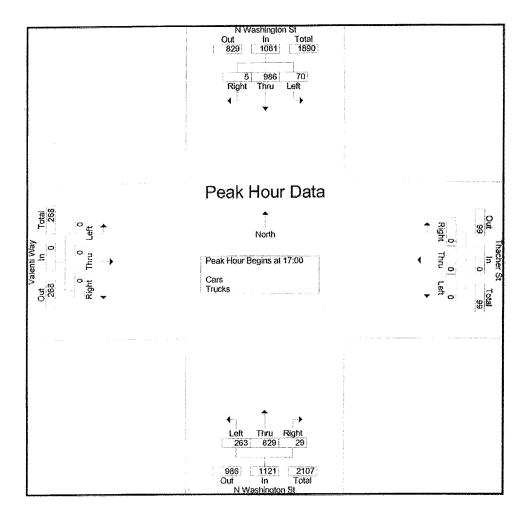
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	1011 11 (2-10)		ington S North	St .			her St ı East				nington South	St					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analy	sis From	n 07:00		) - Peak 1	of 1	1,11-1,01-10											
Peak Hour for Er																3	
07:45	15	262	4	281	0	0	0	0	83	151	14	248	0	0	. 0	.0	529
08:00	10	274	2	286	0	0	0	0	72	144	15	231	0	0	0	0	517
08:15	17	256	4	277	0	0	0	0	71	146	8	225	0	0	0	0	502
08:30	3	288	2	293	0	0	0	0	66	157	11	234	0	0	0	0	527
Total Volume	45	1080	12	1137	0	0	0	0	292	598	48	938	0	0	0	0	2075
% App. Total	4	95	1.1		0	0	0		31.1	63.8	5.1		0	0	0		
PHF	.662	.938	.750	.970	.000	.000	.000	.000	.880	.952	.800	.946	.000	.000	.000	.000	.981



	Peak Hour Analysis From 12:45 to 17:45 - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 17:00															*	
17:00	19	245	2	266	0	0	0	0	68	189	4	261	0	0	0	0	527
17:15	16	264	Ó	280	0	0	0	0	84	210	9	303	0	0	0	0	583
17:30	18	219	2	239	0	0	0	0	56	205	9	270	0	0	0	0	509
17:45	17	258	1	276	0	0	0	0	55	225	7	287	0	0	0	0	563
Total Volume	70	986	5	1061	0	0	0	0	263	829	29	1121	0	0	0	0	2182
% App. Total	6.6	92.9	0.5		0	0	0	A.	23.5	74	2.6		0	0	0		
PHF	.921	,934	.625	.947	.000	.000	.000	.000	.783	.921	.806	.925	.000	.000	.000	.000	.936

File Name : 61880001 Site Code : 61880001 Start Date : 8/1/2007 Page No : 2



N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way City/State: Boston, MA

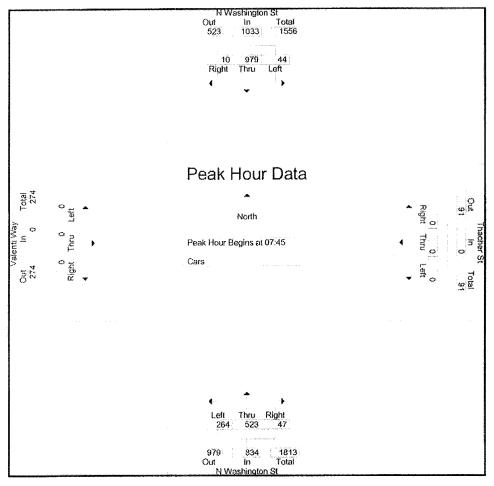
Weather : Clear

File Name: 61880001 Site Code : 61880001

Start Date : 8/1/2007

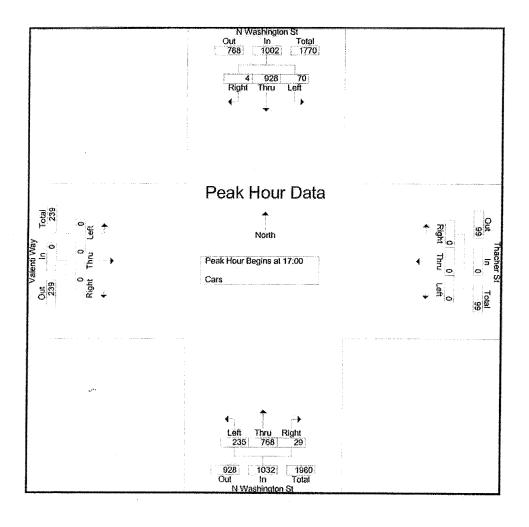
Page No : 1

	1		ington 8 North	St			her St n East		N Wash From	ington South	St						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int, Total
Peak Hour Analy	sis Fror	n 07:00		0 - Peak 1	of 1												
Peak Hour for Er	ntire Inte	ersection	n Begins	at 07:45													
07:45	15	238	2	255	0	0	0	0	75	127	14	216	0	0	0	0	471
08:00	10	248	2	260	0	0	0	0	66	123	15	204	0	0	0	0	464
08:15	17	231	4	252	0	0	0	0	64	130	7	201	0	0	0	0	453
08:30	2	262	2	266	Ó	Ö	0	0	59	143	11	213	0	0	0	0	479
Total Volume	44	979	10	1033	Ô	Ö	0	0	264	523	47	834	Ö	0	0	0	1867
% App. Total	4.3	94.8	1	,,,,	ō	Ö	Ö		31.7	62.7	5.6		0	0	0		
PHF	.647	.934	.625	.971	.000	.000	.000	.000	.880	914	.783	.965	.000	.000	.000	.000	.974



Peak Hour Analy Peak Hour for E					of 1												
17:00	19	230	1	250	0	0	0	0	59	172	4	235	0	0	0	0	485
17:15	16	248	0	264	0	0	0	0	75	194	9	278	0	0	0	0	542
17:30	18	204	2	224	0	0	0	0	52	191	9	252	0	0	0	0	476
17:45	17	246	1	264	0	0	0	0	49	211	7	267	0	0	0	0	531
Total Volume	70	928	4	1002	0	Ö	Ö	0	235	768	29	1032	0	0	0	0	2034
% App. Total	7	92.6	0.4		0	0	0		22.8	74.4	2.8		0	0	0		
PHF	.921	.935	.500	.949	.000	.000	.000	.000	.783	.910	.806	.928	.000	.000	.000	.000	.938

File Name : 61880001 Site Code : 61880001 Start Date : 8/1/2007 Page No : 2



N/S Street: North Washington Street E/W Street: Thacher St / Valenti Way

City/State: Boston, MA

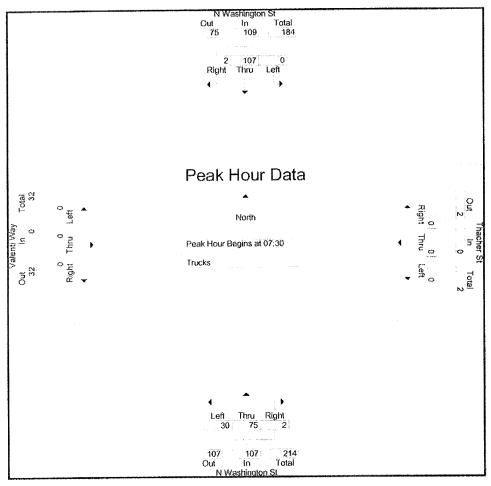
Weather : Clear

File Name : 61880001 Site Code : 61880001

Site Code : 61880001 Start Date : 8/1/2007

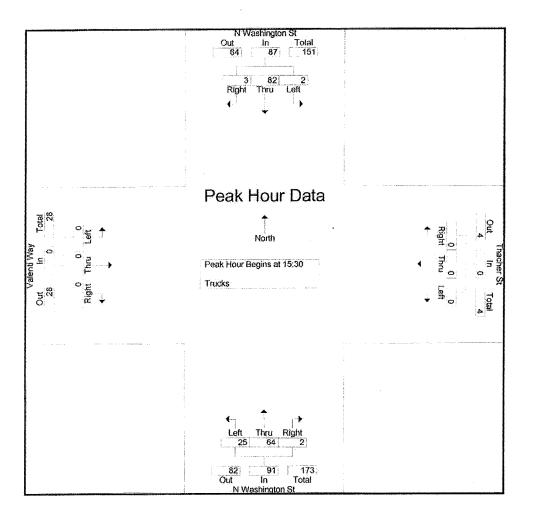
Page No : 1

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Site Code : 61880001 Start Date : 8/1/2007 Page No : 2



File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006 Page No : 1

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

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File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006 Page No : 1

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

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

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Site Code : 52000002 Start Date : 5/31/2006

Page No

File Name : 52000002

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd

City/State: Boston, MA

Weather : Clear

Total v 20 5 27.000 4 Total 4 8 Inciu. Exclu-Total ٥ Pods **~**  $\circ \circ \circ$ ~ ~ ~ ~ ~ ~ Righ 106 Surface Rd From West 90 0 00 Peds Left 0 00 ----North Washington St. - Righ 0 0 From South 00 00  $\circ \circ : \circ$  $\Diamond$ 000 ----Groups Printed-Trucks 000 ~ **~ ~ ~ ~ \(\tau\)** Righ 00 From Southeast Bear 3 76.7 0 Ħ Peds Righ 23 Cooper St From East Leff Thru 00 00 00000 ٥ 0.0 Peds ---رث 0 0 North Washington St. Righ 00 From North Bear Thru Left Thru 999 ------00 000 Start Time Left 000  $\circ$ 07:15 07:45 Total 08300 08:15 08:30 08:45 Lotal Grand Torai Apprch % Total %

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

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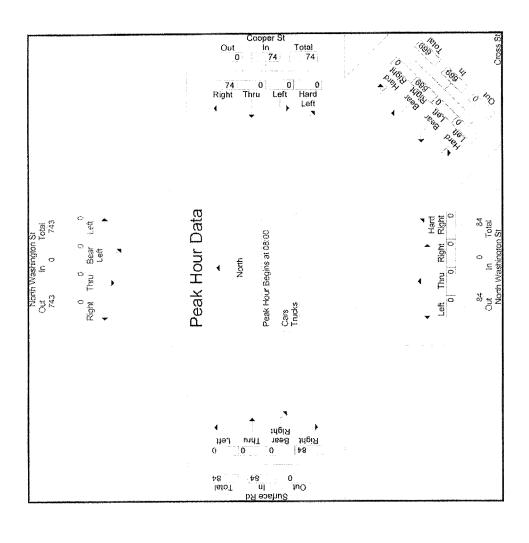
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File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006 Page No : 1

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

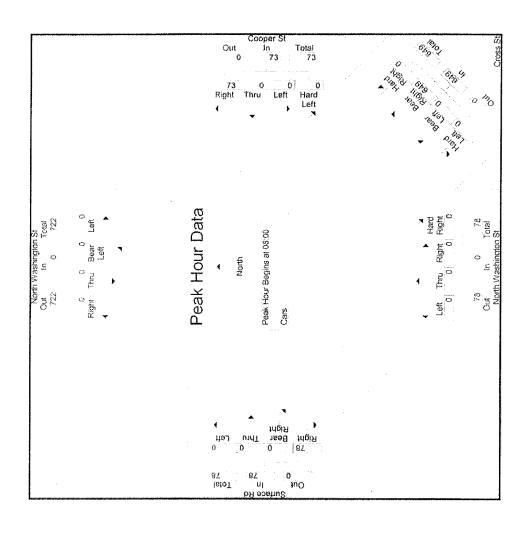
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File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006 Page No : 1

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

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	Sart Time Left	Peak Hour Analysis From 07:00 to 08:45 - Peak Lof L	Peak Hour for Entire Intersection Begins at 08:00	00:80	08:15	08:30	51:80	Total	Volume	% App. Total	PEF



File Name : 52000002 Site Code : 52000002

Start Date : 5/31/2006

Page No

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd

City/State: Boston, MA

Weather : Clear

Int. Fotal 350 4683 ñ App. 375 Bear Righ 375 Surface Rd From West (H) 3 0000 Left 900 900 App  $\circ$ Righ Hard North Washington St 900 =  $\sim$ From South 900 900 Thu Left 8 App. Tetal 1 Bear Hard Rig Rig hi hi 98  $\Box$ From Southeast Cross St 714 8 Bear <del>3</del> Left  $\circ$ Ç App. Hard Fotal Left 99, 250 Righ 250 36 Cooper St From East 93 Left Thru 000 App. Hard Fotal Left 000 000 Peak Hour Analysis From 07:00 to 08:45 - Peak Lof L ••• 

 Peak Hour for Entire Intersection Begins at 08:00

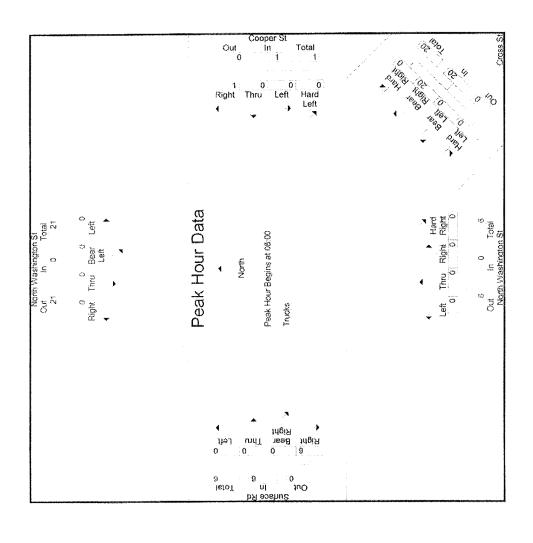
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: 5/31/2006

: 52000002

Site Code Start Date Page No

File Name : 52000002

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA

City/State: Boston, Weather: Clear

Torral 2149 261 255 263 278 1057 319 288 246 258 \*\*\*\*\* \*\*\*\*\* 2168 99.1 9.0 Inchu. Total 0 1753 86.9 ٦ 00 215 204 226 236 236 875 246 230 195 207 Exclu. Total 25.83 415 9.1 00 \$ 32 E \$ 182 Peds 8 9 0000 9 Righ Light 97.9 ₩. [42 Mi Ø 12 9 8888 g Surface Rd From West Bear Rig 0 ----00 Thru 0 000 **\$ ~ ~** 00 Peds 9 0 00 **C** North Washington St ಌ  $\simeq$  $\circ$ 1 Righ From South Righ 000 0 C Thm 0.00 0 0 O 0 0000 -C leff. Groups Printed- Cars - Trucks Peds 8 9 12 13 2 101 83 7537 Righ T  $\bigcirc$ 0 0  $\Box$ 4 000 From Southeast Cross St R P G 6.86 Bear 220 190 178 770 9 \$ 5 ° € 2 703 0 9 0 0 0 Bear Left 0 0 99 **~** 00 ~ # 4 ---\$  $\circ$   $\circ$   $\circ$ Har Peds ಞ 38 3 8823 226 2222 Righ **~ ~** 100 **公** 寸 33 <u>~</u> G 33 8 33 Cooper St From East ień mu 0  $\sim$ 0 ాల **C** 000 **C** 0000 0 Left Peds 0 0 -٥ 00 0000 North Washington St Righ From North That 00 **C** 0000 0 C 0 ~ ---Bear Lefi 00  $\phi \cdot \phi \cdot \phi$ Sun Time Left 00 00 **-**0  $\Diamond$ 0 00 Trucks % Trucks Appreh % Total % % Cars 16:00 16:15 16:30 16:45 17:15 17:15 17:30 17:45 Grand Cars Total Total

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File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006 Page No : 1

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

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Site Code : 52000002 Start Date : 5/31/2006

Page No

File Name: 52000002

N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd

City/State: Boston, MA

Weather : Clear

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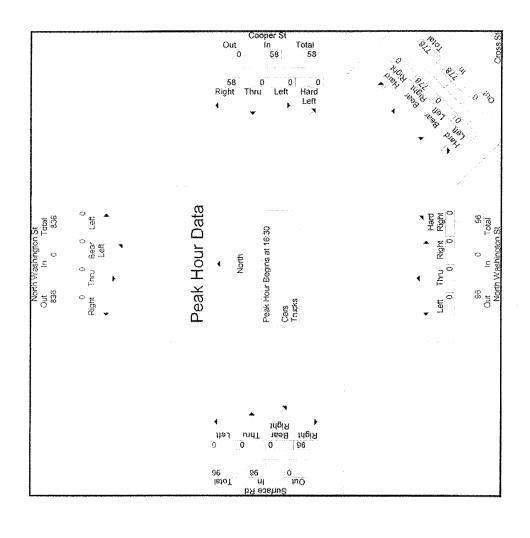
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N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA Weather: Clear

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Site Code : 52000002 File Name : 52000002

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N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd

City/State: Boston, MA Weather : Clear

Bear Righ Surface Rd From West Rig 900 H 000 99 50 C 0 Ç. ٥ 000 App. Total O C North Washington St 000 8 5 5 7 Hard 0000 From South Kigh 8 800 HE 0  $\Box$ 000. -App 168 175 190 216 189 770 장돈 <u></u> 8 Bear Hard From Southeast Cross St Z Z 80 130 130 180 180 770 100 9000 Left Bear ••• 0 App. Hard Total Left 0000 0 900 0 .763 **≫** # 00 Righ ≫ **⊅** r 90 101 9 .763 Cooper St From East 900 Left Thru 0 000 000 Bear Thru Righ App. Hard Left Thru I Total Left C  $\simeq$ Peak Hour Analysis From 16:00 to 17:45 - Peak Lof 1 .000 
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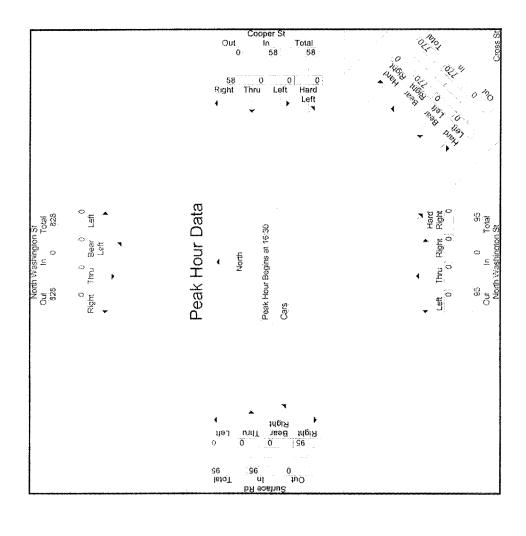
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File Name : 52000002 Site Code : 52000002 Start Date : 5/31/2006

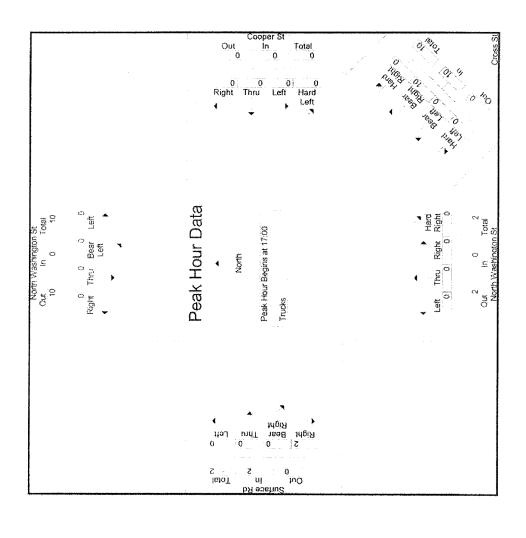
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N/S Street: North Washington Street E/W Street: Cooper St / Surface Rd City/State: Boston, MA

Weather : Clear

hiit. Total App. Totai 500 Bear Righ 90 500 Surface Rd From West S F 900 9 --Thru 900. Left 900 00 .000 App **=** =  $\bigcirc$ North Washington St Hard Z. 900  $\Diamond$   $\Diamond$ ٣ From South Righ 80 000 Left Thru 8 App. Total .625 0 Z Z 900 0 0 Bear Hand From Southeast (ross St 2 = .625 ದ್ವಾದ 900 Left App. Hard Total Left 000 000 000 Righ 00 Cooper St From East 989; Left Thru 000  $\bigcirc$ 000 App. Hand Total Left 000 <u></u> 0 Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 17:00 17:00 0 0 0 0 North Washington St. Bear Thru Righ Left Thru 900. From North 8 900 900 900 Start Time Left ---% App. Fotal 17:15 17:30 17:45 Total Volume

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File Name : 61880002 Site Code : 61880002 Start Date : 8/1/2007 Page No : 1

N/S Street: North Washington Street
E/W Street: Now Chardon St / Rt 93 Ramp
City/State: Boston, MA
Weather: Clear

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File Name: 61880002 Sire Code: 61880002 Start Date: 8/1/2007 Page No: 1

N/S Street: North Washington Street E/W Street: New Chardon St / Rt 93 Ramp City/State: Boston, MA Weather: Clear

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N/S Street: North Washington Street

E/W Street: New Chardon St / Rt 93 Ramp
City/State: Boston, MA
Weather: C'lear

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Accurate Counts

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978-664-2565

E/W Street: New Chardon St / Rt 93 Ramp City/State : Boston, MA Weather : Clear

N/S Street: North Washington Street

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File Name : 61880002 Site Code : 61880002 Start Date : 8/1/2007 Page No : 2

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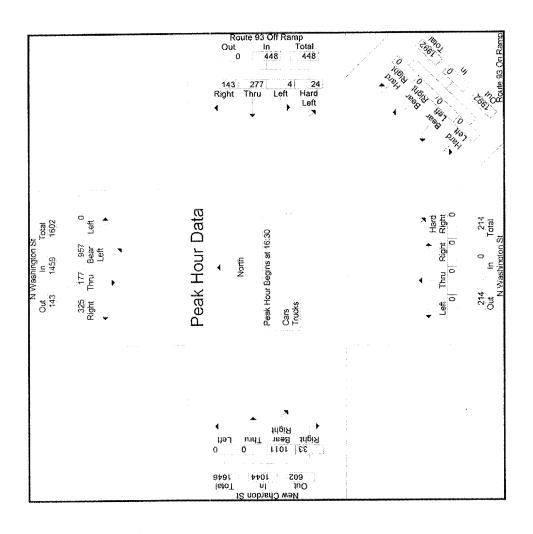
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84	23	36	40	177	12.1	.835
232	237	267	22.1	957	65.6	.896
0	0	0	0	0	0	000
16:30 0 2	16:45	17:00	17:15	Total Volume	% App. Total	Ŧ

725 764 705 757 2951

996

Accurate Counts 978-664-2565



File Name: 61880002 Site Code: 61880002 Start Date: 8/1/2007 Page No: 1

N/S Street: North Washington Street E/W Street: New Chardon St / Rt 93 Ramp City/State: Boston, MA Weather: Clear

	Int. Total		549	587	554	612	2302		.940
	Apis. Totas		83	100	101	103	386		.937
on St	Right			O)					
New Chardon St From West	ring stag		74	20	88	9	343	88.9	.942
New	Thru		0	0	0	0	0	0	
	Left		Ф	0	0	0	0	0	8
	Арр. Тога		0	0	0	0	0		000
Su CE	Harm Royal		0	0	0	0	0	0	000
shingto m Sou	Zight		0	0	0	0	Ф	0	000
N Wa	Thru		0	0	0	0	0	0	000
	Left		0	0	0	Φ	0	0	000:
	App Total		0	0	0	0	0		000
Ramp	Have Right		0	0	0	0	0		
oute 93 On Ram From Southeast	11 de 1		0	0	0	0	0	0	000
Route 93 On Ramp From Southeast	\$ 127.9%G		Φ	0	0	0	O	0	800
	74.01.0431		0	0	0	0	0	ဝ	000
	App. Total		157	150	136	176	619		879
Ramp	Right		48	30	33	φ 8	190	25.8	818
Route 93 Off Ramp From East	Left Thru		83	109	98	103	381	61.6	874
Route Fi	Left		Φ	ო	ග	Ø	27	₹. ₹.	.750
	100 Per 100 Pe		ţ-,	φ	φ		Š		708
	Thru Right App. Total Person O to 11:45 - Peak 1 of 1	07:45	310	337	317	333	1297		.962
th St	Right 145 -	ins at	85	103	83	£ £ £	382	29.5	.860
N Washington St From North	75 to 1	on Bec	28	20	46	40	164	12.6	.820
N W D	From 07:0	tersect	197	184	188	182	751	57.9	.953
	Left ysis Fr	ntire In	0	0	0	0	O	0	000
	Start Time Left Reserve Thru Right kep Toost Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of	Peak Hour for E	07:45 0 197 28 85 310	08:00	08:15	08:30	Total Volume	% App. Total	昰

File Name : 61880002 Site Code : 61880002 Start Date : 8/1/2007 Page No : 2

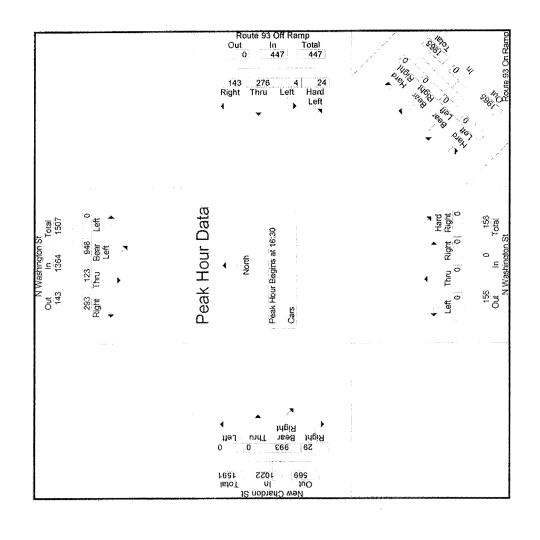
> Roule 93 Off Ramp Out In Total 0 619 619 27 51 Left Hard Left 381 Thru 160 Right 4 Peak Hour Data Thru Right Right ) |-|-Total Total 1457 Peak Hour Begins at 07:45 N Washington St ut In To 160 1297 1 I In T 751 Bear Left O North 164 Thru 160 160 8 2 . o 382 Right Cars 646 1698 Mgh 0 1)97 1dgiA letoT epr r New Chardon St Out In 763 386

Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 16:30

244	260	244	274	1022		.932
ന	7	ဖ	œ	53	2.8	.90 <u>4</u>
241	248	238	266	993	97.2	.933
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0	0	0	0	0	0	89.
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0	0	0	0	0	0	9
120	132	တ္တ	126	447		.847
40	89	ឧ	43	143	32	.831
72	8	4	79	276	61.7	824
₩	0	N	<b>~~</b>	4	0 0	.500
2	9	4	හ	24	4.0	900
324	346	365	329	1364		.934
8	73	74	\$	293	21.5	.872
34	\$	22	24	123	ග	.769
228 34 62	233	266	221	948	69.5	85 25
0	0	0	O	0	0	8
16:30 0	16:45	17:00	17:15	Total Volume	% App. Total	o.

688 738 678 729 2833 960

Accurate Counts 978-664-2565



File Name: 61880002 Site Code: 61880002 Start Date: 8/1/2007 Page No: 1

N/S Street: North Washington Street E/W Street: New Chardon St / Rt 93 Ramp City/State: Boston, MA Weather: Clear

	Im. Total		40	41	<b>4</b>	43	176		898.
	App. Total		က	S	ĸ	ιΩ	8		006
st St	Right		<b></b>	0	₹~	7	m	16.7	.375
Vew Chardon St From West	Kase Enghi		ო	Ŋ	4	ო	ក្	83.3	.750
New L	Thru		0	0	0	0	0	0	8
	Left		0	0	0	Φ	0	0	000
	4वक रिवस		0	0	0	0	0		000
St ⊕	Hand Biggs.		0	0	0	0			000
ishingte om Sou	Right		0	0	0	0	0	¢	989
N N N	Thu		O.	0	Φ	0	0	O	00. 00.
	Left		0	0	0	0	0	0	8
	App. Total		0	0		0			000
Ramp east	Service Service		0	0	0	0	0	Φ	000
Route 93 On Ramp From Southeast	Steak Right		0	0	0	0	0	0	80
Route 93 C From Sou	Seu cath		0	0	0	0	0	0	989
	Marital		Φ	O	0	0	0	0	8
	App. Total		ហ	Ó	ហ	ග	25		694
Ramp	Right		81	ന	***	4	5	40	.625
Route 93 Off Ramp From East	Thr		7	<b></b>	****	4	00	32	000
Route F	Left		0	0	0	0	0	0	90.
	Mand Lak		۳.	N	က	·	٧	28	.583
	App. Total	07:30	4	ଚ	33	53	133		15
₩ Fe <del>f</del> e	Right 1:45 - F	gins at	2	Ü	ţ,	<b>*</b>	93	39.8	779
N Washington St From North	Thru 00 to 1	fion Be	00	Ø	တ	Ç	36	27.1	900
N N N	rom 07.	otersec	16	ග	4 4	∞	44	33.1	.688
	Left ilysis Fi	Entire i	0	0	0	0	0		000
	Start Time Left Bear Left Thru Right App. 10tal Reales. Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1	Peak Hour for Entire intersection Begins at 07:30	07:30	07:45	08:00	08:15	Total Volume	% App. Total	Ŧ

File Name : 61880002 Site Code : 61880002 Start Date : 8/1/2007 Page No : 2

Route 93 Off Ramp Out In Total 0 25 25 0 7 Left Hard Left 10 Rìght 8 Thru Left Thru Right Right Peak Hour Data N Weshington St in Total 10 133 143 10ta 30 Peak Hour Begins at 07:30 I in I N Washington St O Nort S # 9 G Right 53 Trucks 16 Bear MgiA , гец 0 1dgiA กานไ lstoT 85 Mew Chardon St Out In 19

Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 16:30

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	0	0	0	0	0	0	99.
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	0	0	0	0	0		99.
	0	0	0	0	0	0	000:
	0	0	0	0	0	0	000
	0	0	0	Φ	0	0	8 8
	0	0	0	0	0	0	000.
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	0	0	0	0	0	0	000
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	0	0	0	0	0	0	000
	<b>~</b> ~~	0	Φ	0	***		.250
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	₹~	0	0	0	*	100	.250
	0	0	0	0	0	0	900.
	0	0	0	o	0	0	000
	27	23	23	53	8		.880
)	ത	ထ	ω	ග	32	33.7	889
	4	<u>ښ</u>	denz denz	ç	Z	56.8	844
	4	4	4	0	හ	රි.ප	563
	0	0	0	0	0	0	8
	16:30	16:45	17:00	17:15	Total Volume	% App. Total	품

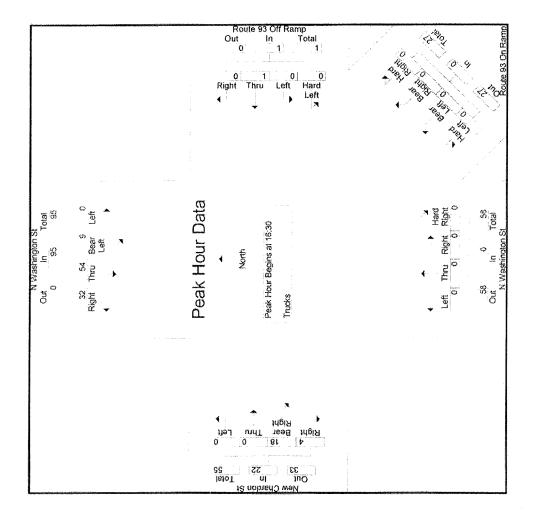
797.

25 25 37 178 28 24 178 28 24

200 4 85 200 4 85 200 4 85 200 5

7 K R R 8 1.00.

Accurate Counts 978-664-2565



N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

File Name: 06040002 Site Code: 06040002 Start Date: 9/26/2006

Page No : 1

Groups Printed- Cars - Trucks North Washington St North Washington St Medford St From North From South From West Exclu. Start Time Thru Right Peds Left Thru Peds Left Right Peds Inclu. Total Int. Total Total 07:00 Ö Ò 07:15 Ì 07:30 () 07:45 () Total Ü 08:00 08:15 08:30 08:45 Total Grand Total . Appreh % 98.6 1.4 10.4 89.6 Õ Total % 3.2 27.8 1.6 98.4 Cars Ő % Cars 92.2 96.9 96.3 85.8 90.8 Trucks Õ Ö % Trucks 3.1 7.8 3.7 14.2 0 : 9.2

		North Washington St From North			North Washington St From South				Medford St From West		
Start Time	Thru		App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total	
Peak Hour Analysis From 0	7:00 to 08:4:	5 - Peak 1 of	1					<b>39</b> %			
Peak Hour for Entire Interse	ection Begins	s at 07:45									
07:45	316	5	321	12	116	128	0	0	0	449	
08:00	320	6	326	16	121	137	0	Ö	ő	463	
08:15	373	2	375	22	137	159	0	ő	ő	534	
08:30	366	6	372	17	142	159	0	ö	ŏ	531	
Total Volume	1375	19	1394	67	516	583	0		0	1977	
% App. Total	98.6	1.4		11.5	88.5		0	Ô			
PHF	922	.792	.929	.761	.908	.917	.000	.000	.000	.926	

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

0	7:45	***************************************	0	8:00	The second of the second	0	7:00		
±0 mins.	316	5	321	16	121	137	0	0	0
+15 mins.	320	6	326	22	137	159	0	õ	ő
+30 mins.	373	2	375	17	142	159	0	0	$\tilde{\mathbf{o}}^{\pm}$
+45 mins.	366	6	372	1)	121	132	0	0	o l
Total Volume	1375	19	1394	66	521	587	0	0	0
% App. Total	98.6	1.4		11.2	88.8		0	0	
PHF	.922	.792	.929	.750	.917	.923	.000	.000	.000

## Accurate Counts

N/S Street: North Washington Street

E/W Street: Medford Street City/State : Boston, MA Weather : Clear

978-664-2565

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

					Groups	Printed- Ca	rs					
:		Washingtor om North	) St	North Washington St From South				ledford St rom West				
Start Time	Thru	Right	Peds	l.eft	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	127	5	0	7	66	0	0	0	0	0	205	205
07:15	183	4	2	11	87	0	0	0	1	3	285	288
07:30	244	2	2	9	98	0	0	0	- 11	13	353	366
07:45	289	5	1	12	95	1	0	0	5	7	401	408
Total	843	16	5	39	346	1	0	0	17	23	1244	1267
08:00	294	6	3	15	101	0	0	0	2	5	416	421
08:15	349	2	0 '	22	120	0	0	0	13	13	493	506
08:30	352	6	0	17	130	0	0	0	5	5	505	510
08:45	263	l	l	11	103	0 -	0	0	6	7	378	385
Total	1258	15	4	65	454	0 ;	0	0	26	30	1792	1822
Grand Total	2101	31	9	104	800	1 :	0	0	43	53	3036	3089
Appreh %	98.5	1.5		11.5	88.5		0	0				
Total %	69.2	1		3.4	26.4		0	0		1.7	98.3	

		North Washington St From North			h Washingt From South			Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Tota
ık Hour Analysis From 0	7:00 to 08:4	5 - Peak Lo	fl							er a compression in india
ak Hour for Entire Interse	ction Begin	s at 07:45								
07:45	289	5	294	12	95	107	0	0	0	401
08:00	294	6	300 +	15	101	116	0	0	0	410
08:15	349	2	351	22	120	142	0	0	0	493
08:30	352	6	358	17	130	147	0	0	o l	505
Total Volume	1284	19	1303	66	446	512	0	0	0	1815
% App. Total	98.5	1.5	4	12.9	87.1		0	0		
PHF	.912	.792	.910	.750	.858	.871	.000	.000	.000	.899
eak Hour Analysis From 0	7:00 to 08:4	5 - Peak 1 o		.750	.858	.871	.000	.000	.000	
ak Hour for Each Approa		:	or a comment page	2.55						
. 07	:45		()	8:00		07	:00		-	

Ö	7:45		08	3:00		07	:00			
+0 mins.	289	5	294	15	101	116	0	0	0	
+15 mins.	294	6	300	22	120	142	0	0	o i	
+30 mips.	349	2	351	17	130	147	0	0	0	
+45 mins.	352	6	358	11	103	114	0	0	0	
Total Volume	1284	19	1303	65	454	519	0	0	0	
% App. Total	98.5	1.5		12.5	87.5		0	0	_	
PHF	.912	.792	.910	.739	.873	.883	.000	.000	.000	

N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA Weather: Clear

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

Page No : 1

Groups Printed- Trucks

			North Washington St From North			North Washington St From South			Medford St From West			** TV To these condensations and the condensation and the condensations and the condensation and the condensations are condensations and the condensations are condensations and the condensations are condensa	
Sta	art Time	Thru	Right	Peds	Left	Thru	Peds	Left :	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
	07:00	7	0	0	0	11	0	()	0	0 -	0	18	18
	07:15	21	0	0	2	15	0 -	0	0	()	0	38	38
	07:30	32	J	0 ;	è	18	0	0	0	0	0	52	52
	07:45	27	0	0	0	21	0	0	0	0	0	48	48
	Total	87	1	0	3	65	0	0	0	0	0	156	156
	08:00	26	0	0	1	20	0	0	0	0	0	47	47
	08:15	24	0	0 -	0	17	0	0	0	0	0	41	41
	08:30	14	0	0	()	12	0	0	0	0	0	26	26
	08:45	26	0	0	0	18	0	0	0	0	0	44	44
	Total	90	0	0	1	67	0	0	0	0	0	158	158
	d Total	177	3	0	4	132	0	0	0	0	0	314	314
Ap	prch %	99,4	0.6		2.9	97.1		0	0		•	w	J
	Fotal %	56.4	0.3		1.3	42		0	Ü		0	100	

· · · · · · · · · · · · · · · · · · ·	North Washington St From North				i Washingto From South		100.00			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From ()			fl		· · · · · · · · · · · · · · · · · · ·				t. C	Ann and it is a sometimen
Peak Hour for Entire Interse	ction Begin:	s at 07:30								
07:30	32	I	33	1	18	19	0	n	0	52
07:45	27	0	27	0	21	21	0	o o	0	48
08:00	26	0	26	1	20	21	ő	ő	0	47
08:15	24	0	24	0	17	17	0	ŏ	ő	41
Total Volume	109	· ·	110	2	76	78	0	ñ	0	188
% App. Total	99.1	0.9		2.6	97.4	, ,	ő	ő		100
PHF	.852	250	.833	.500	.905	.929	.000	.000	.000	.904

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

The state of the s									
0	7:30		0′	7:15		0.	7:00		
±0 mins.	32	l	33	2	15	17	0	0	0
+15 mins.	27	0	27	1	18	19	Ő	Ü	ő
+30 mins.	26	()	26	0	21	21	ñ	ő	ŏ
+45 mins.	24	0	24	1	20	21	ŏ	ő	ő
Total Volume	109	1	110	4	74	78	n n	á	0
% App. Total	99.1	0.9		5.1	94.9		ő	0	<b>*</b>
PHF	.852	.250	.833	.500	.881	929	.000	.000	.000
		- William test accounts			-001		.000	WW	.000

## Accurate Counts

N/S Street: North Washington Street

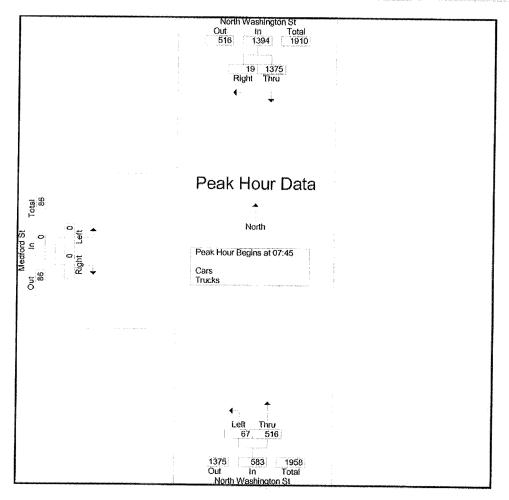
E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

978-664-2565

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

		i Washingto From North			Washingto rom South	on St		Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 0	7:00 to 08:4	5 - Peak 1 o	fl			· conditionamental and a con-			·	
Peak Hour for Entire Interse	ction Begins	s at 07:45								
07:45	316	5	321	12	116	128	0	6	0	449
08:00	320	6	326	16	121	137	ŏ	ő	0	463
08:15	373	2	375	22	137	159	0	ő	ő	534
08:30	366	6	372	17	142	159	0	0	ŏ	531
Total Volume	1375	19	1394	67	516	583	0	Ô	Ŏ.	1977
% App. Total	98.6	1.4		11.5	88.5		Ö	0	٠.	12//
PHF	.922	.792	.929	.761	.908	.917	.000	.000	.000	.926

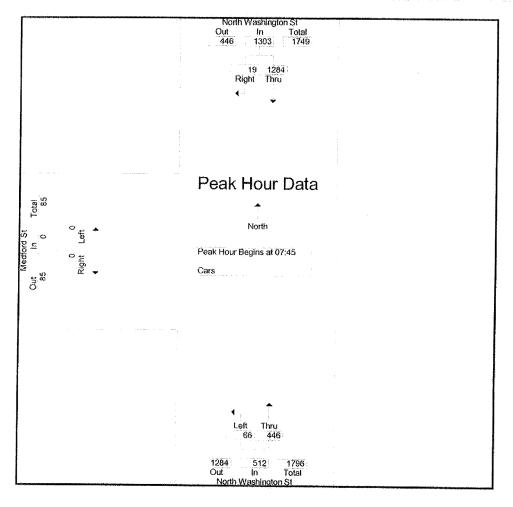


N/S Street: North Washington Street

E/W Street: Medford Street City/State : Boston, MA Weather : Clear

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

		r Washingto From North			Washington From South			Medford St From West		
Start Time	Thru	Right	App. Total	Left .	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 0			of I	******					······································	
Peak Hour for Entire Interse	ection Begin	s at 07:45								
07:45	289	5	294	12	95	107	0	0	0 1	401
08:00	294	6	300	15	101	116	0	0	0	416
08:15	349	2	351	22	120	142	0	0	0	493
08:30	352	6	358	17	130	147	0	Ö	ő	505
Total Volume	1284	19	1303	66	446	512	0	0	ō	1815
% App. Total	98.5	1.5		12.9	87.1		0	Ö		10,75
PHF	.912	.792	.910	.750	.858	.871	.000	.000	.000	.899



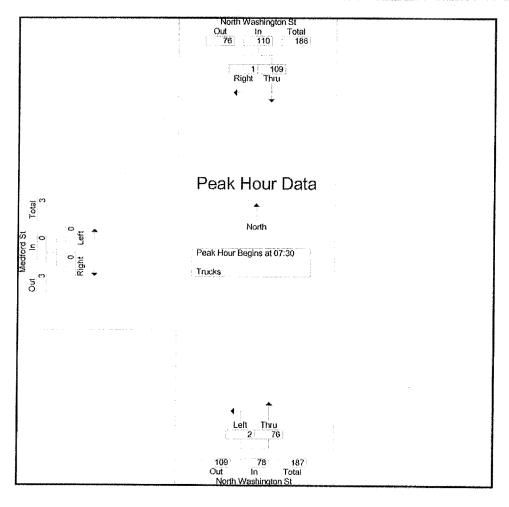
N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

File Name : 06040002 Site Code : 06040002 Start Date : 9/26/2006

		a Washingto From North			Washingto			Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 0	7:00 to 08:4	5 - Peak Lo	fl					9		
Peak Hour for Entire Interse	ction Begin	s at 07:30								
07:30	32	1	33	ı	18	19	0	0	0	52
07:45	27	()	27	0	21	21	0	0	o	48
08:00	26	0	26	1	20	21	Ö	0	0	47
08:15	24	0	24	0	17	17	0	0	0 :	41
Total Volume	109	1	110	2	76	78	0	0	Ô	188
% App. Total	99.1	0.9	•	2.6	97.4		0	.0	-	
PHIF	.852	.250	.833	.500	.905	.929	.000	.000	.000	.904



## Accurate Counts

N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

978-664-2565

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

Page No :1

				C	roups Print	ed- Cars - "	Frucks					
		Washington om North	St		Washington om South	St		edford St om West				
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	237	5	2	9	121	0	0	0	9	11	372	383
16:15	215	3	2	12	143	3	0	0	7	12	373	385
16:30	238	4	2	5	152	0 :	0	0	8	10	399	409
16:45	261	5	1	12	131	3	0	0	3	7	409	416
Total	951	17	7	38	547	6	0	0	27	40	1553	1593
17:00	234	8	1	9	160	0.	0	0	23	24	411	435
17:15	228	2	2	14	148	0 :	0	Ü	13	15	392	407
17:30	255	2	į	10	146	1	0	O	10	12	413	425
17:45	239	1	2 -	15	167	0	0	Ü	8	10	422	432
Total	956	1.3	6	48	621	1	0	0	54	61	1638	1699
Grand Total	1907	30	13	86	1168	7	0	0	81	101	3191	3292
Appreh %	98.5	1.5		6.9	93.1		0	0				
Total %	59.8	0.9		2.7	36.6		Ü	0		3.1	96.9	
 Cars	1757	30	:	84	1017	:	0	0		0	0	2989
% Cars	92.1	100	100	97.7	87.1	100	0	0	100	0	0	90.8
Trucks	150	0		2	151		0	Ó		0	0	303
% Trucks	7.9	0	0	2.3	12.9	0	0	0	0	0	0	9.2

		n Washingto From North			n Washingt From South			Medford St From West		
Start Time	Thru	Right	App. Total	Left :	Thru	App. Total	Left	Right	App. Total	Int. Total
eak Hour Analysis From I	6:00 to 17:4	5 - Peak 1 c	of I					100 100000 1000		
eak Hour for Entire Interse										
17:00	234	8	242	9	160	169	0	0	0	411
17:15	228	2	230	14	148	162	0	0	0	392
17:30	255	2	257	10	146	156 -	0	0	0	413
17:45	239	1	240	15	167	182	0	0	0	422
Total Volume	956	13	969	48	621	669	0	0	0	1638
% App. Total	98.7	1.3		7.2	92.8		0	0	+	
PHE	.937	406	.943	.800	.930	.919	.000	.000	.000	.970

Peak Hour for Each Approach Begins at:

cioni ioi cacii Appro	ach negins at	i							
	6:45		17	7:00		16	00:		
+0 mins.	261	5	266	9	160	169	0	0	0
+15 mins.	234	8	242	14	148	162	0	0	0
+30 mins.	228	2	230	10	146	156 -	0	0	0
+45 mins.	255	2	257	1.5	167	182	0	0	0
Total Volume	978	17	995	48	621	669	Ö	Ö	0
% App. Total	98.3	1.7		7.2	92.8		0	0	
PHF	.937	.531	.935	.800	.930	.919	.000	.000	.000

### Accurate Counts

N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

978-664-2565 File Name: 06040002 Site Code : 06040002

Start Date : 9/26/2006

Page No : 1

					Groups	Printed- Ca	rs					
		Washington om North	St		Washingtor om South	ı St		ledford St rom West				
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	211	5	2	9	108	0	0	0	9	11	333	344
16:15	199	3	2 .	12	121	3	0	0	7	12	335	347
16:30	215	4	2	5	128	0	0	O	8	10	352	362
16:45	237	5	1	12	106	3	0	0	3	7	360	367
Total	862	17	7	38	463	6	Ō	0	27	40	1380	1420
17:00	219	8	1	8	142	0 -	0	0	23	24	377	401
17:15	210	2	2	14	132	0 ]	0	O	13	15	358	373
17:30	244	2	1	10	130	1	0	0	10	12	386	398
17:45	222	l	2 -	14	150	0	0	0	8	10	387	397
Total	895	13	6	46	554	I	0	0	54	61	1508	1569
Grand Total	1757	30	13	84	1017	7	0	0	81	101	2888	2989
Appreh %	98.3	1.7		7.6	92.4		0	0				
Total %	60.8	1		2.9	35.2		0	0		3.4	96.6	

· · · · · · · · · · · · · · · · · · ·		Washington Serom North	St		Washingto rom South	on St		Medford St From West		. :
Start Time	Thru	Right /	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 10	5:00 to 17:4:	5 - Peak Lof l								
Peak Hour for Entire Interse	ction Begins	s at 17:00								
17:00	219	8	227	8	142	150	0	0	0	377
17:15	210	2	212	14	132	146	0	0	0	358
17:30	244	2	246	10	130	140	0	0	0	386
17:45	222	1	223	14	150	164	0	0	0	387
Total Volume	895	13	908	46	554	600	0	0	0	1508
% App. Total	98.6	1.4		7.7	92.3		0	0		
PHF	.917	.406	923	.821	.923	.915	.000	.000	.000	.974

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 Peak Hour for Each Approach Begins at:

our for Each Approa	en isegins a	t.							
16	:45		11	7:00		10	6:00		
+0 mins.	237	5	242	8	142	150	0	0	0
+15 mins.	219	8	227	14	132	146	0	0	0
+30 mins.	210	2	212	10	130	140	0	0	0 '
+45 mins.	244	2	246	14	150	164	0	0	0
Total Volume	910	17	927	46	554	600	0	0	0
% App. Total	98.2	1.8		7.7	92.3		0	0	
PHF	.932	.531	.942	.821	.923	.915	.000	.000	.000

N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

-664-2565 File Name: 06040002 Site Code: 06040002

Start Date : 9/26/2006

Page No : 1

						'rinted-Tru	cks					
		Washingtor om North	St		Washingto om South	n St		ledford St rom West				
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
16:00	26	0	0	0	13	0	0	()	0	0	39	39
16:15	16	0	0	0	22	0	0	0	0	0	38	38
16:30	23	0	0	0	24	0	0	()	0	()	47	47
16:45	24	0	0	0	25	0 .	0	0	0	0	49	49
Total	89	0	0	0	84	0	0	0	0	0	173	173
17:00	15	0	0	1	18	0	0	0	0	0	34	34
17:15	18	()	0	0	16	0	0	0	0	0	34	34
17:30	11	0	0	0	16	0	0	()	0	0	27	27
17:45	17	0	0 .	l	17	0	Ö	0	0	0	35	35
Total	61	0	0	2	67	U	0	0	0	0	130	130
Grand Total	150	0	0	2	151	0	0	0	Ü	0	303	303
Appreh %	100	0		1.3	98.7		0	0				
Total %	49.5	0		0.7	49.8		0	0		0	100	

		) Washington From North	ı St		Washingto From South			Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 16	5:00 to 17:4	5 - Peak 1 of	1							
Peak Hour for Entire Interse	ction Begin	s at 16:00								
16:00	26	0	26	0	13	13	0	Ü	0	39
16:15	16	0	16	0	22	22	0	. 0	0	38
16:30	23	0	23	0	24	24	0	0	0	47
16:45	24	0	24	0	25	25	0	0	0	49
Total Volume	89	0	89	0	84	84	0	0	0	173
% App. Total	100	0		0	100		0	0		
PHF	.856	.000	.856	.000	.840	.840	.000	.000	.000	.883

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

10	:00		16	:15		16	5:00		
±0 mins.	26	0	26	0	22	22	0	0	0
±15 mins.	16	0	16.	0	24	24	0	0	0
+30 mins.	23	0	23	0	25	25	0	0	0
+45 mins.	24	0	24 -	1	18	19	0	0	0
Total Volume	89	0	89	1	89	90	0	0	0
% App. Total	100	0	ĺ	1.1	98.9		0	0	
PHF	.856	.000	856	.250	.890	.900	.000	.000	.000

N/S Street: North Washington Street

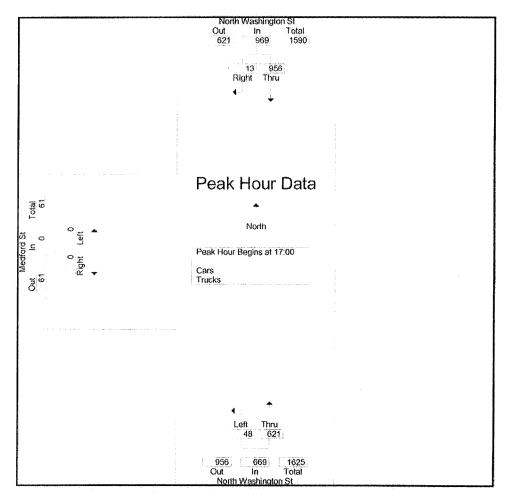
E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

3-664-2565

File Name : 06040002 Site Code : 06040002 Start Date : 9/26/2006

		Washingto	n St	North	Washingto		· · · · · · · · · · · · · · · · · · ·	Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 16	6:00 to 17:4									
Peak Hour for Entire Interse	ction Begin	s at 17:00								
17:00	234	8	242	9.	160	169	0	0	0	411
17:15	228	2	230	14	148	162	0	0	0	392
17:30	255	2	257	10	146	156	0	0	0	413
17:45	239	1	240	15	167	182	0	0	0	422
Total Volume	956	13	969	48	621	669	0	Q	0 (	1638
% App. Total:	98.7	1.3		7.2	92.8		0	0		
PHF	.937	.406	.943	.800	.930	.919	.000	.000	.000	.970



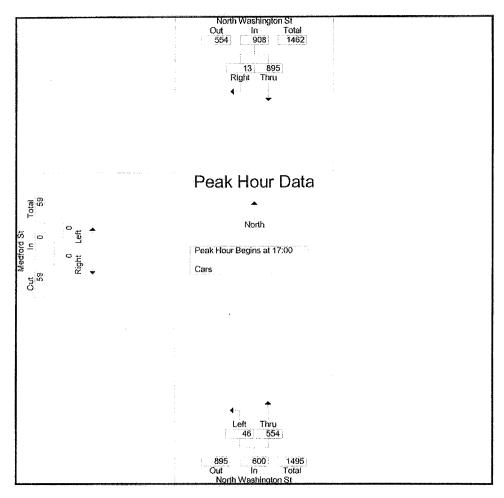
N/S Street: North Washington Street

E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

File Name: 06040002 Site Code : 06040002 Start Date : 9/26/2006

1		Washingto		North I	Washingto	on St		Medford St From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From I	6:00 to 17:4	5 - Peak I o	fl							
Peak Hour for Entire Interse	ection Begin	s at 17:00								
17:00	219	8	227	8	142	150	0	()	0	377
17:15	210	2	212	14	132	146	0	0	0	358
17:30	244	2	246	10	130	140	0	0	0	386
17:45	222	ı	223	1.4	150	164	0	0	0	387
Total Volume	895	13	908	46	554	600	0	0	0	1508
% App. Total	98.6	1.4	1	7.7	92.3		0	0		
PHF	.917	.406	.923	.821	.923	.915	.000	.000	.000	.974



### Accurate Counts

N/S Street: North Washington Street

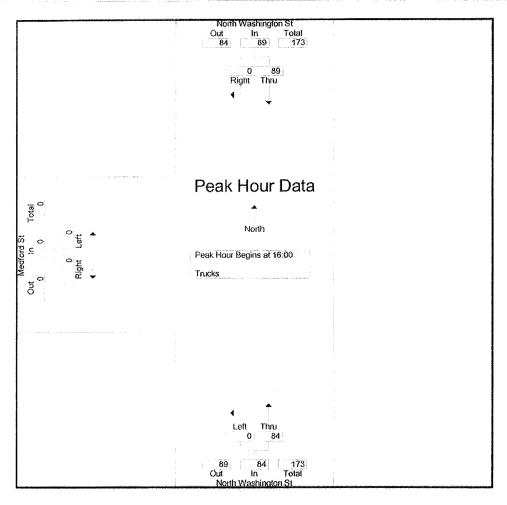
E/W Street: Medford Street City/State: Boston, MA

Weather : Clear

978-664-2565 File Name : 06040002

Site Code : 06040002 Start Date : 9/26/2006

		Washingto From North	n St		Washingto rom South	on St		Medford St From West	The second secon	
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 10	5:00 to 17:4:	5 - Peak Lo	f I							
Peak Hour for Entire Interse	ction Begins	s at 16:00								
16:00	26	0	26	0	13	13	0	0	0	39
16:15	16	0	16	0	22	22	0	0	0	38
16:30	23	0	23	Ö	24	24	0	-0	0	47
16:45	24	0	24	0	25	25	0	0	0	49
Total Volume	89	0	89	0	84	84	0	0	0	173
% App. Total	100	0	:	.0	100		0	Q		
PHF	.856	.000	.856	.000	.840	.840	.000	.000	.000	.883



N/S Street: Canal Street E/W Street: Causeway Street City/State: Boston, MA Weather: Clear File Name : 51680001 Site Code : 51680001 Start Date : 10/6/2005

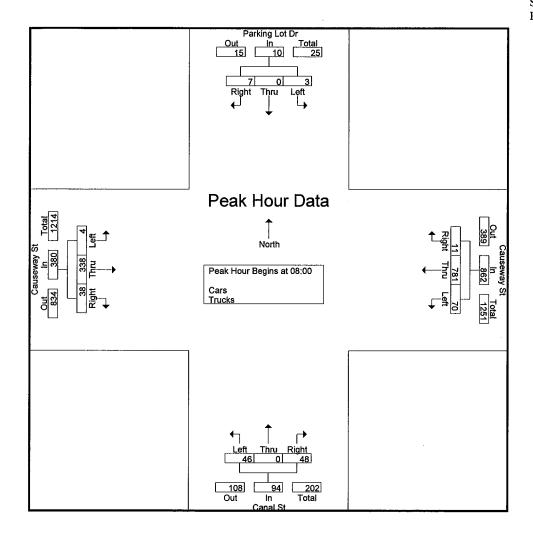
Page No : 1

Groups Printed- Cars - Trucks

	I	Parking	Lot Dr			Cause	way St	•		Can	al St			Cause	way St				
		From	North_			From	East			From	South			From	West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	1	0	0	21	15	128	1	16	10	0	11	111	0	64	4	21	169	234	403
07:15	0	0	0	29	4	151	0	12	4	0	9	147	0	67	2	35	223	237	460
07:30	0	0	0	54	7	142	0	14	4	0	9	138	0	66	6	24	230	234	464
07:45	0	0	0	54	14	193	4	25	8	0	12	198	0	96	10	34	311	337	648
Total	1	0	0	158	40	614	5	67	26	0	41	594	0	293	22	114	933	1042	1975
				i					i								ı		
08:00	0	0	3	44	11	188	4	30	12	0	9	260	2	93	5	38	372	327	699
08:15	1	0	0	63	21	202	1	18	8	0	15	298	1	88	8	42	421	345	766
08:30	1	0	2	73	10	190	4	18	13	0	14	236	0	68	14	49	376	316	692
08:45	1	0	2	_ 54	28	201	2	8	13	0	10	230	1	89	11	30	322	358	680
Total	3	0	7	234	70	781	11	74	46	0	48	1024	4	338	38	159	1491	1346	2837
Grand Total	4	0	7	392	110	1395	16	141	72	0	89	1618	4	631	60	273	2424	2388	4812
Apprch %	36.4	0	63.6		7.2	91.7	1.1		44.7	0	55.3		0.6	90.8	8.6				
Total %	0.2	0	0.3		4.6	58.4	0.7		3	0	3.7		0.2	26.4	2.5		50.4	49.6	
Cars	1	0	3		107	1319	2		64	0	70		2	548	56		0	0	4594
% Cars	25	0	42.9	100	97.3	94.6	12.5	100	88.9	0	78.7	99.9	50	86.8	93.3	100	0	0	95.5
Trucks	3	0	4		3	76	14		8	0	19		2	83	4		0	0	218
% Trucks	75	0	57.1	0	2.7	5.4	87.5	0	11.1	0	21.3	0.1	50	13.2	6.7	0	0	0	4.5

		Parking	Lot Dr			Cause	eway St			Car	nal St			Cause	way St		
		From	North			Fron	n East			From	South			Fron	n West		
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Ana	lysis Fro	m 07:00	to 08:4	5 - Peak	1 of 1												
Peak Hour for E	Entire Int	ersectio	n Begin	s at 08:00	)												
08:00	0	0	3	3	11	188	4	203	12	0	9	21	2	93	5	100	327
08:15	1	0	0	1	21	202	1	224	8	0	15	23	1	88	8	97	345
08:30	1	0	2	3	10	190	4	204	13	0	14	27	0	68	14	82	316
08:45	1	0	2	3	28	201	2	231	13	0	10	23	1	89	11	101	358
Total Volume	3	0	7	10	70	781	11	862	46	0	48	94	4	338	38	380	1346
% App. Total	30	0	70		8.1	90.6	1.3		48.9	0	51.1		1.1	88.9	10		
PHF	.750	.000	.583	.833	.625	.967	.688	.933	.885	.000	.800	.870	.500	.909	.679	.941	.940

File Name: 51680001 Site Code : 51680001 Start Date : 10/6/2005 Page No : 2



N/S Street: Canal Street E/W Street: Causeway Street City/State: Boston, MA Weather: Clear File Name : 51680001 Site Code : 51680001 Start Date : 10/6/2005

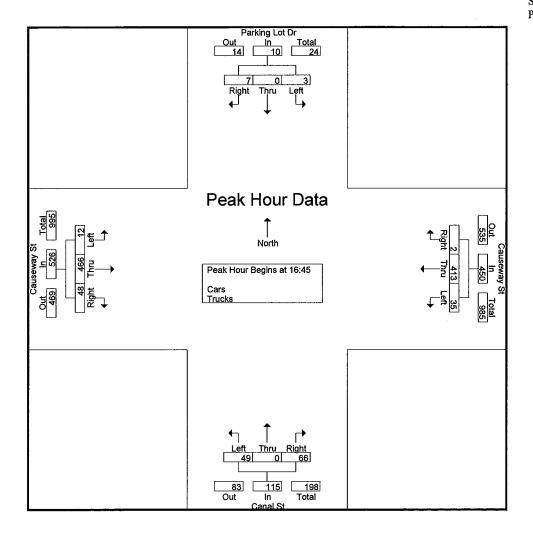
Page No : 1

Groups Printed- Cars - Trucks

	I	Parking	Lot D	,		Cause	way St		- micou	Cana	al St			Cause	way St				
		From	North			From	East	*		From	South			From	West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu, Total	Int. Total
16:00	0	0	1	72	3	72	3	36	13	0	22	141	1	111	16	29	278	242	520
16:15	2	0	5	72	8	99	2	36	6	0	18	181	3	108	16	52	341	267	608
16:30	0	0	1	59	9	85	1	40	12	0	17	161	4	89	12	44	304	230	534
16:45	1	0	3	85	10	98	1	24	22	0	14	183	4	116	13	32	324	282	606
Total	3	0	10	288	30	354	7	136	53	0	71	666	12	424	57	157	1247	1021	2268
									-										
17:00	2	0	2	94	7	100	1	57	12	0	25	228	2	113	12	61	440	276	716
17:15	0	0	1	77	12	109	0	45	7	0	17	211	2	121	14	62	395	283	678
17:30	0	0	1	75	6	106	0	21	8	0	10	150	4	116	9	47	293	260	553
17:45	0	0	0	86	5	100	0	14	23	0	19	172	3	111	9	54	326	270	596
Total	2	0	4	332	30	415	1	137	50	0	71	761	11	461	44	224	1454	1089	2543
Grand Total	5	0	14	620	60	769	8	273	103	0	142	1427	23	885	101	381	2701	2110	4811
Apprch %	26.3	0	73.7		7.2	91.9	1		42	0	58		2.3	87.7	10				
Total %	0.2	0	0.7		2.8	36.4	0.4		4.9	0	6.7		1.1	41.9	4.8		56.1	43.9	
Cars	3	0	6		59	714	5		95	0	135		11	842	101		0	0	4672
% Cars	60	0	42.9	100	98.3	92.8	62.5	100	92.2	0	95.1	100	47.8	95.1	100	100	0	0	97.1
Trucks	2	0	8		1	55	3		8	0	7		12	43	0		0	0	139
% Trucks	40	0	57.1	0	1.7	7.2	37.5	0	7.8	0	4.9	0	52.2	4.9	0	0	0	0	2.9

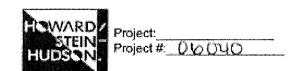
		Parking	g Lot D	r		Cause	eway St			Car	nal St			Cause	eway St		]
		From	North			Fron	n East			Fron	South 1			Fron	n West		
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Anal	lysis Fro	m 16:00	) to 17:	45 - Peak	1 of 1						_				_		
Peak Hour for E	ntire Int	ersectio	n Begi	ns at 16:4	5												
16:45	1	0	3	4	10	98	1	109	22	0	14	36	4	116	13	133	282
17:00	2	0	2	4	7	100	1	108	12	0	25	37	2	113	12	127	276
17:15	0	0	1	1	12	109	0	121	7	0	17	24	2	121	14	137	283
17:30	0	0	1	1	6	106	0	112	8	0	10	18	4	116	9	129	260
Total Volume	3	0	7	10	35	413	2	450	49	. 0	66	115	12	466	48	526	1101
% App. Total	30	0	70		7.8	91.8	0.4		42.6	0	57.4		2.3	88.6	9.1		
PHF	.375	.000	.583	.625	.729	.947	.500	.930	.557	.000	.660	.777	.750	.963	.857	.960	.973

File Name : 51680001 Site Code : 51680001 Start Date : 10/6/2005 Page No : 2



		dford (Cars)		Crossing Ca	useway (Pe	eds)	
in the state of th	Left (West)	Right (East)	EoM N	EOM S	WOM N	Wom s	Ped S mecliforci
7:00-7:15	THL M IIII T	(4)	0	0	9	3	E & W
7:15-7:30	(G)	T 1111 T	0	(3)	ЛI (3)	2	1111 1111
7:30-7:45	HLT III T	1	6	(1)	0	0	等 等 等 等 等 等 等 等 等 等 等 等 等 等 等 等 等 等 等
7:45-8:00	(C) (M) (M) (M) (M) (M) (M) (M) (M) (M) (M	## II F	0	3	<u>(6)</u>	(5)	まままます。 (3) まままます。 (3) まままます。 (4) まままます。 (5) まままます。 (6) まままます。 (7) まままます。 (7) まままます。 (7) まままます。 (8) まままます。 (9) ままままます。 (1) まままます。 (1) まままます。 (1) まままます。 (2) まままます。 (3) まままます。 (4) まままます。 (5) まままます。 (6) まままます。 (7) ままままます。 (7) まままままままままままままままままままままままままままままままままままま
3:00-8:15	(3) (1) THE HEE	HHT 1	0	0	3	(4)	THE
3:15-8:30	## T ## ##   (1)	(4)	6	(4)	(S)	(2)	#####################################
3:30-8:45		H+T1	0	3	3	4	班 # # # # # # # # # # # # # # # # # # #
3:45-9:00	W .HT	#H* 11	0	4	4	  (9)	######
- 9	67	25	2		15	14	HH 11
		3					169 139

13 308 P P P 25

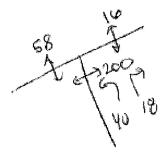


9/26/06
Date: 9124100
By: Kaithin
ALA TABLE

### TRAFFIC COUNTS WORKSHEET

	STR	EET: MEDFORD S	STREET	STREET: CA	(PEYOS) AUSEWAYSTREET
TIME	Left (west)	Right (EOST)	Peds (south)	ivest	East
4:00 PM	# 11	6	m m m in m m in m m in	<b>m</b>	<b>III</b> (i)
4:15 PM	III.III.IIII I		HI HI HI HI	WITH 3	
4:30 PM	WT N		IN I		
4:45 PM	WI WINK	PHT Control of the co	W W W W	MMMMM (2)	
5:00 PM	M W O	WT III	<b>米米米米</b>	WE HE WE	
5:15 PM	W W O III		WE W		MAL YORK
5:30 PM	WW (D)	W (Lb)	M M M M	UM I	
5:45 PM	THY WITH		and the second s	WW ()	JAK II

4:30-40 18 200 58 16 5:30



N/S Street: Canal Street E/W Street: Valenti Way City/State: Boston, MA Weather: Clear File Name : 51680002 Site Code : 51680002 Start Date : 10/6/2005

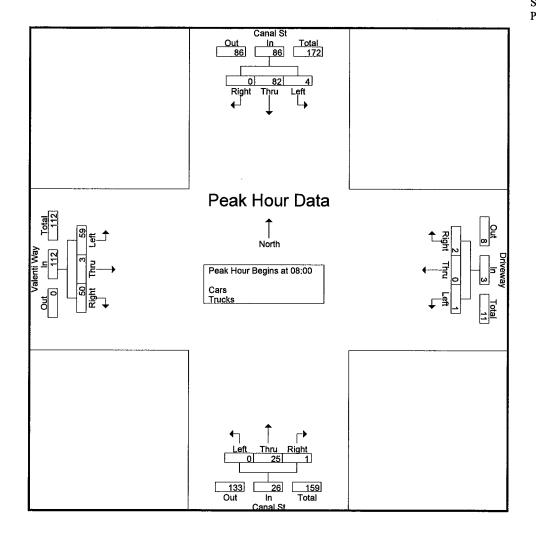
Page No : 1

Groups Printed- Cars - Trucks

								210400	* ******	Curb	A A GOILL						_		
		Can	al St			Drive	way			Cana	al St			Valen	ti Way		]		
		From	North_			From	East			From	South			From	West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	10	0	34	0	0	0	5	0	6	0	3	20	0	9	26	68	45	113
07:15	1	6	0	50	0	0	0	20	0	3	0	7	12	1	7	37	114	30	144
07:30	3	7	0	25	0	0	0	13	0	1	0	5	12	1	6	7	50	30	80
07:45	0	21	0	58	0	0	1	30	0	5	0	12	9	0	9	57	157	45	202
Total	4	44	0	167	0	0	1	68	0	15	0	27	53	2	31	127	389	150	539
08:00	1	14	0	129	0	0	0	29	0	5	0	14	15	2	13	110	282	50	332
08:15	2	19	0	164	0	0	1	26	0	5	0	26	8	1	8	78	294	44	338
08:30	0	20	0	135	1	0	0	36	0	7	0	31	19	0	12	55	257	59	316
08:45	1	29_	0	96	0	0	1	34	0	8	1_	20	17	0	17	77	227	74	301
Total	4	82	0	524	1	0	2	125	0	25	1	91	59	3	50	320	1060	227	1287
Grand Total	8	126	0	691	1	0	3	193	0	40	1	118	112	5	81	447	1449	377	1826
Apprch %	6	94	0		25	0	75		0	97.6	2.4		56.6	2.5	40.9				
Total %	2.1	33.4	0		0.3	0	0.8		0	10.6	0.3		29.7	1.3	21.5		79.4	20.6	
Cars	8	124	0		1	0	3		0	36	1		103	5	79		0	0	1809
% Cars	100	98.4	0	100	100	0	100	100	0	90	100	100	92	100	97.5	100	0	0	99.1
Trucks	0	2	0		0	0	0		0	4	0		9	0	2		0	0	17
% Trucks	0	1.6	0	0	0	0	0	0	0	10	0	0	8	0	2.5	0	0	0	0.9

		Can	al St			Driv	veway			Caı	nal St			Valer	nti Way	A. B B. J.	
		From	North			Fror	n East			From	South			Fron	ı West		
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Ana	lysis Fro	m 07:00	) to 08:	45 - Peak	1 of 1						<u>-</u>						
Peak Hour for E	Entire Int	tersectio	n Begi	ns at 08:00	)												
08:00	1	14	0	15	0	0	0	0	0	5	0	5	15	2	13	30	50
08:15	2	19	0	21	0	0	1	1	0	5	0	5	8	1	8	17	44
08:30	0	20	0	20	1	0	0	1	0	7	0	7	19	0	12	31	59
08:45	1	29	0	30	0	0	1	1	0	8	1	9	17	0	17	34	74
Total Volume	4	82	0	86	1	0	2	3	0	25	1	26	59	3	50	112	227
% App. Total	4.7	95.3	0		33.3	0	66.7		0	96.2	3.8		52.7	2.7	44.6		
PHF	.500	.707	.000	.717	.250	.000	.500	.750	.000	.781	.250	.722	.776	.375	.735	.824	.767

File Name : 51680002 Site Code : 51680002 Start Date : 10/6/2005 Page No : 2



N/S Street: Canal Street E/W Street: Valenti Way City/State: Boston, MA Weather: Clear File Name : 51680002 Site Code : 51680002 Start Date : 10/6/2005

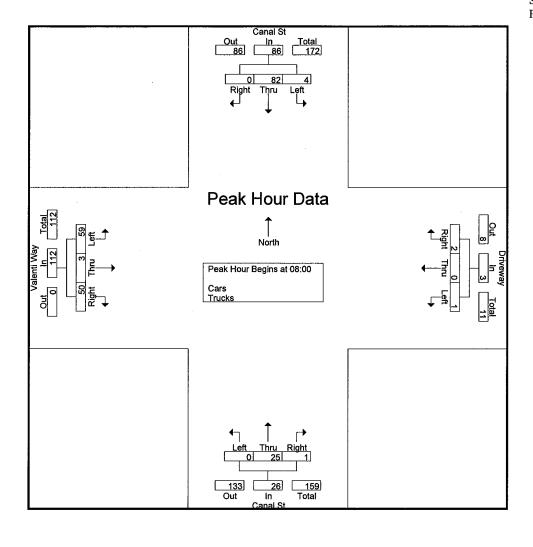
Page No : 1

Groups Printed- Cars - Trucks

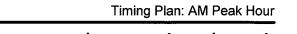
		Can	al St			Drive		•	1111100		al St			Valen	ti Way	•			
		From	North			From	East			From	South			From	West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	0	10	0	34	0	0	0	5	0	6	0	3	20	0	9	26	68	45	113
07:15	1	6	0	50	0	0	0	20	0	3	0	7	12	1	7	37	114	30	144
07:30	3	7	0	25	0	0	0	13	0	1	0	5	12	1	6	7	50	30	80
07:45	0	21	0	58	0	0	1	30	0	5	0	12	9	0	9	57	157	45	202
Total	4	44	0	167	0	0	1	68	0	15	0	27	53	2	31	127	389	150	539
08:00	1	14	0	129	0	0	0	29	0	5	0	14	15	2	13	110	282	50	332
08:15	2	19	0	164	0	0	1	26	0	5	0	26	8	1	8	78	294	44	338
08:30	0	20	0	135	1	0	0	36	0	7	0	31	19	0	12	55	257	59	316
08:45	1	29	0	96	0	0	1	34	0	8	1	20	17	0	17	77	227	74	301
Total	4	82	0	524	1	0	2	125	0	25	1	91	59	3	50	320	1060	227	1287
Grand Total	8	126	0	691	1	0	3	193	0	40	1	118	112	5	81	447	1449	377	1826
Apprch %	6	94	0		25	0	75		0	97.6	2.4		56.6	2.5	40.9				
Total %	2.1	33.4	0		0.3	0	0.8		0	10.6	0.3		29.7	1.3	21.5		79.4	20.6	
Cars	8	124	0		1	0	3		0	36	1		103	5	79		0	0	1809
% Cars	100	98.4	0	100	100	0	100	100	0	90	100	_100	92	100	97.5	100	0	0	99.1
Trucks	0	2	0		0	0	0		0	4	0		9	0	2		0	0	17
% Trucks	0	1.6	0	0	0	0	0	0	0	10	0	0	8	0	2.5	0	0	0	0.9

1.11		Can	al St		Driveway					Car	nal St		Valenti Way				
		From	North			Froi	n East	From South From West									
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Ana	lysis Fro	m 07:00	) to 08:	45 - Peak	1 of 1												
Peak Hour for I	Intire In	tersectio	n Begi	ns at 08:00	)												
08:00	1	14	ō	15	0	0	0	0	0	5	0	5	15	2	13	30	50
08:15	2	19	0	21	0	0	1	1	0	5	0	5	8	1	8	17	44
08:30	0	20	0	20	1	0	0	1	0	7	0	7	19	0	12	31	59
08:45	1	29	0_	30	0	0	1	1	0	8	1	9	17	0	17	34	74
Total Volume	4	82	0	86	1	0	2	3	0	25	1	26	59	3	50	112	227
% App. Total	4.7	95.3	0		33.3	0	66.7		.0	96.2	3.8		52.7	2.7	44.6		
PHF	.500	.707	.000	.717	.250	.000	.500	.750	.000	.781	.250	.722	.776	.375	.735	.824	.767

File Name : 51680002 Site Code : 51680002 Start Date : 10/6/2005



	<b>▶</b>	-	•	1	•	•	4	<b>†</b>	~	1	<b>↓</b>	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	4	Į.		<b>4</b> ↑	7		<b>∱</b> î≽		<u> </u>	<b>ተ</b> ጉ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12	11	12	10	10	10
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	umili Suringo askas graficist	50	deceleration and the second	50	50	50
Trailing Detector (ft)	0	0′	0	0	0	. 0	4474154454	0	TO STORE	0	0	m
Turning Speed (mph)	15		9	15		9	15		9	15	DR 2020 THE SHIP	9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1,00	0.91	0.91
Ped Bike Factor	K PA JOSEPH LINE BERNES ET TIME F		0.69	ari den in	eroden denteren er de 1919 de 4 de	Cartillion: sucritaideodosu e licha-drochitoli	e Auth Grundstoze z werrazus	0.97	MELLIL Productiveness our	0.94	oldiophi(10):p1/stanta.acm	одиороворович воли в.
Fit			0.850	ireal (arri	4420,000	0.850	arabik dik	0.977	r og stillen g		0.980	0.850
Fit Protected	0.950	0.989	AMELIACIO FLORIDO DE SERVICIONOS. ALE:	nikini nikalah dalah dari	0.980		00000000	90° 9, 30° 2 98 ay 22 130 ay 94 12.79	200 M/16 (200 Miles (175, 1799 Miles	0.950	***********************	20.200.00.00.00.00
Satd. Flow (prot)	1493	1611	1468	0	3162	1509	0	2834	0	1560	2893	1306
Flt Permitted	0.950	0.989		to control of the first professional trap	0.980	SPECIFICAL COMPLESSOR	N N AN COMPANY OF THE PROPERTY.		1 http://www.holy.co.co.	0.166	94    4    94    94    95    95    95    95    95    95    95    95    95    95    95    95    95    95    95	STRAFES ROLL FOR THATE
Satd. Flow (perm)	1493	1611	1014	1130000	3162	1509	i 10 m	2834	0	256	2893	1306
Right Turn on Red		3 96 3/10/1 7/10/4/3.2 00010	Yes			Yes			Yes			No
Satd. Flow (RTOR)	6. Oktober 1991	la(eRomación	145	ni aratan a	inite ac	80	MH)	12		arranet de	SHIDATISH S	1960, 1 <sub>0</sub> 0, 15 m 1
Headway Factor	1.04	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.09	1.09
Link Speed (mph)		30	eran eran		30			30			30	Namen Albanda Santa Albanda
Link Distance (ft)		309			183			111			268	
Travel Time (s)		7.0		VIII (Halle)	4.2	ilania (Hadi	Current Property	2.5	udwy berend	tarografiji	6.1	
Volume (vph)	217	158	119	101	128	230	0	423	58	323	1007	592
Confl. Peds. (#/hr)	har ar Albert	ining man	190	line are sub	Minaria.	umphores	ilematicise	ining day	102	102	Samuel Li	(A)PPIN
Peak Hour Factor	0.81	0.85	0.82	0.84	0.76	0.78	0.54	0.96	0.73	0.90	0.94	0.83
Heavy Vehicles (%)	11%	6%	10%	7%	9%	7%	23%	16%	17%	8%	10%	5%
Adj. Flow (vph)	268	186	145	120	168	295	0	441	79	359	1071	713
Lane Group Flow (vph)		238	_ 145	0	288	295	0	520	0	359	1234	550
Turn Type	Split	as proparables <u>a</u> s em	Perm	Split	Odresolicated <b>and the</b>	pt+ov		0000000-0000000000000000000000000000000		D.P+P		ustom
Protected Phases	2	2		5	5	5.6	e Corvey of the	1		6	16	6
Permitted Phases			2			- ^		4	045-73-31-647-5	1		1
Detector Phases	2	2	2	5	5	5 6		1	180	6	16	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	1	¥157	8.0		8.0		8.0
Minimum Split (s)	31.0	31.0	31.0	25.0	25.0	07.0	0.0	25.0	0.0	25.0	04.0	25.0
Total Split (s)	31.0	31.0	31.0 20.7%	25.0	25.0 16.7%	87.0 58.0%	0.0 0.0%	32.0	0.0	62.0	94.0 62.7%	62.0
Total Split (%) Maximum Green (s)	20.7%	27.0	20.7%	21.0	21.0	30.0%	0.0%	28.0	0.0% 2	58.0	02.170	41.3 <i>7</i> 6 58.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		ing a salah da salah	3.0	askaning kao	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	Lag	Lag	Lag	Lead	Lead	and the state of the state of	autorea (an	Lead	San Company	Lag	an a thinks	Lag
Lead-Lag Optimize?	Lag	Lag	Lag	LCGG	LCau			LCAG		Lag		Lag
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	and the second		2.0	ally and a street	2.0		2.0
Recall Mode	None	None	None	None	None		(	C-Max		None		None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		`	7.0	18 (1722)	7.0	S Britis of Control of S	7.0
Flash Dont Walk (s)	20.0	20.0	20.0	14.0	14.0		Seriest (A)	14.0		14.0		14.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0	orten orten action	0		0
Act Effct Green (s)	24.5	24.5	24.5	certario de la composición della composición del	17.5	71.3	arekinin (TVI)	42.3	us 1147319051](1961)	92.1	96.1	96.1
Actuated g/C Ratio	0.16	0.16	0.16	270V. 15.35	0.12	0.48		0.28		0.61	0.64	0.64
v/c Ratio	0.89	0.90	0.51	***************************************	0.78	0.39	and the application for the	0.64	nengerment bisterikas	0.61	0.67	0.66
Control Delay	95.3	96.9	14.3		79.3	17.9		53.3		27.3	20.1	22.8
Queue Delay	0.0	0.0	0.1	s salata seeta Patrius fili (1)	0.0	0.0	uniseenmentellender	0.0	1 margin a 1000 april 600 (61 fil 61 fil)	0.0	0.1	0.0



The Merano

	-		₩	₹	_	١,	1	1		₹	•
Lane Group	EBL	EBT)	EBR V	VBL WBT	WBR	NBL	NBT	NBR-	SBL	SBT	SBR
Total Delay	95.3	96,9	14.4	79.3	17.9	THE SECURITY OF THE SECURITY O	53.3	Paragarta	27.3	20.2	22.8
LOS	F	F	В	Ε	В	HERE ALBERTHER THE SERVICE	D	TOR STUDENT SET OF SELECTION	C	C	С
Approach Delay		76.3		48.2		FULL STATE OF THE	53.3	didhji,	ot Says an	22.1	GENERAL SE
Approach LOS	596 C 1 K K 11600 (20 ) K C 120 IV. I	E	178 F R R I I R R P W R F W . 1 841 174 11	D		2017018-002-00-00-00-00-00-00-00-00-00-00-00-00	D		kirokroliko iliku darif disolokilik	С	CONTRACTOR CONTRACTOR
Queue Length 50th (ft)	215	238	0	146	120		250		208	415	367
Queue Length 95th (ft)	#286	#348	46	161	137	START STARTS	<b>#385</b>	on the NASE. I patricular companies	320	532	476
Internal Link Dist (ft)	MINISTER OF	229		103	Antonius i		- 31	Harris Miles	cardio (1966)	188	
Turn Bay Length (ft)	OF THE PARTY OF TH	The control of the co	and the second of the second o	and the second s	***************************************						9-080-2-04-X-2-010-04-04-04-04-04-04-04-04-04-04-04-04-04
Base Capacity (vph)	269	290	301	443	831		807	Laurent de la company	665	1847	834
Starvation Cap Reductn	0	0	0	0	0	anner of mile on a coline de a mile and a colle fo	0	**************************************	0	0	0
Spillback Cap Reductn	0	0.	4	0	0	Adalah da	0	amigratica de la compa	. 0	58	. 0
Storage Cap Reductn	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.80	0.82	0.49	0.65	0.35		0.64		0.54	0.69	0.66

Intersection Summary
Area Type:
Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 38.7

Intersection Capacity Utilization 77.9%

Intersection LOS: D

n 77.9% ICU Level of Service D

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street

<b>₩</b> ø1	<b>♣</b> ø2	<b>♦</b> ø5	<b>№</b> ø6
	STA SUBSTITUTE OF STATE	25、1000年11日1日	

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer.

	•	†	~	1	لړ	4
Lane Group	NBL	NBT:	NBR	SBL	SBR	SBR2
Lane Configurations	ሻ	î»		ሻ	77	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	
Lane Width (ft)	10	13	13	12	12	
Storage Length (ft)	01	Walter	0	25	0	Figure 1 and 1
Storage Lanes	1	ninganungangang.	0	. 1	2	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	TO THE DESCRIPTION OF THE PROPERTY OF THE PROP
Leading Detector (ft)	50 0	50	r a sakan	50	50	
Trailing Detector (ft)	15	0.	9	0 15	0 9	
Turning Speed (mph) Lane Util. Factor	1.00	1.00	1.00	1.00	9 0:88	
Ped Bike Factor		0.97	1.00	0.94	0.00	LUU
Frt 17-12-14-14-14-14-14-14-14-14-14-14-14-14-14-	Harrier (1984)	0.987			0.850	
Flt Protected	0.950	0.001	isa salahan	0.950	J. 000	
Satd. Flow (prot)	1532	1709	0	Zenan Kasanan Sasaran Sasaran	2613	0
Flt Permitted	0.950			0.320		
Satd. Flow (perm)	1532	1709	0	550	2613	0
Right Turn on Red	00480 2 95000 0 CP00275 P4030		Yes		PESSEL IN CHEST PROPERTY.	Yes
Satd. Flow (RTOR)		11			6	
Headway Factor	1.09	0.96	0.96	1.00	1.00	1.00
Link Speed (mph)	10100000	30	Skiellouie e	Halling of the	i (O) (III.)	
Link Distance (ft)		347	xx. (xx. xx. xx. xx. xx. xx. xx. xx. xx.	thousens over pass and his three	CACALATAN MATURA	
Travel Time (s)	ilo pinathy	7.9	itilesisiasa		Silanggang	
Volume (vph)	281	589	38	47	1143	
Confl. Peds. (#/hr)	0.04	0.04	90	90	0.04	33
Peak Hour Factor	0.94	0.94	0.63	0.69	0.91	0.58
Heavy Vehicles (%) Adj. Flow (vph)	10% 299	11% 627	3% 60	4% 68	9% 1256	
Lane Group Flow (vph)		687	00		1290	
Turn Type	Prot			D.Pmc	CONTRACTOR CONTRACTOR	
Protected Phases	5	1	utona propin		1	
Permitted Phases	History His You	Ulda presidenti di Seco		1	•	
Detector Phases	5	1	atheropies (II)	ession <b>1</b>	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	26.0	25.0	Translatura	25.0	25.0	
Total Split (s)	26.0	74.0	0.0	74.0	74.0	0.0
Total Split (%)	26.0%	HHAN MALWEYSLESSES	0.0%	74.0%	70794	CONTRACTOR AND CONTRACTOR CONTRAC
Maximum Green (s)	21.0	69.0	COTTON THE NAMED IN	69.0	69.0	
Yellow Time (s)	3.0	3.0	Mark Mark	3.0	3.0	
All-Red Time (s)	2.0	2.0	PAS-41 SEC-41	2.0	2.0	
Lead/Lag		Piulin Kun	Warrant?	400	- Kicangala	
Lead-Lag Optimize?	2.0	2.0		0.0	2.0	
Vehicle Extension (s) Recall Mode	2.0 None (	2.0		2.0 C-Max(	2.0	
Walk Time (s)	7.0	iviax -ر 7.0	POWER TO THE BACK	ا iviax ا-د 7.0	7.0	
Flash Dont Walk (s)	9.0	8.0	Till the state of	8.0	8.0	# WEFF 76- 100 FOR THE PARTY OF
Pedestrian Calls (#/hr)	9.0	0.0		0.0	0.0	
Act Effct Green (s)	21.3	70.7		70.7	70.7	
Actuated g/C Ratio	0.21	0.71		0.71	0.71	
v/c Ratio	0.91	0.57	nunciao della Religia di	0.17	0.70	
		• .				

•	<b>†</b>	~	1	لړ	4
NBL	NBT	NBR	SBL	SBR	SBR2

Lane Group	+NBL	NBT	NBR ( SBL	SBR	SBR2	annami Kristic	e estremos un material preside	
Control Delay	75.7	12.2	6.4	11.2				A Company
Queue Delay	0.0	0.5	0.0	165.1	6,000,000,000 again far gallering processes consistent the smallers and them. My games, and with the state obtained all		ak crossisk is co. Al is ci interviews individualskip procession same democratic be who by a	
Total Delay	75.7	12.7	6.4	176.2		grgyddauth (1911)	era arang kan	Tribugues
LOS	Ε	В	Α	F				
Approach Delay	en anskri	31.8					r elle i kanadarise bullat. Kanadaris	linger on
Approach LOS		С						
Queue Length 50th (ft)	200	340	13	240			di 1954 yan <u>ene</u> n	Partition.
Queue Length 95th (ft)	#351	472	21	322				
Internal Link Dist (ft)		267		deportunit				MATCHELL
Turn Bay Length (ft)			25					
Base Capacity (vph)	337	1211	389	1849	and the second state of the second	i kangsapayan in	eri kelangan pangangan panga	
Starvation Cap Reductn	0	199	0	149				
Spillback Cap Reductn	0.4	0	erchile <del>-</del> ne O	903			The Property of the Control	THE WALLS
Storage Cap Reductn	0	0	0	0				NATE AND AND RESIDENCE
Reduced v/c Ratio	0.89	0.68	0.17	1.36	all profit in the second	galagikakan <b>a</b> kan	e e e e e e e e e e e e e e e e e e e	All HALL (IP)

# Intersection Summary Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 45 (45%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 110.6

Intersection Capacity Utilization 62.9%

Intersection LOS: F
ICU Level of Service B

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 332: Valenti Way & North Washington Street

<u></u>	<b>↑</b> ø5
	PROPERTY OF THE PROPERTY OF TH

	1 1	•	•-		•				
Lane Group	NBL NBT	SBT	SBR	SEL	SER		antarii ulifaasi oo o	ethinia produkte	
Lane Configurations		ተተተ			777				
Ideal Flow (vphpl)	1900 1900	BASE MALE BANKS VARIABLE	Complete and the second	1900	1900	tali krajistiko	utilalishe), sin	alapan esta area	
Total Lost Time (s)	4.0 4.0	4.0	4.0	4.0	4.0		**************************************		THE STATE OF
Leading Detector (ft)		50	diline uza		50				
Trailing Detector (ft)	A HOUSE STATE	0	HARREW WARREN		0	rinfice as force entractic	er Erminani bilang	504.545 a best and extra	
Turning Speed (mph) Lane Util. Factor	15 1.00 1.00	0.91	9 1.00	15 1.00	9 0.76				Betamiene ci
Fit	1.00 1.00	0.91	1.00	1.00	0.76	inaran ilini kalikatan		ana sa	
Fit Protected			Patrallian May 1815		0.050				THE THROUGH THE A DECIMAL OF
Satd. Flow (prot)	. 0 0	4759	0	0	3347	DE TETTO SUPERAL TONS		SERVICE SERVICE	
Flt Permitted			altri otter o Tapini. (.)			oest - Princip Hill State	PARKE NERADERRADER		
Satd. Flow (perm)	0 0	4759	1 i 0	-0	3347	All portrains	de Physica	The Mersien	Water March Co.
Right Turn on Red			Yes	*1.000.100.000.0000.000	Yes	***************************************	***************************************		
Satd. Flow (RTOR)			er derkenten.		103				Ary (2009-company NGC Tables (2009-comp
Headway Factor	1.00 1.00	1.00	1.00	1.00	1.00	nominate #Booking on Windows			xxx265.80070000000000
Link Speed (mph)	30	30	Half (Line Line 2)	30					
Link Distance (ft)	397 9.0	273 6.2		177 4.0					Technological
Travel Time (s) Volume (vph)	0 0	1143	0	4.0	334			HAMILTONIAN	
Peak Hour Factor	0.92 0.92		0.92	0.92	0.94				
Heavy Vehicles (%)	0% 0%	9%	0%	0%	10%				MARINE A LANGUAGIA MARINENI (MARINENI MARINENI MARINENI MARINENI MARINENI MARINENI MARINENI MARINENI MARINENI
Adj. Flow (vph)	0 0		0	0	355				i i The god with
Lane Group Flow (vph)	0 0	1256	Ô	0	355	TORNEL TO STREET AND A STREET AND A STREET	ENDIA PERSONAL DE LOS DESCRIPTORES		
Turn Type	Pauling and the pauling	elenting desir		С	ustom	Characteristical	ligitatika kananan da	er dan Maria	mid <b>al</b> ikani
Protected Phases		5	odbahaphy Mrza I No.	effect a below to be a gala	1			SE SECULO SE ANASONAMENTOS	
Permitted Phases	cesal comments and tests	Migrae garangan	ali nemates	alogaile auto	and Sittle			nii kaasango g	haddalari men
Detector Phases		5 8.0			8.0			POSTAL INCIDENCE	Harakata Kanasatan
Minimum Initial (s) Minimum Split (s)		24.0	Americki (1914)	annine d	0,⊍ 24.0	let deceasible	NAPA-Provinces	2.0048.891.891.041.0106.0	
Total Split (s)	0.0 0.0	57.0	0.0	0.0	43.0			report the party	
Total Split (%)		The second secon	CONTROL OF THE PARTY OF THE	Control of the contro	43.0%	STEP CARRO			
Maximum Gréen (s)		ensonate a statistica de la companio del companio del la companio del companio de la companio de la companio de la companio del companio de la companio del compa		ing parameter	39.0			. To 101 (1901) (192	iliani ji ji ji jilkini k
Yellow Time (s)		3.0			3.0	COLUMN TO THE PROPERTY OF THE			production and cold of the American States and Cold
All-Red Time (s)		1.0	AND STREET		1.0		and the Section		resessiblition to be
Lead/Lag	State of Williams								
Lead-Lag Optimize? Vehicle Extension (s)	Managarawania	2.0			2.0	MORE MENTAL SERVICE	and a design of the second	ille se se se alle sales se la constant	
Recall Mode	nies nies dat Welfing	2.0 Ped	gase File	Tarania (	2.0 C-Max		Cartille 1965	and the state of the same	Jenginser Worth (1915)
Walk Time (s)	SIET SEE MARKET MARKET	7.0		lan zonezenia	7.0		· martine de la company		
Flash Dont Walk (s)		9.0	gamandalah	ning ya.	9.0		a de participante	Alexander	
Pedestrian Calls (#/hr)	A CONTRACTOR O	0			0				
Act Effct Green (s)		30.6	patrilli ili	Photoar	61.4		telline/III si	tili Maritinali	
Actuated g/C Ratio		0.31		USBUDAN KANA	0.61	STORESTER SERVICES AND	TOURS CONTRACTOR OF THE PROPERTY OF THE PROPER	WASSESSED OF STREET STREET, ST	AND THE PROPERTY OF THE PARTY.
v/c Ratio		0.86	ar in h	ing publication.	0.17			Strangening	madulik N
Control Delay	a anta de as cambanes com	38.3	Market ar year one		3.2	ettiksi laikultaanis		PODENIE ZASEGON	
Queue Delay Total Delay	ASSEMBLES	0.4 38.7	egydd arffe	CBALDIHINI	0.0 3.2		живиры		Hillia Ballany Toni
Total Delay LOS	escare, in vertex in the	36.7 D		artical National	3.2 A	ar en linerium	COMPANIES NO	a department	HAR WANTED
Approach Delay	#46.2 long mentat (#48.2 km) Common	38.7		Manina (GAN)					Elessional months
			<del></del>						<del></del>



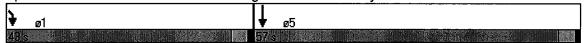
Lane Group	NBL NBTA	SBT SBR	SELFISER VI	incomplete the state of the sta
Approach LOS	ng pangangan	in Dilleration		
Queue Length 50th (ft)		315	8	
Queue Length 95th (ft)		367	m54	
Internal Link Dist (ft)	317	193	97	
Turn Bay Length (ft)		ALTONOMY OF	Professional Section 1	
Base Capacity (vph)		2522	2095	
Starvation Cap Reductn		665		
Spillback Cap Reductn		90	264	
Storage Cap Reductn	nt automob <mark>iliz</mark> i	oli (1004)		
Reduced v/c Ratio		0.68	0.19	
Intersection Summary		anagana ngangan p		
<i>y</i> ,	ther			
Cycle Length: 100	saan saara yaar iir iir iir iir Haasa Bacalaan	i angles en unitari hitografi. Latinge en unitari hitografi.	i de la Carlo de la competitación de la compet	
Actuated Cycle Length: 1			0000 0000 000 000 000 000 000 000 000	A. A
Offset: 57 (57%), Refere	nced to phase	1:SER, Start o	of Green	
Natural Cycle: 50			CONSIDERATA NA SERVICIO DE LA CONTRA	
Control Type: Actuated-0			ir (Carect, merseral) (Later)	
Maximum v/c Ratio: 0.86				
Intersection Signal Delay	r. 30.9		Intersection LOS: C	

ICU Level of Service A

Analysis Period (min) 15 m Volume for 95th percentile queue is metered by upstream signal.

Intersection Capacity Utilization 36.5%

Splits and Phases: 4120: North Washington Street & Beverly Street



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Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	-INEU	NER -	PERMIT
Lane Configurations		7		ተተ					44		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12	eses e e e e e e e e e e e e e e e e e
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	THE TRANSPORT OF THE PROPERTY OF THE	50	H I N N H H W A S X A I N S X X X X	50		H-CO-18 TH 1890 MM (CO. A.S. B. S. S.C.C.)	0000078 991 6A-00 (LOT-FITT) IS 60 A	RW-MINNEHITE RATIOSOS SO	50	* (	
Trailing Detector (ft)	algarite(D)	0	and the day	0		MENTAL PLANS	ing state (a-7) of the	istrati žilanti.	0	a de la descripción de la constanta de la cons	
Turning Speed (mph)	15	9	15	The second secon	9	15	and the same of th	9	15	9	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt		0.865									
Flt Protected	non series	dan da	and the same of th			1930			0.950		
Satd. Flow (prot)	0	1736	0	3505	0	0	0	0	3273	0	doctringstor to except to definite the little of a high a.
Flt Permitted			AMPATIA	Hillionia		r diam'i	April 1994		0.950	edial metal	
Satd. Flow (perm)	0	1736	0	3505		O	0	0	3273	0	
Right Turn on Red	arai en en en	Yes	The state of the	tarikan bibilik	No	-800 (F) (A) (A		No	No	Control of the Control	
Satd. Flow (RTOR)	4.00	218					7 2 2				
Headway Factor	1.00	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30			30 579			30 347		30 320		AND THE MACHINES
Link Distance (ft)	264 6.0	HARRY OF	Karaman Later	13.2		are an extending	7.9	er ar ar ar ar ar	- 3∠0 7.3		Maria Produce
Travel Time (s) Volume (vph)	0.0	74	0	669	0	0	7.9	0	7.3 165	0	A TOTAL CONTROL OF THE CONTROL OF TH
Peak Hour Factor	0.92	0.84	0.92	0.92	0.92	0.92	0.92	0.92	0.66	0.92	
Heavy Vehicles (%)	0.32	1%	0.32	3%	0.32	0.32	0.32	0.32	7%	0.92	
Adj. Flow (vph)	0	88	0	727	0,0	0	0	0,0	250	0	enter in the later than the
Lane Group Flow (vph)	0.0	88	0	727	0	0.0	0	d 0	250	0	
Turn Type	\$690 #57 <b>5\$</b> X16614\6097\	ustom	•	,-,					Prot		MISIOPER WINEID
Protected Phases	Kan Marketin an	5				nica concession			6	Carlos	ASSESSED FACE SECTION
Permitted Phases		19 <b>7</b> ./03		, and the second	311300000000000000000000000000000000000	100000000000000000000000000000000000000			KINDONE FOR		
Detector Phases	(Marie Marie Marie Carlos			. 1	Maraka an		Constant (NASI)		6		Partiaguasu
Minimum Initial (s)		8.0		8.0	***************************************				8.0	**************************************	HALL STEWNER THE SHAPE IN SCHOOL SHAPE STEWNERS
Minimum Split (s)	reggerer bleverer Orboder er skrete	13.0	lapitani ses Pariotera	13.0			rii refere Autorio de Alla Normalia Autorio de F		13.0	See danielis	
Total Split (s)	0.0	14.0	0.0	57.0	0.0	0.0	0.0	0.0	29.0	0.0	
Total Split (%)	0.0%		0.0% !		0.0%	0.0%	0.0%	0.0%		0.0%	HEERING COMPANY
Maximum Green (s)		9.0	4.0.00000000000000000000000000000000000	52.0	**************************************	ganna a san ayan Amana yana			24.0		
Yellow Time (s)		3.0		3.0	in the second		rana da mara		3.0		ultipalitation parti
All-Red Time (s)	KERONOVI SEERA SOVE	2.0		2.0	3		\$18.00 X 100 X		2.0	0.044	
Lead/Lag	Procedimental Source	Lead	inalist tena	eren er al <b>al al</b> er er	hour MA district	and of the leading and the	Palisani sani sha	k mbakhama	Lag	****	
Lead-Lag Optimize?	ran namanan katan	Yes 2.0	No. 187 DECEMBER	2.0					Yes 2.0	Hall Manager and the control	1
Vehicle Extension (s) Recall Mode	dans druggen and the	None	to see filling	2.0 C-Max		ractices and back	editi camposta	incerations, su	None		ar 154 Pg (15)
Act Effet Green (s)	s fair backs and	9.0	rasatsii kaasa	69.1	and the second		Planta State He	Designation (Const.)	12.5		
Actuated g/C Ratio		0.09		0.69					0.12		
v/c Ratio	deficients	0.25	agan saga	0.30			(archerenna)	nama nail	0.12		The straight of
Control Delay		1.7		4.2					47.6	1996	liebs Example of the Control of
Queue Delay		0.0		0.0			NOT THE RESERVE		0.1	4.54	
Total Delay		1.7		4.2	3840356		MICHEN .	U80 (5 45)	47.7	Mark State Control	eniegiskipachüşülüküde
LOS		Α		A					D		
Approach Delay	reservation of Children 197	120-100-100-100-100-100-100-100-100-100-	. nekka 100 PS 75 PS 66	4.2	and the Market	meanemarpasse II P		a este carsino de la	47.7	: ::::::::::::::::::::::::::::::::::::	: amaning 6:1176:05.000 \$76.000 \$
Approach LOS				A	unique establicado.		arionne e e com Notarionne e e como	e projektor Karolin jelen jakoni	D		New Journal of the Control of the Co
Queue Length 50th (ft)	was an ended of the	0		42	ornetttar/Pil				78		and a right open de benegigtenen (24 DE SECONS).

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Timing Plan: AM Peak Hour

Intersection Capacity Utilization 31.8%

Analysis Period (min) 15

34: Cooper Street & Sumner Tunnel Off-Ramp

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ICU Level of Service A

				-	_		•		
Lane Group	WBL	WBR	NBL NBT	NBR	SBLL SBT	SBR	NEL	NER	economica and the
Queue Length 95th (ft)	arriving (A)	0.0	1000 see 11 <b>57</b> s		iana alimin tenta 15	nogarijas (190	81	with Mar	colors are
Internal Link Dist (ft)	184		499		267	,	240		
Turn Bay Length (ft)	ri jeynwalki		r yerka makan karangkan . Maka misasa da makan k						arkartakka
Base Capacity (vph)		370	2421				818		
Starvation Cap Reductn	Sugar William	- 0	98 mm 1 10 .	na lawa	gager and 1981	amin ka me	0	amusiki suli	
Spillback Cap Reductn		11	174				83		
Storage Cap Reductn		0	0				0		Accompany of the Re
Reduced v/c Ratio		0.25	0.32				0.34		
Intersection Summary	dunical man			4-21 No. 14 N					
Area Type: C	Other								
Cycle Length: 100	Market 11	line and the		physical s			transition	ang katalon san	in periodici
Actuated Cycle Length:									
Offset: 46 (46%), Refere	enced to	phase 1	:NBT, Start of	Green		25440	Angelouis Sin	and the second	armuni Arginia
Natural Cycle: 40								PRESENT HUNGOVERS NOVEMBRACA	
Control Type: Actuated-	930°00°00°00°00°00°00°00°00°00°00°00°00°0	ated			erini iz Seria ili		ana sur su v		
Maximum v/c Ratio: 0.6	MARKET NO DO NOT DESCRIPTION OF	THOMES EXAMPLE CHARLES IN EXCESS FOR THE PARTY.		a mentional de la company	ET ANTO A TOPOGRAPHICA OF THE COMMENT OF THE COMMEN		~		
Intersection Signal Dela	y: 14.2	enginerana (Historia	TOTAL DESCRIPTION AND AND AND AND AND AND AND AND AND AN	SECULIAR SOUTH DESIGN OF	on LOS: B	anii healeiin d	angggitara)	MARKET STATE	Trabación de
	111 . 41	04 00/	1.0	N. I. I	1 - C O A				

Splits and Phases: 34: Cooper Street & Sumner Tunnel Off-Ramp

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		7	<u>~</u>	<i>-</i>	<b>←</b>	اير	1	4			
Lane Group	EBR	EBR2	WBL2	WBL	WBT	SBL	SBT	SBR	ø2	- ø5	ø6
Lane Configurations	77	Santrollikkas Sil		Ā	<b>4</b> 4	ሾች	ĵ»	7	~	~~~	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	12	16	12	16	12	16	SIFZEDE PROFESSIONE		NA KAMPANIN SA KAMPANIN ANDRA
Storage Length (ft)	0	Audiense der	e de la companya de La companya de la co	25	The second second second	0	andor A	0	457404764		
Storage Lanes	3	**************************************	THE STATE OF THE STATE OF	1		2	0.000	1		Paggagain i fantúinit. E	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	eren eren eren eren eren eren eren eren	aur magaire i ca	la productiva de la compania. La productiva de la compania de la
Leading Detector (ft)	50	50	50	50	50	50	50	50	\$50808666BBB560#58	Gaza Yanara Siran usara	PANCO PARAMETRI PARAMETRI PARA
Trailing Detector (ft)	0	0	0	0	0	0	0	0	e aras		
Turning Speed (mph)	9	9	15	15	46.00 -0.000004 00 80004 00	15	0.6282.630.85110.8.4.56010	9		S	11.2.554 (1.271) 1.28C-202.4 (1847) 1.152.5164
Lane Util. Factor	0.88	1.00	0.95	1.00	0.95	0.97	0.95	0.95		AND THE PARTY OF THE PARTY.	
Frt	0.850	0.850		******************		oods ostalise sauss baketure	0.963	0.850		Account from more larger than the Section of the Se	eren e nomi i o orin do esta de la compania de la c
Flt Protected	The State of the S	777	Germanian de de la company Company	0.950	Frontier (S. 1994)	0.950	40 ps#41 = 1	digitation	ni i zalihir	nation state	
Satd. Flow (prot)	2617	1382	0	1902	3539	3780	1479	1581			
Flt Permitted		ubjetskipe o	munis	0.950	Laboration of	0.950	ne da estado en la composição de la comp	New Allega	and the second of	rendere per seed (orbitel) Et sui en	
Satd. Flow (perm)	2617	1382	0	1902	3539	3780	1479	1581			
Right Turn on Red		Yes	No		Acceptance Acceptance			No		Partellanda	
Satd. Flow (RTOR)		60									
Headway Factor	1.04	1.04	1.00	0.85	1.00	0.85	1.00	0.85	, Programa		diktribiteki care
Link Speed (mph)	440.00000000000000000000000000000000000		***************************************	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	30		30		e anno anno anno anno anno anno anno ann	00-a-480-440-440-450-00-48-5-04 <b>4</b>	envicemble colorismos y burn wew mention occupant. Anaposa
Link Distance (ft)		politica.			125		397		o sulvatru		
Travel Time (s)	***************************************	715700000011000 <u>12</u> 7043	GRASTANIA ROMANIA SA	NO. 11. NO. 1	2.8	troidente d'ace <u>accelerate</u> de Perretación	9.0	o breek i noereskraireele	e-oc/oga <b>e</b> -oce-enough		
Volume (vph)	365	46	54	26	404	786	248	443	11.1		
Peak Hour Factor	0.95	0.77	0.68	0.72	0.92	0.93	0.88	0.91			
Heavy Vehicles (%)	5%	13%	11%	0%	2%	5%	20%	10%	and Andrews		ni internativa
Adj. Flow (vph)	384	60	79	36	439	845	282	487			TERRET SENSE SERVICE SERVICES
Lane Group Flow (vph	which is the second of the sec	. 60	L-14-01	115	439	845	375	394	and higher	la tangking	iliosalevinene waling
Turn Type	custom c		Perm	Perm		Split	F 6	Prot	•		
Protected Phases	TELLIFORNIA I	1111111111	minningen. 4	(44) (44 <u>4</u> 4	Klimar L	56	5 6	5 6		.,,,, 5	6
Permitted Phases		4	1	1 1		FA	EA	56	<b>6</b> 7.51111.625590		
Detector Phases	0.0	0 A	9.0		. 1	56	5 6	9.6	0.0	0.0	4.0
Minimum Initial (s) Minimum Split (s)	8.0 22.0	8.0 22.0	8.0 22.0	8.0 22.0	8.0 22.0			San Diggs (18)	8.0 20.0	8.0 24.0	4.0 8.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	38.0	38.0	38.0	20.0	30.0	8.0
Total Split (%)	42.0%								20%	30%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	30.076	JU.U./0	30.070	16.0	23.0	8% 4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	Strict the strict	ing a <b>M</b>	Haringy (mar)	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	i Carriera			1.0	4.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Parting to		rate e	Lag	Lead	Lag
Lead-Lag Optimize?	I LOUGH		Loud		HYMY	1601.0407.04.027.126.	221.121.12	10.25	HYS	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2,0	2.0	a yanan ka		ili (Marsumote)	2.0	2.0	2.0
Recall Mode	C-Max (						unedin kiriliş elili. S	Mirele (School	None	Max	Max
Walk Time (s)	pindre de la	Mademilian	Santa III ban	damii 2000	had be store	diamentos			7.0	o de la composición dela composición de la composición de la composición dela composición de la composición de la composición dela composición dela composición de la composición de la composición de la composición dela	
Flash Dont Walk (s)		entilerienis (51)						SMP III NA COL	9.0		zunautras 1975/1914/515
Pedestrian Calls (#/hr)	e en chillionna de	enellie min	girantinti.	sjong caaled in	la edhalati	etining i		lana ayanda	50	o Garage	
Act Effct Green (s)	42.0	42.0	secondo de la companya de la company	42.0	42.0	34.0	34.0	34.0	77	- Cornel (400)	
Actuated g/C Ratio	0.42	0.42	en en dans	0.42	0.42	0.34	0.34	0.34	n 18 et al al antares et	er energe of the	
v/c Ratio	0.35	0.10		0.14	0.30	0.66	0.75	0.73			: III III A SEP GANTINENA GOTTISTA
Control Delay	7.4	1.3		20.5	21.2	59.3	65.9	65.0	en (der troppen) yezh Let artak e par ane		
Queue Delay	0.3	0.5	om Standa (1977) P. P.	0.0	0.0	5.8	3.9	6.0	- to 335455.5158435568	ous serenae period fil	coperatifical attribution of the contract of t

	<b>*</b>	4	•	4	پل	Ţ	4
-	•	-	7				

Lane Group	EBR	EBR2 \	MBL2 WBL	WBT	SBL	SBT	SBR	e⊫ø2⊩	in Ø5dir	# Ø6   Black	
Total Delay	7.7	1.9	20.5	21.2	65.1	69.8	71.0	. I Disellation	Serie Barranti	ini kantin turkuna	
LOS	Α	Α	С	С	Ε	Е	Е		- 0 00000		
Approach Delay		i i i zaja	ogadinalia hadiri	21.1		67.7	estilian minn		annagana A		
Approach LOS				С		Ε					
Queue Length 50th (ft)	6	1	48	102	300	272	286		distribution		
Queue Length 95th (ft)	153	0	68	142	m351	m326	m344				
Internal Link Dist (ft)				45	iong are entire	317		unio Mestrica di Sala	19.0440.05.05.0	Startes and A	
Turn Bay Length (ft)			25								
Base Capacity (vph)	1099	615	799	1487	1285	503	538		Naka in	milensingfulin	
Starvation Cap Reductn	279	359	0	0	377	68	97				
Spillback Cap Reductn	. 0	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0	0				
Reduced v/c Ratio	0.47	0.23	0.14	0.30	0.93	0.86	0.89	AL INDE			

Intersection LOS: D

ICU Level of Service A

Intersection Summary
Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 13 (13%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 47.5

Intersection Capacity Utilization 51.9%

Analysis Period (min) 15

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

Splits and Phases: 1862: New Chardon Street & North Washington Street



The Merano



	EDI	Entille	MOT	WOO	ODI)	e opp	No.	4.4	111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111.	
Lane Group	M. EBL#	25 21 28 28 28 28 28 28 28 28 28 28 28 28 28		WBR=	SBU	SBR	Anna and Milaid	A STATE OF THE STATE OF	-36	(Mildestilling)
Lane Configurations	<b>*</b>	ተተተ	<b>^</b> }	HIVETISTEM NULLER CERSTE	¥			TO 156 THE RESIDENCE OF THE SECOND		SE LEKELGUISEN (FILM EURE)
Ideal Flow (vphpl)	1900	P(1), 9, 898 8888 TS, 888 950 000 LUG V 5-9	1900	1900	1900	1900	Althor Division and			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0			6/05/12/98/1999 (T.S.)	
Leading Detector (ft)	50	50	50		50	Chamback Wil	AND THE PERSON NAMED IN	400	approximation	
Trailing Detector (ft)	0	0	0	n 6.542 25547 2858 5459 <u>22</u> 970 695	0			ente con debat 142 la Grand Si		Britisiae nepatrober 455,002
Turning Speed (mph)	15		e de la companya de	9	15	9.		4414		Maria Santa II
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00	PROCESTOS (1885-1886)			ANGEL KELVERSSE
Fitter			Mar Till III	u (Charles Osto	0.932			and the second second	A STATE OF STREET	100000000000000000000000000000000000000
Flt Protected	0.950		0000=		0.976		NCS NEEDS OF THE PARTY.	7, 545 per en 1986 en 198		
Satd. Flow (prot)	1770	4759	3282	0	1694	0		Line model in	Let carpus (1964)	Lagrant to
Flt Permitted	0.222	4750	2002	0	0.976 1694	- 10 C	alatini e e e e e e e e e e e e e e e			
Satd. Flow (perm)	414	4759	3282	Yes	1094	Yes			en and income d	St. A. Carrier St. Part
Right Turn on Red				165	1	169	and the second	ALIAN SOLDAN PART		
Satd. Flow (RTOR) Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	alemo.			attical Co.
Link Speed (mph)	1.00	30	30	1.00	30		in the party	on internet	Santakan Manana.	
Link Distance (ft)		204	244		162	www.euc.ps/24mm	eriol business	10 (A)		
Travel Time (s)	A METERS NEW YORK	4,6	5.5	National Company (1985)	3.7		A GOVERNMENT	11 Language 11 To	a a la agrada la	Maria III
Volume (vph)	1	474	835	1	1	1	(MACALITY STREET)		A CONTRACTOR OF STATE	SECTION STATE
Peak Hour Factor	0.92		0.77	0.92	0.92	0.92	allocate AVA		ari mananga 15	A Company of the
Heavy Vehicles (%)	2%	CHARLES CONTRACTOR CONTRACTOR	10%	2%	2%	2%	es de la rescuenció			44.04 (5772)
Adj. Flow (vph)	1		1084	1	1	1	de constitut d			managaran
Lane Group Flow (vph)	1	A SA KIAGH ANTONOTON	1085	0	2	0			1917 <b>=27</b> 1844514411713141119113465	The contract of the
Turn Type	Perm		MARK Y	andre Programme Angle Schools (1911)			efficierre days	pula Alleri	MARKS TOTAL	
Protected Phases	ZONY POSTA NAMED IN CONTRACT	1	1		5		PERSONAL MARKANAN PARAMETER PARAMETER PARAMETER PARAMETER PARAMETER PARAMETER PARAMETER PARAMETER PARAMETER P	NAC ACTUAL CONTRACTOR NACES	00090-000-00000000000000000000000000000	THE PROJECT SEASON SOUTHWAY
Permitted Phases	1				reguerosas Radio lettoral				eraspeniinii	
Detector Phases	1	1	1	C Marine Marine Marine Marine Marine Committee	5	•				
Minimum Initial (s)	8.0	8.0	8.0		8.0			100 T	a panara	
Minimum Split (s)	28.0		28.0		25.0					
Total Split (s)	65.0	65.0	65.0	0.0	25.0	0.0				
Total Split (%)		2.2% 7		0.0%		0.0%	LUCHEN WE'N'T HE DE TROCK BOOK	CONTRACTOR CONTRACTOR STORY CONTRACTOR	NA NETUSA HOMENADO A PROPERCIOS AP	KORALE, THE RESIDENCE OF THE PERSON OF THE P
Maximum Green (s)	60.0	regii ah aranzalari ala assar	60.0	Hamilton (A)	19.0		power in the second	gyedicus III es 25. A menti a la Salitati	andre 200	
Yellow Time (s)	3.0	3.0	3.0		3.0		S. Maria		2757203010000000000000	ESTERNIC CONTRACTOR
All-Red Time (s)	2.0	2.0	2.0	and the second	3.0	Armenia Arministra	grand annie all	Langue de propinsi	malung terb	\$-37-10H
Lead/Lag	terateza en		weight accesses	***********	austrament en de midestad	AND THE PERSON NAMED AND THE		a zamenna se se su pomo ane d	and more than	
Lead-Lag Optimize?	A TABLE	0.0	• • •		0.0		sa agundalah	1000000		
Vehicle Extension (s)	2.0	2.0	2.0		2.0			and a second line of	MH 100 THE STATE OF	1175
Recall Mode	C-Max C				None		anter to the	E	(a)	
Walk Time (s)	10.0 8.0	10.0 8.0	10.0 8.0		12.0 1.0			Leaving Control	plean special Coll	and the same of th
Flash Dont Walk (s) Pedestrian Calls (#/hr)	0.0	0.0	0.0		0.0	A SECTION		pan a	A ALPEKTA	ile a superior de la company de la compa
Act Effet Green (s)	86.4	86.4	86.4	Contractive Contra	10.0		an hereday	and the second second		robs III lie
Actuated g/C Ratio	0.96		0.96		0.11		25.00.007.27.00		SAN TO VICE	
v/c Ratio	0.00	0.12	0.34		0.01	ALL A SHREET	rai India della			
Control Delay	1.0	0.5	1.1	A 124 S F S F S	31.0			garbert (1995)		nus automobiles († 1886 automobile
Queue Delay	0.0	0.0	0.0		0.0					
Total Delay	1.0	0.5	1.1	AND PERSONS OF THE PERSON OF T	31.0	1941 PS 1842 PS 1848				constant (2005)90\$ 154(65)
LOS	A	A	Α		С					
Approach Delay	A PARTIES AND THE PARTIES AND	0.5	1.1	NAMES OF STREET	31.0		y rojaka iri 99609666000	normani e 1804 i UN 1807 di SSI	1.00	operator per respirator de CAS



Lane Group	EBL	EBT	WBT WBR	SBLA SBR DA	
Approach LOS	1980 maja	A	A	Carrier and Carrier	
Queue Length 50th (ft)	0	0	0	1	
Queue Length 95th (ft)	m0	16	72	7	
Internal Link Dist (ft)		124	164	82	
Turn Bay Length (ft)	miniculari	at tis inst			
Base Capacity (vph)	397	4569	3151	396	
Starvation Cap Reductn	0	0	0	0.5	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	• <b>0</b> • • • • •		ula destination is a company of the
Reduced v/c Ratio	0.00	0.12	0.34	0.01	

## Intersection Summary

Area Type:

Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 0.9

Intersection LOS: A

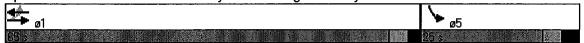
Intersection Capacity Utilization 36.4%

ICU Level of Service A

Analysis Period (min) 15

Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 506: Causeway Street & Legends Way



Movement WBL WBR NBT NBR SBL SBT  Lane Configurations
Anne Configurations
Sign Control         Stop         Free         Free           Grade         0%         0%         0%           Volume (veh/h)         1         45         436         0         0         1227           Peak Hour Factor         0.25         0.75         0.85         0.92         0.92           Hourly flow rafe (vph)         4         60         513         0         0         1334           Pedestrians         Lane Width (ft)         Walking Speed (ft/s)         Valking Speed (ft/s)         Percent Blockage           Right turn flare (veh)         None         Median type         None           Median storage veh)         Upstream signal (ft)         495         111           pX, platoon unblocked         0.74
Grade 0% 0% 0% 0%  Volume (veh/h) 1 45 436 0 0 1227  Peak Hour Factor 0.25 0.75 0.85 0.92 0.92  Hourly flow rate (vph) 4 60 513 0 0 1334  Pedestrians  Lane Width (ft)  Walking Speed (ft/s)  Percent Blockage  Right turn flare (veh)  Median type None  Median storage veh)  Upstream signal (ft) 495 111  pX, platoon unblocked 0.74
Peak Hour Factor 0.25 0.75 0.85 0.92 0.92 Hourly flow rate (vph) 4 60 513 0 0 1334 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) 495 111 pX, platoon unblocked 0.74
Hourly flow rate (vph) 4 60 513 0 0 1334  Pedestrians  Lane Width (ff)  Walking Speed (ft/s)  Percent Blockage  Right turn flare (veh)  Median type  Median storage veh)  Upstream signal (ft) 495 111  pX, platoon unblocked 0.74
Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.74
Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.74
Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) 495 111 pX, platoon unblocked 0.74
Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) 495 111 pX, platoon unblocked 0.74
Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) PX, platoon unblocked 0.74
Median type Median storage veh) Upstream signal (ft)  PX, platoon unblocked  0.74
Median storage veh) Upstream signal (ft) 495 111 pX, platoon unblocked 0.74
Upstream signal (ft) 495 111 pX, platoon unblocked 0.74
pX, platoon unblocked 0.74
VICTORING VINUALIAN ZOD
vC1, stage 1 conf vol
vC2, stage 2 conf vol
vCu, unblocked vol 895 256 513
tC, single (s) 6.8 7.2 4.1
tC, 2 stage (s)
tF (s) 3.5 3.5 2.2
p0 queue free % 98 91 100
cM capacity (veh/h) 211 702 1063
Direction, Lane # WB 1 NB 1 NB 2 USB 1 SB 2
Volume Total 64 256 256 667 667
Volume Left 4 0 0 0 0
Volume Right 60 0 0 0
cSH 613 1700 1700 1700 Volume to Capacity 0.10 0.15 0.15 0.39 0.39
THE RESIDENCE OF THE PROPERTY
Queue Length 95th (ft) 9 0 0 0 0  Control Delay (s) 11.6 0.0 0.0 0.0
Lane LOS B
Approach Delay (s) 11.6 0.0 0.0
Approach LOS B
Intersection Summary
Average Delay 0.4
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

ሻ	†	<b>↓</b>	w	•	<b>\</b>

Movement :	NBL :	NBT	SBIT	SBR	SEL	SER	a horasod kara sa d	41000 B	3 (0749) (12 (0107)	900e 1409-1793	a grane 4
Lane Configurations		412	朴諍			ANT SOULEN A APPLIET DOOR AND ON THE	ILIJANA, SPANJE PLANKETSKY, BLEDSKI DA (1990)	umummas v a sasso		O NOON ON PERON PORTUGUES. NOON	SATE CONTRACTOR AND A SECOND
Sign Control		Free	Free		Stop			and Aluga			1700 E
Grade Volume (veh/h)	153	0% 436	0% 1210	18	0% 0		angining Propinsi		The control electrons		
Peak Hour Factor	0.75	0.92	0.90	0.63	0.92	0.92			Doministr	Tastinati yenib	00420505045
Hourly flow rate (vph)	204	474	1344	29	0.02	0.02		are given	ing comme	lage de la	territari
Pedestrians	Sign Mad Street Street Street Belleville	morelas per per contro			SECOND TO THE POPULATION		MILLEONIA BOYTHAG FAMILY BROTH	TANAU BINA BEBRADAKAN PERU	01.871.5331.831.45V.5V.5V.5V	300000000000000000000000000000000000000	51138400000000000000000000000000000000000
Lane Width (ft)	taraka alimid	deren.	112000 (1000) 1				are the tracking			NA TERM	
Walking Speed (ft/s)		Grandades (24)						unieros veresent	N. HELLER		
Percent Blockage Right turn flare (veh)			AMARI NO				rial and manager of the second	nacioni complicació	i glasifik iki		1041
Median type		er de esta			None		are the same			up, see t	
Median storage veh)	US 1499 H 870 ES JURES	BALESTADE (1753)		e e e e e e e e e e e e e e e e e e e	DEL BURGADA DEL LISTO DA PRAGRE	Charle VIII ac a such a such			0.550,587.5134348900H	naggarism, komiseti	.000 MERION PLANTS AND THE
Upstream signal (ft)		109	497					jetica za ostali Popisili svije	energy is 1997		
pX, platoon unblocked	0.77				0.77	0.77	11 20 11 11 11 11 11	ga Karsari II.	renama wearer was	TROUGH CONTRACT	
vC, conflicting volume vC1, stage 1 conf vol	1373		(S)		2004	687	million great in 2	in very		tra destrict	
vC2, stage 2 conf vol	NEW YORK THE		Vyr.			gar pertinen jarrari	in the same of the same	War en			a kata ta
vCu, unblocked vol	1181				2005	283	, live source beautiful from			ray saya di mendebbahan po	De ir adderesia Sulfix 1 f. 9 G
tC, single (s)	4.1		antiki 8	of the later the	6.8	6.9					
tC, 2 stage (s)	2.2			MAD ANN SIT SIII	0.5	3.3	information.	10111129819ANTUVOII		HALL STREET	
tF (s) p0 queue free %	2.2 55		SE UNIVERSE	an beparakterin	3.5 100	3.3 100	102017-000				
cM capacity (veh/h)	449		andezi (1		22	551		- galletin mer m			
Direction, Lane #	NB 1	NBI20	SB1	SB 2			Managaran	-54-308060			a contraction of
Volume Total	362	316	896	477							
Volume Left	204	0	0	0			THE STATE OF THE S		ADF (I	***	HOLESCH HOLES
Volume Right	0	0"	0	29		segge one of the			eria Protestro	46,9890	
cSH Volume to Capacity	449 0.45	1700 0.19	1700 0.53	1700 0.28	ETEROESTE VIII I	and the					
Queue Length 95th (ft)	0.45 58	0.19	0.55 0	0.26	ne dinkana Pada	LEE AND		induntalija ili a	Enth of Will	A SERVICE STATE	11.01
Control Delay (s)	15.2	0.0	0.0	0.0							ek galamatan
Lane LOS	С		RIKKEHIIETTE BUREPEE								
Approach Delay (s)	8.1	graph (1) i <sup>12</sup> m	0.0	i de la companya de La companya de la co	epitalia (19	Literary to to material to	emedicipasis				Company of
Approach LOS											
Intersection Summary											
Average Delay		<b>Ha</b> yan tayan e	. a <b>e</b> panil	in the state of th	Signatura (Salata (Sal		ing national designation of the	<b>3234</b> (1981)	muug Massari		i dan kalan
			2.7								
Intersection Capacity Util Analysis Period (min)	lization		2.7 57.2% 15		CU Leve	l of Servic	e				

	۶		*	1	4	*	4	<b>†</b>	1	-	Ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
Lane Configurations		413			<b>€1</b> }			4			4	
Sign Control		Free		erur o <del>d</del> Ladrianski (178	Free	amonie (B)	all and the a	Stop		eGilleGLUbb	Stop	
Grade	HERE BOOKS OF STREET	0%	RS-I-LI E-RET-PROPERTILINE-P-E-REPRE	100000000000000000000000000000000000000	0%		00.000.000.000.F 92F400.0004	0%		COO. D. B.	0%	,-a
Volume (veh/h)	6	423	38	50	775	11	.46	0	48	- 3		. 7
Peak Hour Factor	0.50	0.91	0.68	0.63	0.97	0.69	0.88	0.92	0.80	0.75	0.92	0.58
Hourly flow rate (vph)	12	465	56	79	799	16	52	0	60	4	0	12
Pedestrians		alour to the extraction of the pro-	Chillip our beneficieus Afgranic (	HIS DESTRUCTION BETWEEN THE PARTY ST		DC 1100 00 00 00 00 V V V V V V V V V V V	· · · · · · · · · · · · · · · · · · ·			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SCORES IN A THIS SHAFES	Talife 448 Michigan I Reservice
Lane Width (ft)		ereginari		HOUSE WEE				America de la compa		nettierischt i	ng araginaran	Hitelian (1)
Walking Speed (ft/s)	usessatury ogsesy, are quantity see.				NATIONAL DES SEL SELECTION	***************************************	***************************************					
Percent Blockage		hp#MV	water day		ations when	g agradationers	aligner (file)	117427 (9170)	Bayana ara			1894 (1775)
Right turn flare (veh)			000,000,000	anaga (gana kanag seong seong se								
Median type		manga markatiksii	ulkenenne	agastrilla	approprie		g (finiseralys) Agrabaldalli (dad	None		ng sayaan da ayaan qaarad	None	and and the
Median storage veh)	THE PARTY OF THE P	in college of street of course of co.			200 de sudo seu como de en error error	and the second second second second second						
Upstream signal (ft)	manificati	443			204	ortonethe		ur song p	eti ili ili ili	$\mathcal{C}_{1+1}\cap\mathcal{V}_{2+1}$		
pX, platoon unblocked	0.96			0.94			0.97	0.97	0.94	0.97	0.97	0.96
vC, conflicting volume	815	. Januari		521			1087	1490	260	1282	1510	407
vC1, stage 1 conf vol												
vC2, stage 2 conf vol			er Care Combine	partition								
vCu, unblocked vol	762			433			921	1339	157	1123	1360	336
tC, singlê (s)	5.1	Health Francis	redebuter	4.2	, Christ	5 - 4 4 PM ( M)	7.7	6.5	7.3	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.7	udanie.	alleullation	2.2		. alalahi kul	3.6	4.0	3.5	3.6	4.0	3.4
p0 queue free %	98			92			72	100	92	97	100	98
cM capacity (veh/h)	569	maraney.		1054			189	, 135	764	. 127	131	620
Direction, Lane #	EB/1	EB 2	WB 1	WB 2	NB1	SB/1	notegy comm	and the second	Centralia de mara	na Palister Salata	n Kadhiri	0.000
Volume Total	244	288	479	415	112	16	Tell conf	(applicatio	i i mangana	00.000.00	000000	
Volume Left	12	0	79	0	52	4		***************************************	> 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0	The second secon	to Mary 1-14 respectively and more from management	of the property of the same and
Volume Right	2 MAR 0	56	0	16	60	12		bybii) ii		-Joseph M	4.944550141	proprietari
cSH	569	1700	1054	1700	316	316						
Volume to Capacity	0.02	0.17	0.08	0.24	0.36	0.05	us de la	Paring H				(1864) 694)
Queue Length 95th (ft)	2	0	6	0	39	4						
Control Delay (s)	8.0	0,0	2.2	0.0	22.6	17.0	d karana			production of	970,7400	er Harring
Lane LOS	Α		Α		С	С						
Approach Delay (s)	0.4	11.49.44	1.2	ne en en en en en en en Les en	22.6	17.0	amperitiel	<b>S</b> ign (411)	10-24-0	335 AVA	Marian (Adi)	Hart here
Approach LOS					С	С						
Intersection Summary	ini Markaja da	en managarita da		nnuhinak 6756 FF	- 12 Est 0 con 10 f		a - sene Misselferation	ga e makhan meba	morecum	nsanija ve	Harry Paris	No.
Average Delay			2.6									
Intersection Capacity Uti	lization		55.4%	10	U Leve	l of Ser	vice	eng standarda and Maria da Alia da	В	TIPE TELEVISION	ile i i i i i i i i i i i i i i i i i i	1,000,000,000
Analysis Period (min)	THE REPORT OF THE PROPERTY OF	-y.v. yysyttäytävää EEE CEEE SEESSÄNS	15			on the control by the second of the second o	. m. m. 1961 1960 1970 1970 1970 1970	ACCORDED TO SERVE TO SERVE TO SERVE				
Anthony, prob <del>oso</del> <sup>prob</sup> ostini		A Market		and the state						randorda La plateira		

	-	*	₩		7	7				
Movement 1991	myEBT.	EBR	WBL	WBT	NBL	NBR	inikungga pilikung	Children de Salahan	ивичения от	
Lane Configurations	ተተተ	Shirathorness sine	unmasch CD-Afr Andrich	<b>一个个</b>	¥	NAMES OF THE PARTY			makarsan Assimi	PRESENCES AND ADMINISTRATION OF THE PROPERTY O
Sign Control Grade	Free 0%	Till a		Free 0%	Stop	anaga da bakaran 1911 san	Assembleded	and the same	United May	
Volume (veh/h)	469	0	0	720	0% 149	25	ABISE DE TRANSPORTE	11.7 h 14.		
Peak Hour Factor	0.83	0.92	0.92	0.78	0.70	0.89		e de la composition		
Hourly flow rate (vph)	565	0	0	923	213	28	Tanggaran Regard	FORMED IN THE		
Pedestrians						HER A DAIL THE ROLL NOT THE HER MANUAL PROPERTY.	COLORIDANIA ALABORE AND MICHA	THE PROPERTY OF THE PROPERTY O		
Lane Width (ft)		Garatean.	America (A)	P. Barrasana	er on that		eran de de de		same per divisit	district the second
Walking Speed (ft/s) Percent Blockage							ilana ji watan ila	767, 22 (1)		
Right turn flare (veh)				r en					2.500	A STATE OF THE STA
Median type	alle Chennel	S REMOTE UNDER		era uroni dina te ilisti	None	ia, maratika	nerez alt. Guerres	1000000	420000000000000000000000000000000000000	
Median storage veh)	PRINTERNIERU (BARAGERA)		CONTROL CONTROL FORCE		omen kulturumumbilen <b>ib</b> 1600-i	57E	10 Sept. 10	NOS EDECOLÁRIAS CONTREMENTO		adeministration and a first process of the second
Upstream signal (ft)	387		10.1931.13. (1.24.14.) 11.15.17.17.570.1550	309	Lancing Company				ilining permis 40	
pX, platoon unblocked vC, conflicting volume			565		1027	188		and the second		
vC1, stage 1 conf vol	AUGUST STATES				1027	100				
vC2, stage 2 conf vol			MARKET PLAN							
vCu, unblocked vol	CONTRACTOR	CHECOLOGICA CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR	565	EXTERNAL CUPTON DEFIN	1027	188	NATION PROGRAMMENT OF THE PARTY.	Tee of Year en year en artist in out it year		
tC, single (s)	THE STATE OF THE S	dayida 194	4.1		6.8	7.1	al-PSETETH (Ampa) a Carrient nach and	Minimus Lawrence	Lord Holland (1994)	. Department of the Collins
tC, 2 stage (s) tF (s)			2.2		3.5	3.4		Zu sa et sa et s		
p0 queue free %	100000000000000000000000000000000000000	Berry Bullet	100	leggi senia i se 105	8	97				
cM capacity (veh/h)			1017	un pac Marini Marini da	232	803				
Direction, Lane#	EB/1	EB 2	EB 3	WB 1	WB 2	NB 1	ti salamini na swa	DESCRIPTION OF THE PROPERTY OF		
Volume Total	188	188	188	462	462	241	na sanana	Shallan an garag		\$80,658616165
Volume Left	0	0	0	0	0	213			•	
Volume Right	0	1700	0	4700	0	28	aranang lan	i kan ilinga <b>jak</b> a ja	iinni ganta aj	Arthrophic Control
cSH Volume to Capacity	1700 0.11	1700 0.11	1700 0.11	1700 0.27	1700 0.27	253 0.95	and the same of the state of			
Queue Length 95th (ft)	0.11	0.11	0.11	0.21	0.21	219			A.P.	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	87.2		1970 project	er ang en same	
Lane LOS		CONTRACTOR NO ALA	and the state of t	1. Annual 11. 27. 3.18		F				
Approach Delay (s) Approach LOS	0.0	100000000	ortor of the	0.0		87.2 F		istani.	an et distribui	
Intersection Summary	ne nakonala nek	nijorika polikra		as posta digital	<b>Hall H</b> aller		a Pilitarian Dir	all propositions in	ata dan kacamatan Managaran	ir destribit Less constraint (1944)
Average Delay			12.2	The second						THE STATE OF THE S
Intersection Capacity Ut Analysis Period (min)	ilization .	ia entrockati	36.3% 15	,	∪ Leve,	l of Service	amadellisi b	А .	ag a constitute	22 (34)
Analysis relicu (min)	and the violetical	and the	IO On The		11.01.2.11.20.000		A., W.S. 9246,	i terretari in <b>Eyr</b>		er din di
	dirakasi mata		alian da bebas	ation Militaria	lishida ar kasarisa l	and and the	Mei (1966) human ka	allement en	1276	ana manana kata kata kata kata kata kata kata

	•	*	4	<b>†</b>	Ų.	✓					
Movement	EBL	EBR	NBL	NBT	SBT	SBR	- <u>10</u> 18	ii ka na mara	eras encorancemen Sector		IIII HELK - A SHI
Lane Configurations	7	7		<b>†</b>	<b>↑</b>					99.99.958.109.0	BERREIT STREET
Sign Control	Stop	nar verije akori	iliga da da serie da la como de l La como de la como dela como dela como de la como de l	Free	Free		er Horadaria		reledence Geografia		il arbusi
Grade	0%	000048-0000 <u>01-22</u> 9000	755#57#80088# <b>2</b> 5##	0%	0%	hamada Sala Maha <u>a</u> Tababaya	vá siðrinni humina Akandássíkassum		S. 445 R. 65 R. 67 P.	Ar a si vi a commencio de la c	g. zanggar sekerengan ka
Volume (veh/h)	59	42	0	25	87	0	a come a me ani	e de la companya de		AND AND LONG	Halling and the
Peak Hour Factor Hourly flow rate (vph)	0.78 76	0.74 57	0.92 0	0.78 32	0.71 123	0.92	The second second	ANGUNETI (TRAN	ozavija su zas		
Pedestrians	70	3/ <sub>11</sub>		5-1113 <b>2</b>	ı∠ə∵		latiskin i kasalai	Links of the second is a			
Lane Width (ft)		Caracteristics	na saadan	i dell'estato		arangan		maria en al calcada	5/10		
Walking Speed (ft/s)	4,20								(	eniminani (KASARSI)	
Percent Blockage	Nijeti militarahan										A Landard M
Right turn flare (veh)								TO A TO THE OWN OF THE OWN OF THE OWN OWN			***************************************
Median type	None	Maria de pro-	animpondesi	north mu	re and the		ille steel www.			en e	
Median storage veh)	C 10 10 10 10 10 10 10 10 10 10 10 10 10	Manya da da ang sa ang	personal company and a second	COLUMN TARRE	crobiotantariae wayana	Parties planted by the co	erry corrections		SO Production of		STATES CONTRACT
Upstream signal (ft) pX, platoon unblocked		ara en	arktarijih	465	agaalla Afrik	ATAMSHE ST	MISSEN ALCOHOLO			William III	
vC, conflicting volume	155	123	123	ilin and	entelle (Mari		affiliantes.	ter anna anna			
vC1, stage 1 conf vol					141.528.53		i i i i i i i i i i i i i i i i i i i				HODISTON SOFTS
vC2, stage 2 conf vol		er pertuduj	organization		and the Stella	gild Water	el ejalleggi	latera e e e e e e e e e e e e e e e e e e	rii — Timeste Ziniar ee ee ee		
vCu, unblocked vol	155	123	123			Service Consider New Wilder Cons	**************************************	Friends And republishmen subsequences			
tC, single (s)	6.4	6.2	4.1		na Maria			n de Verreiner.		Marin Parallel	
tC, 2 stage (s) tF (s)	3.5	3.3	2.2					Section for Consequence		028.00150000000000000000000000000000000000	
p0 queue free %	ວ.ວ 91	ა.ა 94	100	i biolistica est.	indianament.		alternation of the second				Alara Property
cM capacity (veh/h)	842	934	1477				lasellika lasta tarik	and the second	Jane 14	CENTRALIZATION FOR HISTORY	MATERIAL PROPERTY AND
Direction, Lane #	EB 1	EB 2	NB 1	SB/1		A CONTRACTOR OF THE CONTRACTOR		Temperature and the second		Antal Communication	
Volume Total	76	57	32	123	(1.14 (1.14				<b>表现的侧侧</b>	AT BROOK STATE OF STATE	
Volume Left	76	0	0	123	odesta de	A LOCAL AND A COMMON		Para San Para da Para d	i Paggalai II		
Volume Right	. 0	57	0	0		r la rite (Balling)	E All The Colores	arren mag	Marian di		
cSH	842	934	1700	1700		NEEDE WALLESON AND PLANTED AND AND AND AND AND AND AND AND AND AN	NEC AN OTO JUDINESSEE THE THE THE				
Volume to Capacity	0.09	0.06	0.02	0.07			eri manthire. Bullio del troca	helika arabias	(基)基度 (4)		alskijija er er
Queue Length 95th (ft)	7	5	0	0							
Control Delay (s) Lane LOS	9.7 A	9.1 A	0.0	0.0		Taris in the				EMELLON SERVICE	anget com
Approach Delay (s)	9.4		0.0	0.0				in Frankska a	Mark Series		
Approach LOS	A	106003104 00000	and Complete State So			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Intersection Summary	erani de la de	a de la company	a sama ali	annum a <b>llan</b> asan	NSTO CONTRACTO	in the state of the	usad <b>ali</b> usa ti unun saab	mayra mesara			1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1
Average Delay			4.4			SEPTEMBER SET	196	70.00		TO BROKE	
Intersection Capacity Uti	lization		14.6%	10	CU Leve	l of Servi	ce :	one.	<b>\</b>	THE REAL PROPERTY.	over anner
Analysis David (min)		6.6 %	45	•				100000	raturinalit		ACTIONAL HINE

15

Analysis Period (min)

The best for the second series

	<b>→</b>	-	7	€	<b>←</b>	•	4	<b>†</b>	~	-	ļ	1
Lane Group	owiEBL.	EBT	EBR	-WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<del></del> -ન	7	and a selection	414	7		<b>∱</b> ∱		<b>`</b>	<b>^</b>	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12	11	12	10	10	1000
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	en en interi	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	. 0		Ō	110 200 000 000 000 200	. 0	0	0
Turning Speed (mph)	15		9	15		9	15	ini na marangaya	9	15	J	9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor	7.55.51		0.86		wurszcze	· · · · · · · · · · · · · · · · · · ·		0.99				
Frt	etanta amil	till Back of	0.850			0.850		0.979	ar in this mask the in	harana	Median I	0.850
Flt Protected	0.950	0.976		Kiposham sulo 2k)	0.982		BARTET AND SECTION SECTION	Collegio de Particio de Cara d	rithi Marija	0.950		KOJA NEKOTOKO
Satd. Flow (prot)	1641	1686	1615		3427	1599	0	3318	0	1668	3196	1372
Flt Permitted	0.950	0.976	de des estreves de es	CS-ST-BASSACHRESSSAC	0.730	•				0.155		Sale1883/03/03/03/03/03/03/03/03/03/03/03/03/03
Satd. Flow (perm)	1641	1686	1382	0/	2547	1599	0	3318	0	272	3196	1372
Right Turn on Red	KORPASKA ANTONOMINA	,	Yes	2167.291.0474.042444	EDHALITH (TJATHAYAYAA)	Yes	mantaine an and A	KINGGEROOTS GARDEN	Yes	n Kandarder de energe	III/AKKUG KEMBI	No
Satd. Flow (RTOR)	9444		45	Days Hills, 1970	444000000000000000000000000000000000000	59	o ar alle	12	ly salasa	Milesen en	al ministration	illianiaryesi
Headway Factor	1.04	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.09	1.09
Link Speed (mph)		30			30	Liaguari revere	(4) <b>(4)</b> (4)	30	anneueri	APSER LIVE	30	10.00
Link Distance (ft)	T : SA B SENATER ES ES ES ES TAFACESE.º	309	07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		183	<b>9</b>		111		SA REPTORNED DE MERTADO	268	108886.01888.0487.3 <b>84.280</b> 8.43 <sup>9</sup>
Travel Time (s)		7.0			4.2			2.5		Miles de la company de la comp	6.1	
Volume (vph)	350	141	17	84	149	579	0	623	75	239	977	302
Confl. Peds. (#/hr)	isti palagoni pre	grander (de St	84	on an east and	unitar elektri	an in playing		STANIA MILITAR	31	31	annument)	10000
Peak Hour Factor	0.77	0.87	0.38	0.89	0.90	0.70	0.84	0.91	0.69	0.90	0.79	0.69
Heavy Vehicles (%)	1%	1%	0%-	0%	0%	1%	0%	2%	1%	1%	1%	0%
Adj. Flow (vph)	455	162	45	94	166	827	0	685	109	266	1237	438
Lane Group Flow (vph)	300	317	45	0	260	827	0	794	0	266	1237	438
Turn Type	Split		Perm	Perm		pt+ov			l	D.P+P		ustom
Protected Phases	2	2	SAN MARKET SE		5	56		1.		6	16	6
Permitted Phases	***************************************		2	5		annon Yanan adalah di Adilan Adilah	-400 hadan	**************************************		1	~~~	1
Detector Phases	2	2	2	5	5	56	appeal of	1		6	16	- 6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	A SEPTE A SECURIO COMO COMO MESOS.	aprove connect a single section	8.0	H Nitra en 100 Protestablem en Legion (s.	8.0		8.0
Minimum Split (s)	32.0	32.0	32.0	25.0	25.0		the standarthaus	25.0		25.0		25.0
Total Split (s)	38.0	38.0	38.0	25.0	25.0	60.0	0.0	52.0	0.0	35.0	87.0	35.0
Total Split (%)		25.3%			16.7%	40.0%	0.0%		0.0%	23.3%	58.0%	
Maximum Green (s)	34.0	34.0	34.0	21.0	21.0	# 2 15 L 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	general contractions	48.0	ministra e in Santa	31.0	14 C	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	oza a dilinidik	ing Sections	3.0	Crass Charles	3.0		3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		ege synthesis and	1.0	THE SECOND STREET	1.0		1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		in and the	Lead		Lag	u alugani da	Lag
Lead-Lag Optimize?	0.0				2.0			- 0 0		2.0		2.0
Vehicle Extension (s)	3.0	3.0	3.0-	-3.0	3.0			3.0		3.0		3.0
Recall Mode	Max	Max	Max	Max	Max		(	C-Max		Max		Max
Walk Time (s)	7.0	7.0	7.0	7.0 14.0	7.0 14.0			7.0 14.0		7.0	Marsaema	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	14.0	14.0	seria interiora portuga		14.0		14.0 0		14.0
Pedestrian Calls (#/hr)	24.0	24.0		U.	SECTION OF THE PROPERTY OF STATE	EC O			Zamilian and	7 g. 200 f.	02.0	0
Act Effct Green (s)	34.0 0.23	34.0 0.23	34.0 0.23	DAN KANDAKAN	21.0 0.14	56.0 0.37		48.0 0.32		79.0 0.53	83.0 0.55	83.0 0.55
Actuated g/C Ratio v/c Ratio	0.23	0.23 0.83	0.23		0.14	1.30		0.74		0.62	0.70	0.58
The second secon	72.3	0.83 74.1	12.8	ache de la	74.5	184,0		49,8		30.5	27.1	25.8
Control Delay  Queue Delay	0.0	74.1 0.0	0.0	THE DAY OF THE SECOND	0.0	0.0		49.6 0.3	letterez <i>a</i>	ა∪.თ	0.0	25.8 0.0
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.5		0.0	U.U	0.0

		-	* *		~	,	ı	- 1	•	Ŧ	•
Lane Group	EBL	WEBTA	EBR WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	72.3	74.1	12.8	74.5	184.0	4 1981	50.1	nalah (ili	30.5	27.1	25.8
LOS	E	E	В	E	F		D		С	C	С
Approach Delay	and wheel	69.1	anostra <b>en</b>	157.8			50.1			27.3	and pro-
Approach LOS		Ε	SAN SECURITY OF ANY OF ANY SECTION TO SERVICE OF A THE PROPERTY OF THE PROPERT	F		***************************************	D			С	
Queue Length 50th (ft)	295	313	Oestalis	130	~1001	per entre	360		140	469	300
Queue Length 95th (ft)	343	#446	0	183	#825		440		241	447	281
Internal Link Dist (ft)		229		103		uren. Kanadarah	31	(INVESTMENT	erandko artik	188	
Turn Bay Length (ft)		hallo 11 o. 100 hallo 100 hallo 100	x								
Base Capacity (vph)	372	382	348	357	634	40470	1070	and the No	432	1768	759
Starvation Cap Reductn	0	0	0	0	0		39		0	0	0
Spillback Cap Reductn	0	. 0	0.0	0	and to 0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.81	0.83	0.13	0.73	1.30		0.77		0.62	0.70	0.58

Intersection Summary Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.30

Intersection Signal Delay: 69.1

Intersection Capacity Utilization 89.1%

Intersection LOS: E

ICU Level of Service E

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street

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<b>4</b> \$		<b>\$</b> ~2	<b>45</b>	a6
<b>T</b>		# DZ	₹ DO	T DO
KO COLORED DE	100		<ul><li>25 を は は は</li></ul>	B5 s

	7	T		*	*	*				
Lane Group	NBL	NBT	NBR	SBL	SBR	SBR2	FF FF MAIN	and more responsible	Mark to any	<b>Kan</b> agaga ang
Lane Configurations	<b>`</b>	Ĵ∌		74	75					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	galacatta Powano		affire a succession	To Burgo Mighter Com-
Lane Width (ft)	10	13	13	12	12	12				
Storage Length (ft)	<b>.0</b>	100000000000000000000000000000000000000	0	25	0		and the second		The state of the	
Storage Lanes	1	4.0	0	1	2	4.0		a julita kanaturun mereta kinun	rsi argudu pysoryedicokus u da	CONTRACTOR CONTRACTOR
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		<del>alla da da</del> Pan	be delice manifestation	CHARLES IN THE
Leading Detector (ft) Trailing Detector (ft)	50 0	50 0		50 0	50 0				n zako ingeli da 1	
Turning Speed (mph)	15	U.	9	15	9	9			e regular topologica en	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.88	1.00		ere - President (A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		garan katan
Ped Bike Factor	NAME OF STREET	0.98	en el	i tahibilah albahini	DAMITATA	Kalifornia (h. 1864). Kalifornia (h. 1864).				
Fit	Million 144	0.993	al There		0.850		his His Mile	Production	anesa di see	
Fit Protected	0.950			0.950						
Satd. Flow (prot)	1532	1772	0	Benerika Kaluaran Kabupatan K	2671	0	maria Pilagar	A STATE OF THE STA	TOWNSHIPS STATE OF	
Fit Permitted	0.950	4770		0.217	0074	0	163411-622513-07	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
Satd. Flow (perm) Right Turn on Red	1532	1772	0 Yes	412	2671	0 Yes		The Court of the C	THE PERSON NAMED OF THE PERSON NAMED IN	
Satd. Flow (RTOR)	441 - 1434	6	165		4	168				ni gaggaganga
Headway Factor	1.09	0.96	0.96	1.00	1.00	1.00				
Link Speed (mph)	ili Markanian	30		7.00	1.00					10 miles (191
Link Distance (ft)		347		of P.P. Par Starts Access		CONTRACTOR STREET,	Kalabatan Inda I Safaha	Carra as as an individual about a	KIRIGHTER KREETING EEN MER	20.000 E
Travel Time (s)		7.9	arrangpus			es established in the second of the second o		Security (6)		
Volume (vph)	286	766	32	52	1002	12		NEGR (TENNY) FOR FOR A CONTRACT	coordinate Communication and course course	an preservatere servera
Confl. Peds. (#/hr)	Alberta Cintral Contral		139	139	and distance	61		Triblecong		rijekar povišenom
Peak Hour Factor	0.85	0.91	0.80	0.88	0.91	0.58		And the second second second		
Heavy Vehicles (%) Adj. Flow (vph)	10% 336	8% 842	0% 40	0% 59	6% 1101	29% 21	MATERIA III	Hill Higheren	AMBOLO ISTORI	
Lane Group Flow (vph)		882	40	59	1122	0				Marin Cara
Turn Type	Prot	JUL		D.Pmc				to restallanda a		
Protected Phases	5	1		10 P. J.	1				ndifeli salah di	
Permitted Phases			700 PU 18 ( 5.3 3875)	1	ou company of the second	~	no a		eren and una ambana dalah Sul Sul	i panganan kanangan ng panganggan
Detector Phases	5'	1		1.	1	rining engeligt sydes engligting allegations engel	andronen i Marie de la companya de La companya de la co	11776 (1904) 1270 (1904) (1904)	himinanista (	
Minimum Initial (s)	8.0	8.0	nersije tek Medika 1994	8.0	8.0	27774 Tr				
Minimum Split (s)	26.0	22.0	0.0	22.0	22.0		en al sen en en en en	e de la companya de La companya de la co	ar de Solario da para	
Total Split (s) Total Split (%)	26.0 26.0% 7	74.0 4.0%	0.0 - 200 O	74.0 74.0%	74.0	0.0 0.0%	are conferrence		e elektronomiak	Programme and the second
Maximum Green (s)	21.0	69.0	. U.U /0	69.0	69.0	0.070	kirininkeliuta	AREAU (MARKELINI)		
Yellow Time (s)	3.0	3.0	El si	3.0	3.0	in the second second				tarang ana dis
All-Red Time (s)	2.0	2.0	V 1955070,25500 (5594)	2.0	2.0	Here and a control of the S	Esta vita establica	Manager dan 1995		
Lead/Lag					reguestal	HOLENHITTER	unania citalia	re here age	railiinikka.	1000
Lead-Lag Optimize?										
Vehicle Extension (s)	2.0	2.0	ekrijan geren	2.0	2.0		arentan (MCS)		uniperiori de la company	era por el Ambi Cejonio ven el Sasso
Recall Mode	None C		(	C-Max	ur warmen i wannan win i wasan wa	STORY WAS AND A				STATEMENT SANAGONIA
Walk Time (s)	7.0	7.0	Page 12.22.24	7.0	7.0	orași (IIII) (Care de Care de		Weight decrease	idzina (kiala izana)	add: Penince ii
Flash Dont Walk (s) Pedestrian Calls (#/hr)	9.0 0	8.0 0		8.0 0	8.0 0	ne arranderia alkarena erra	E-constant s			
Act Effet Croop (a)	22.0	700		70 O	70.0					

70.0

0.70

0.60

70.0

0.70

0.20

J

22.0

0.22

1.00

70.0

0.70

0.71

Act Effct Green (s)

v/c Ratio

Actuated g/C Ratio

•	<b>†</b>	1	1	لر	1
NBL	NBT	NBR	SBL	SBR	SBR2
		PROBLEM CONTRACTORS	2/05/91/2015/04/2015/66	1.00002002	10/10/10/10/10/10/10

Lane Group	NBL	NBT.	NBR SBL	SBR	SBR2	a <u>as</u> mark Kutholot		and the state of t	
Control Delay	77.4	15.6	7.3	9.4		ing Palake a title			TO A STATE OF THE PARTY.
Queue Delay	0.0	2.5	0.0	85.7					
Total Delay	77.4	18.1	7.3	95.1		ADEA COLO			realista in Vincenza. Antonio delle contra
LOS	Ε	В	Α	F					
Approach Delay	Harris III	34.5		201400	NOTE: TO SEE				
Approach LOS		С							
Queue Length 50th (ft)	224	276	\$50 garden (*114)	182					
Queue Length 95th (ft)	#360	355	28	242					
Internal Link Dist (ft)	Salaine (Art	267	entra de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición de la composición dela	and MARK			Arris (SA)		Margado <mark>Sa</mark> turbana
Turn Bay Length (ft)			25						
Base Capacity (vph)	337	1242	288	1871		gan balan.		allining pages in	
Starvation Cap Reductn	0	234	0	0					
Spillback Cap Reductn	0	15	0	923	una Palainike	unitarian	ir diskles iidd		nitali etempoleki oblika
Storage Cap Reductn	0	0	0	0					
Reduced v/c Ratio	1.00	0.88	0.20	1.18			nicale the supp	ag production of softs condition of the first	The Marie Hall Ma
				na marku Nesthari (1701)			AV00-1838-11113-1111-1111-1111-1111-1111-1		THE STATE OF THE S

Intersection LOS: E

ICU Level of Service B

## Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 85 (85%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 62.1

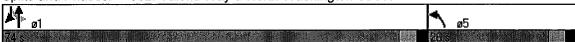
Intersection Capacity Utilization 58.0%

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 332: Valenti Way & North Washington Street



ሻ	<b>†</b>	ļ	J	•	7
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CHARLES AND		ı	T			T CHARLEST COLUMN TO THE COLUM				TOTAL TO	
Lane Group	NBL	NBT	SBT	SBR	SEL	SER	no se dinini				or Hai
Lane Configurations			ተተተ			א א א		Constitution - August State Control of the Control			Allowed to Olivina
Ideal Flow (vphpl)	1900	******************	1900	1900	1900	1900		indanini di			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0					sovocen uess
Leading Detector (ft)			50			50		Application of the	SHADA AFRICA		
Trailing Detector (ft)			0	chighty or bytherate, in a laster	utukuma asuumba	0		ra faran babasu bu a meu wusone ya	I U MAN U I PROMITA "BONUNI		LUJIII PASSINI
Turning Speed (mph)	15	Managan	eddiwell	9.	15	V200-100-000-000-000-000-000-000-000-000-		a demonstrative for	n security of Physical	Arduna murusar sasar	
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.76		• ***			ertyenene
Fri i Proposition of the Proposi			ta e e e e e e e e e e e e e e e e e e e			0.850		Albert de Arri			
Flt Protected				>8035V4440419 <u>12</u> 580			7-5-6-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-			CANADA CONTRACTOR OF THE STATE	000000000000000000000000000000000000000
Satd. Flow (prot)		0	4893	0	0	3409					elle i t
Flt Permitted	MINISTER OF		4000			0400	tions are	t in the same and			
Satd. Flow (perm)	0	0	4893	V	0		######################################				NO.
Right Turn on Red Satd: Flow (RTOR)				Yes		Yes 85			and the second state of the second		SHEER EVEN
	1.00	1.00	1.00	1.00	1.00	1.00	Charles and the state of the st	era esta era era era era era era era era era er		DE BEAR SEE STEEL BOOK DE	an salah
Headway Factor Link Speed (mph)	1.00	30	30	1.00	.30			- 12 (1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	aran ay Kurabaya	4-2004-121-131-131-1401-141	
Link Distance (ft)		397	273		177	hir ding					
Travel Time (s)		9.0	6.2		4.0	Maria Maria	COLLEGED PRODUCT	an in the second			
Volume (vph)	0		1002	0	o	288	AVZETOLEASSON STORESTONION				
Peak Hour Factor	0.92	0.92	0.91	0.92	0.92	0.91		2.11.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	STATE OF STANFOLD	rengia	THESE THE
Heavy Vehicles (%)	0%	0%	6%	0%	0%	8%		12 k	il Discussione subbaha	DER BURGER STANKE STANKE BERN	Number 1
Adj. Flow (vph)	0		1101	0	0	316			muda mulan	laidin egadalasta	
Lane Group Flow (vph)	0 0		1101	0	0	316				, skilo ingran Sengaha, skiloku n	MATERIA P
Turn Type		i in justiculium	ngantenania.	Norther William		custom	AT \$10.00 CO. O. O	ar research a 178	manakatur	i dan merena kana sa	
Protected Phases	KATHENINKETORES HAV		5	DEFECTALISM SECTION	THE SHAPE OF THE BEST OF	na particular de la compania del compania del compania de la compania del compania del compania de la compania de la compania del compania del compania del la compania del	DE TRIBUSERS EMERKE EKSES AVET	SERVICE SERVIC			50200000
Permitted Phases	a de la come de			eddisin) i	ajathii/biilij	greentriid			ran ay a sa s		
Detector Phases			5		***************************************	1	**************************************	100 Het 1920 de 24 Heter 2000 de 25 Heter		and a commence of the control of the	
Minimum Initial (s)	er obbleca	SUPPLY OF	8.0		e de la composición	8.0			g gyangal, Pennada Magyandi Kabupata	en teget i saksalah da Lamana an merebuah	
Minimum Split (s)			20.0			20.0					- Company
Total Split (s)	0.0	0.0	48.0	0.0	0.0	52.0			Partieri Francis Partieri I	ers de la company de la co La company de la company d	
Total Split (%)	0.0%	0.0% 4		0.0%	0.0%	52.0%		PARTON POR MANAGEMENT			e-14/5000000
Maximum Green (s)	and the state		44.0	and a Miller Co.	CMSA.	48.0					elel e l cui
Yellow Time (s)		9154 C QUI C 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.0	¥1124211120011111	BUTELANDHU (S. 17	3.0					artesacción de
All-Red Time (s)		entrasialis sign	1.0	sanakanak	nilot bir	1.0	A COMPANY				
Lead/Lag			for a second		eralinteen n	and a supplementation			A CONTRACTOR OF THE		
Lead-Lag Optimize?	adhir dhidasa		2.0	edMissenst	Marin (	2.0	all the second	1000			<b>.</b>
Vehicle Extension (s) Recall Mode			Ped			C-Max			restruction of	Section Address Notice	ř.
Walk Time (s)	erenando de la composição		7.0	10.012.500.0000.000	aa ahar dalah 1975	C-IVIAX					
Flash Dont Walk (s)	ang kilasiya (	12 (12 (12 (12 (12 (12 (12 (12 (12 (12 (	1.0	ang a thirties is		12121232749881	Market St.			A STATE OF THE STA	er Ser
Pedestrian Calls (#/hr)		S. Marie	0	hadi ta di Kalidi		iadita <b>ni</b> koj				di	
Act Effct Green (s)	and complete	mineral Park	27.0	and the state	oggae sulciti	65.0		DESPRES OF THE PROPERTY OF THE		and the second	institution in
Actuated g/C Ratio			0.27		Ardest et en insu	0.65		160 (144 E011)   THE	888-14F5, 7aF5(111)		
v/c Ratio	de la companya de la		0.83	aparting in S	la (Albanius)	0.14		416-981713-0-7-7	HE TO STATE OF		5.00
Control Delay	well Book Park		53.4		under da El STATE	13.0		organistica (nei Propositio (n. 1916). Propositio (n. 1916).	rand Parassidd (na Ceillean (na		ASSET X SERVER
Queue Delay		arian ingkana Ma	0.7	Million and th		0.0		quariinia			
Total Delay			54.1			13.0		MAN THE RESERVE OF THE RESERVE THE SELECTION OF THE SELEC	~ Ansonanopoetoki (führ ih 92 lijö)i	- vyy	
Los	tunggan di kacamatan Kalendar di Kabupatèn Salah		D.		in a serve or the serve	В	garan dibibilin	Ljepin di lilinde di			
Approach Delay			54.1						soon you have		
								<del></del>			



Lane Group	NBL NBT SBT SBR	SEL SER	
Approach LOS	$oldsymbol{D}$		
Queue Length 50th (ft)	279	82	
Queue Length 95th (ft)	326	m87	
Internal Link Dist (ft)	317 193	97	DO TO SERVICE CONTROL OF THE SERVICE STATE AS A PROSECULAR CONTROL OF THE SERVICE STATE OF TH
Turn Bay Length (ft)			
Base Capacity (vph)	2153	2247	
Starvation Cap Reductn	2007-2018-2018-2019-2019-2019-2019-2019-2019-2019-2019		
Spillback Cap Reductn	289	618	
Storage Cap Reductn		11 0 Marine	
Reduced v/c Ratio	0.73	0.19	
Intersection Summary			

1	n	te	rs	(P)	0)(	(O)	II.	SII	m	m	a	y

Area Type:

Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 4 (4%), Referenced to phase 1:SER, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 45.0

Intersection LOS: D
ICU Level of Service A

Intersection Capacity Utilization 32.7% Analysis Period (min) 15

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

Splits and Phases: 4120: North Washington Street & Beverly Street



	<b>F</b>	•	*	<b>†</b>	~	-	<b>↓</b>	لر	•	/	
Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER	
Lane Configurations	4 6 622 66	7	1100	ተተ	11011	ODL		0011	ሻሻ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	Proposition (Control
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12	Set a series a series in a series in the ser
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	+ 62.650/23/426 \$2.68 \$3.58	50		50		2000 de Santon de François de Santon			50	34. Sec. 100.000 - 41.24.75701	
Trailing Detector (ft)		0	Mattheway	0	apinattia (j. s			Tel State (15)	0		10 (10 (17 (17 (17 (17 (17 (17 (17 (17 (17 (17
Turning Speed (mph)	15	9	15	IN IN BOTHER AND THE BOOK OF THE STATE OF TH	9	15	200000000 <b>20000</b> 200 2 <b>2</b> 4 11 11 170 170	9	15	9	III II ballishde Rivat ha ballishde Rivata ka balasta sasa ar 18
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1:00	1.00	0.97	1.00	wite and the state of
Frt	***************************************	0.865		programme and the Section 1992 in Landson			0.0.00.00.00.00.00.00.00.00.00.00	. 4 . 45. 6 . 4 . 4 . 5 . 5 . 5 . 5		• 10 - 12 - 120 - 1	
Fit Protected		terketim	errori <del>ja</del> s	Messhar	gerial trus	iylailii eli			0.950	idhid Magairini	Continuent constant
Satd. Flow (prot)	0	1753	O	3574	0	0	0	O	3400	0	NAMES AND A STRUCTURE OF A STRUCTURE
Flt Permitted	_		COLOR NO. 18 CONTRACTOR					nt i nesa m <sub>a</sub> ner	0.950	Markot proces	Maria de Carlos
Satd. Flow (perm)	0	1753	0	3574	0	0	0	0	3400	0	5524
Right Turn on Red	etorostrari	Yes	i de Broken.		No		and all charts	No	No		
Satd. Flow (RTOR) Headway Factor	1.00	202 0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30	0.52	1.00	30	1.00	1.00	30	1.00	30	i.uv	Barriera, problema
Link Distance (ft)	264		LA CONTRACT	579	iji Karani in in	o on all	347	gaden de	320	Arrian A. 74 E.	
Travel Time (s)	6.0			13.2			7.9		7.3		
Volume (vph)	0	55	0	883	0	0	0	0	146	0	
Peak Hour Factor	0.92	0.67	0.92	0.88	0.92	0.92	0.92	0.92	0.69	0.92	9 to 1,9238 th 2238 1338 1358 1358 1358 1358 1358 1358 13
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	0%	3%	0%	Herrio de se rocetto de la
Adj. Flow (vph)	0	82	0	1003	0	0	0	0	212	0	100 00000000000000000000000000000000000
Lane Group Flow (vph)	0,	82	0	1003	0	0		0	212	1944 <b>0</b>	on the property of
Turn Type	CI	ustom		Navion, des rockesses	Aconologius de Parteur	21 <b>4.</b> Was believed 1000 and	Transa Colonologia (m. 18. 1	THE SEATE OF PERMANENTS CORTAINS	Prot	nary-containmentaire room was	p p.p.a. \$10.00.011001.01112.4101.4513.1110.110.
Protected Phases	er og fill armen	5		1			a Pragama (1970)		6	Mile versieringsber	
Permitted Phases		_		2			K.K. K.				
Detector Phases	n ing palabakan	5	on Marie Control	1	10.40.894112.413.22	URLEU PROLIFE DA	TRICL STATES THE		6		
Minimum Initial (s)	NAMES OF THE OWNERS OF THE OWNER,	8.0 13.0		8.0 13.0					8.0 13.0		
Minimum Split (s) Total Split (s)	0.0	14.0	0.0	53.0	0.0	0.0	0.0	0.0	33.0	0.0	Assertation (1997)
Total Split (%)	0.0%		0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	
Maximum Green (s)	9.97	9.0	0.070	48.0	0.070	0.070	0.070	0.070	28.0	0.070	
Yellow Time (s)	BERNEOUS	3.0	erangan pagar	3.0	Property and a plant	SURE PROPERTY.		ranger en	3.0		TO COMPAGNICAL AVAILABLE
All-Red Time (s)	17% (w. Capulto-golden eeus, lie usel	2.0	(KAL SARA SARA SARA SARA SARA	2.0					2.0		
Lead/Lag	as rande da	Lead	decome con	0.0 (0.0)	er (ere erek				Lag		
Lead-Lag Optimize?		Yes	tabas i consulero serra Por I		330111	W42		- HATTELL SCHOL NELD TIL DAYS	Yes	elater i mancorro o con democracos de d	ADDRESS: SERVICES OF DEPENDANCE AND ALLOYS HER ARCHITECT
Vehicle Extension (s)	ninganingap	2.0	samulaing p	2.0	on to divensity	n jagtinis	(Nadal)		2.0		
Recall Mode	akantan mesahi anmeterbu 2004	None		C-Max	SECONO CONTRACTO AND	COLOR - COLOR		*****************	None	40.41.5	
Act Effct Green (s)		9.0		70.4		at i sull'is		K. De Jijing	11.2	Same agrical	enggi de depart.
Actuated g/C Ratio		0.09		0.70	e e e e e e e e e e e e e e e e e e e	MENTAL SERVICE STREET	udrahan dan dan kecal	a programme de la composição de la compo	0.11		
v/c Ratio	anela esta	0.24	di wasii Nina	0.40	di Spere (co.e.)	ur amalayanin	period a collect	Indiana y	0.55		
Control Delay	A HARRIST CO	1.7	and the second	4.9					47.5		
Queue Delay Total Delay		0.1 1.7		0.0 4.9				andram e and	0.0 47.5	to and a historia	
LOS		1.7 A	Žiais umini	4.9 A			an markana		47.3 D	calla a marin	
Approach Delay		n in the		4.9	Part of W	a espandi			47.5		
Approach LOS	Pariferental de Brita, este			4.5 A	er of the second	on charter the color	anaren artea eta Lango de propinsione		-77.0 D	Security of the second	
Queue Length 50th (ft)	naling Your live . If	0		78		operation (S	manua atenzak		67	3(4) (1) (1)	



Lane Group	WBL. WBR	NBLA NBT NE	BR SBLASBT	SBR NEL	NER MARKET THE
Queue Length 95th (ft)	0	m99	armerican Section of Advanced St	75	
Internal Link Dist (ft)	184	499	267	240	
Turn Bay Length (ft)					
Base Capacity (vph)	357	2515		986	PRINCIPLE THE STREET REPORTED TO SERVICE THE STREET STREET, TO SERVICE THE SERVICE STREET, AND SERVICE STREET,
Starvation Cap Reductn	0		Carriero	0	
Spillback Cap Reductn	29	230		0	
Storage Cap Reductn	0	0.00		A STATE OF THE STA	
Reduced v/c Ratio	0.25	0.44		0.22	

Intersection Summary

Area Type:

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 43 (43%), Referenced to phase 1:NBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 11.7
Intersection Capacity Utilization 37.7%

Intersection LOS: B
ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 34: Cooper Street & Sumner Tunnel Off-Ramp

<b>†</b>	<b>4</b>	<b>1</b> -c
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FOR THE PROPERTY OF THE PROPER	14.5	33 .

Existing Conditions (2008)
1862: New Chardon Street & North Washington Street

	74	*	4	€	-	Ļ	ļ	4	
Lane Group	EBR	EBR2	WBL2	WBL	WBT	SBL	SBT	SBR	ø2 -   ø5 =   ø6   1   3
Lane Configurations	7 7	7		Ā	<b>个</b> 个	ሻሻ	1>	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	16	12	16	12	16	
Storage Length (ft)	0.0			25	100000000000000000000000000000000000000	0	encintant de la	lesson On	
Storage Lanes	3	4.0	4.0	1 4.0	4.0	2 4.0	4.0	1 4.0	
Total Lost Time (s) Leading Detector (ft)	4.0 50	4.0 50	4.0 50	4.0 50	4.⊍ 50	4.0 50	4.0 50	4.0 50	
Trailing Detector (ft)	- 0	0	- 0	0	0	0	0	0	The state of the s
Turning Speed (mph)	9	9	15	15		15		9	
Lane Util. Factor	0.88	1.00	0.95	1.00	0.95	0.97	0.95	0.95	
Frt	0.850	0.850				enia operatione	0.941	0.850	
Flt Protected	arena en el			0.950		0.950			
Satd. Flow (prot)	1963	1546	0	2046	3610	3929	1405	1581	
Flt Permitted			anner (u <del>tt</del>	0.950		0.950	PHAMIL		
Satd. Flow (perm)	1963	1546	0	2046	3610	3929	1405	1581	
Right Turn on Red	enelysek kalif	Yes	No	HATE BALLS FOR			aucuni un	No	
Satd. Flow (RTOR)	4 04	39	4.00	0.05	1.00	0.85	4.00	0.85	
Headway Factor	1,04	1.04	1.00	0.85	1.00 30	- U.OD	1.00 30	. U.OO	
Link Speed (mph) Link Distance (ft)		u propins	Tree (		125	ni w	397	garing to the	
Travel Time (s)			HANDER PLANT		2.8		9.0		
Volume (vph)	1023	42	23	35	279	852	129	309	
Peak Hour Factor	0.75	0.95	0.68	0.34	0.83	0.88	0.92	0.88	不管工作的。1709年1700年1700年1月1日 1909年1月1日 1909年17日 1909年17日 1909年17日 1909年17日 1909年17日 1909年17日 1909年17日 1909年17日 1 1909年17日 17日 17日 17日 17日 17日 17日 17日 17日 17日
Heavy Vehicles (%)	40%	1%	0%	0%	0%	1%	28%	10%	
Adj. Flow (vph)	1364	44	34	103	336	968	140	351	,
Lane Group Flow (vph)	00000431 <b>4.200H.96</b> LHPHH1EHH1	44	0	137	336	968	232	259	
<b>J</b>	custom c	ustom	Perm	Perm	A SAN TRANSPORT	Split		Prot	
Protected Phases	1	aranina ra		45,1004,200	1	56	5 6	5 6	2 5 6
Permitted Phases	4		1	1 	44 Million	5 6	56	56	
Detector Phases Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	U U		J.0	8.0 8.0 4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	100 100 157 16		i Mari	20.0 24.0 8.0
Total Split (s)	46.0	46.0	46.0	46.0	46.0	34.0	34.0	34.0	20.0 26.0 8.0
Total Split (%)						34.0%			20% 26% 8%
Maximum Green (s)	40.0	40.0	40.0	40.0	40.0	\$71 <b>\$</b> 770		***************************************	16.0 19.0 4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	aggarija Gelek - mastiri	n The William		3.0 3.0 3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0			emusical Control Nation	1.0 4.0 1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Harin Balla		elair <del>180</del> 7	Lag Lead Lag
Lead-Lag Optimize?			6.6			2015 BB 748 BU SA S			Yes
Vehicle Extension (s)	2.0	2.0	2.0	profession and with the	2.0		e anii de anii	11.521 10.744	2.0 2.0 3.0
Recall Mode	C-Max	C-IVIAX (		C-IVIAX	C-IVIAX		g e de la composición	SALET THE	None Max Max 7.0
Walk Time (s) Flash Dont Walk (s)		Mary Mary		in and	Marcing 12		uvereare are to	, periodial III	9.0
Pedestrian Calls (#/hr)	18 m 1974		Sales		anietyju te		THE S		50
Act Effct Green (s)	46.0	46.0		46.0	46.0	30.0	30.0	30.0	
Actuated g/C Ratio	0.46	0.46	. 13, 2444	0.46	0.46	0.30	0.30	0.30	
v/c Ratio	1.51	0.06	seconomico del Co	0.15	0.20	0.82	0.55	0.55	ndere en
Control Delay	248.7	0.5		17.9	17.8	50.4	45.4	44.9	
Queue Delay	0.0	0.6		0.0	0.0	30.9	0.0	0.0	

-34	<b>\</b>	~	•	♣—	Į,	<b>↓</b>	1
		-			-	•	

Lane Group	EBR	EBR2 WB	L2 WBL	WBT	SBL	SBT	-SBR	ø2	ø5	=1 Ø6
Total Delay	248.7	1.2	17.9	17.8	81,3	45.4	44.9		tanik <sup>14</sup>	
LOS	F	Α	В	В	F	D	D			
Approach Delay	ANA STORY			17.8		69.1	rapatens (1)			
Approach LOS		and the second distriction of the second dis		В		Е				
Queue Length 50th (ft)	~708		53	70	344	168	187	144		
Queue Length 95th (ft)	#657	m0	32	92	400	m213	m235			
Internal Link Dist (ft)	ger et de		negrifikalish (2007)	45		317			AMERICA Marie	
Turn Bay Length (ft)			25							an company was a sure of the sure of the Section Address of the sure of the su
Base Capacity (vph)	903	732	941	1660	1179	422	474			
Starvation Cap Reductn	0	524	0	0	261	0	0			
Spillback Cap Reductn		0	_ 0	0	- 0	0	0	1940157		National Part of the Control
Storage Cap Reductn	0	0	0	0	0	0	0			
Reduced v/c Ratio	1.51	0.21	0.15	0.20	1.05	0.55	0.55	er sommere		

Intersection Summary Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 49 (49%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.51

Intersection Signal Delay: 134.3

Intersection LOS: F

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 1862: New Chardon Street & North Washington Street

#286 <b>#</b> 1862	<b>Å</b> k ø2	#21 #1862 <b>4</b> ø5	#21
458 25 25 27 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	208	2684	98

	٠		4-	1	-	✓	
Lane Group	EBĻ	EBT	WBT	WBR	SBL	SBR	1000
Lane Configurations	in and the second	ተተተ	44		<b>N</b>		SSECTION OF THE
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost Time (s) Leading Detector (ft)	4.0 50	4.0 50	4.0 50	4.0	4.0 50	4.0	les in the contract of
Trailing Detector (ft)	0	0	0	Milana Jasan	0		introderno.
Turning Speed (mph)	15	ari bazala a	e U secretari	9	15	9	12.00
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00	
Frt			i inkanggar		0.932		
Flt Protected	0.950	NOTIFICIAL DEPOSABLE OF RELEASE	TOTAL KIRLEN BARRILLAN - ATTAL	errindra errinda ett i 81 söberen	0.976	and before the Annual Professional Section (1995) and the Annual S	HOLOGO HER PRITOR
Satd. Flow (prot)	1787	5136	3574	0	1711		est of all
Flt Permitted	0.361		40 <b>12</b> 0 140 140 150 150 150 150 150 150 150 150 150 15	PERSONAL PROCESSION AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PER	0.976		SHOREN AT BALL
Satd. Flow (perm)	679	5136	3574	0	1711	0	
Right Turn on Red				Yes		Yes	Market
Satd, Flow (RTOR) Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	T.OO	30	30	1.00	30		ATTENDED TO
Link Distance (ft)		204	244	REPORT LEGISTRES STEETS	148		
Travel Time (s)		4.6	5.5	n jadi kulyat	3.4		
Volume (vph)	1	471	542	1	1	1	societ kritisia ar
Peak Hour Factor	0.92	0.78	0.76	0.92	0.92	0.92	deller
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	ELECTROSIS CAX
Adj. Flow (vph)	<u>1</u> .	604	713	1	1		
Lane Group Flow (vph)	1 - D	604	714	0	2	0	
Turn Type Protected Phases	Perm	1	1		5		
Permitted Phases		. Constitution	l Salahan salah	1.0151 20 1621	ranga da 180		
Detector Phases	1	1	1		5		
Minimum Initial (s)	8.0	8.0	8.0	Ale Carin	8.0		(11.9 <b>3.</b> ) i
Minimum Split (s)	23.0	23.0	23.0		19.0		20062202003
Total Split (s)	75.0	75.0	75.0	0.0	25.0		1111 AND 14
Total Split (%)	75.0%		75.0%	0.0%		0.0%	account a days and
Maximum Green (s)	70.0		70.0		19.0		en de la company
Yellow Time (s) All-Red Time (s)	3.0	3.0 2.0	3.0		3.0 3.0		ana at a sa
Lead/Lag	2.0	2.0	2,0		3.0		
Lead-Lag Optimize?			THE THE STATE OF				
Vehicle Extension (s)	2.0	2.0	2.0	li i komunika in in in	2.0		Canal Strain
Recall Mode	C-Max	C-Max (	C-Max		None		
Walk Time (s)	10.0	10.0	10.0	**********	12.0		W-98800000000000000000000000000000000000
Flash Dont Walk (s)	8.0	8.0	8.0	ari (1910) ka sa sa Kanada (1920)	1.0		
Pedestrian Calls (#/hr)	0	0	0	enin e kanana	0		
Act Effct Green (s) Actuated g/C Ratio	96.4 0.96	96.4 0.96	96.4 0.96		10.0 0.10		
v/c Ratio	0.00	0.96	0.90	idi, jeriyal	0.10		iak ojiosai
Control Delay	1.0	0.12	0.21		35.0		a social
Queue Delay	0.0	0.0	0.0	dag mora	0.0		111. SV 14
Total Delay	1.0	0.3	0.7		35.0	的一个人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一	ondomici (1978)
LOS	A.	Α	ı, ıA		С		moroni Malani
Approach Delay		0.3	0.7		35.0		

The Merano

506: Causeway Street & Legends Way



Lane Group	EBL	-EBT	WBT 1	WBR SBLUSBRALL WE WERE SELVER SBLUSBRALL SELVER
Approach LOS	m in de	Α	A	
Queue Length 50th (ft)	0	0	0	1
Queue Length 95th (ft)	m0	9	41	8
Internal Link Dist (ft)		124	164	68
Turn Bay Length (ft)			en et en	
Base Capacity (vph)	655	4951	3445	360
Starvation Cap Reductn	. 0	0	0.0	0
Spillback Cap Reductn	0	0	0	
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.21	0.01

## Intersection Summary

Area Type:

Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.21

Intersection Signal Delay: 0.5

Intersection LOS: A

Intersection Capacity Utilization 28.3%

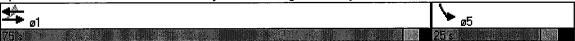
ICU Level of Service A

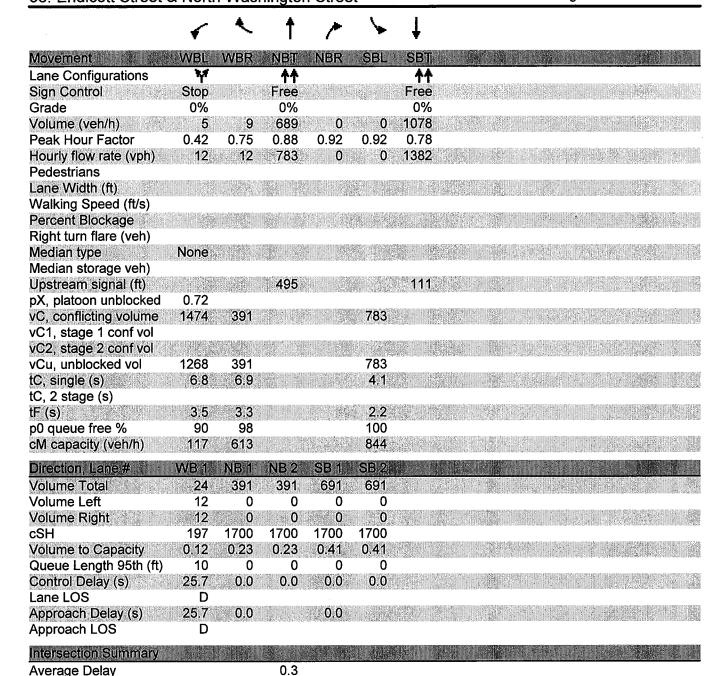
Analysis Period (min) 15

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

Splits and Phases:

506: Causeway Street & Legends Way





ICU Level of Service

39.8%

15

Intersection Capacity Utilization

Analysis Period (min)

	ሻ	<b>†</b>	<b>↓</b>	w	•	7
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Movement	-NBL NBT	SBT SBR	Na SELA	SER	vallet open	on and an early and a second	
Lane Configurations	ተኑ	<b>↑</b> ↑>					
Sign Control	Free	Free	Stop				
Grade	0%	0%	0%			energiesen er en Kriteres Anko	
Volume (veh/h) Peak Hour Factor	77 689 0.80 0.91	1066 17 0.94 0.53		0.92	entedal atental		a dinamina kananga
Hourly flow rate (vph)	96 757	1134 32		0.92		erieninisene et alla	
Pedestrians		1104 02	iki dapeta Sabad	Sellent Senson in 18		en openski kolika (oz. 1831).	
Lane Width (ft)	in a parieti besage	omainteentarill	ann an tail 1804				descreamble and a second second
Walking Speed (ft/s)		***************************************				N. S. & C. (19 A. (	The second secon
Percent Blockage		META SATELIANIA PROGRA				The Designation	
Right turn flare (veh)		ner retainmentre goganise (see	NI			eresona del camporatoria a subse	
Median type Median storage veh)	PENTAL MARIE CONTRACTOR AND	indikesindebilik	None		ka kamat Mayanin	http://www.ship	nidates Alexandria
Upstream signal (ft)	109	497		ille Mercinian			ar Arthrogan such an un 195
pX, platoon unblocked	0.74		0.74	0.74			
vC, conflicting volume	1166	o de appointe a de abrollo	1721	583	iniggida <b>n</b>	eren aleganistas	red a collingually
vC1, stage 1 conf vol	*Salarania da salarania da salar		LC9F02 (11900)	wacomone sunungan alau an	e iona (AGONESAS - E SURVEINA INCIDENTINA ABADA	erenni seli mirato l'herion sabra	ade Anni hete i d'ocident conquertrus care
vC2, stage 2 conf vol	876	Charles de Hasilea	1624	90		de la primita par de la composición de	fisial reggi er i sa tribile (a. 14 Apo regetamos sa transpose)
vCu, unblocked vol tC, single (s)	4.2		6.8	90 6.9			i daya
tC, 2 stage (s)	iii dana Ti <del>G</del> ares il maseria	elandini (Makanali mali dan	0.0		Verit erhous a sakkurakteris	irlis (Resa)	
tF (s)	2.2		3.5	3,3	endere en		en kressenson
p0 queue free %	83		100	100			
cM capacity (veh/h)	559	on two of Company All Principles	58	709	rangu ng <b>amin</b> g sa	tabeledahir kampaken.	
Direction, Lane #	NB1 NB2	SB 1   SB 2				erengen og propositioner	illa il <b>um</b> e e
Volume Total	349 505	756 410			militer i series estado. Carta de Artista		
Volume Left	96 0	0 0					SOM SERERES TO ESCAPE TO SOURCE
Volume Right cSH	0 0 559 1700	0 32 1700 1700		And district			SMITHER STORY
Volume to Capacity	0.17 0.30	0.44 0.24		Lieterope, weeks and a	overelle need to compress the latest		75 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1
Queue Length 95th (ft)	15 0	0 0					
Control Delay (s)	5.4 0.0	0.0		antora necessor.	izmetku enjarom	<b>198</b> malaysida	r <sup>ga</sup> hine (yahita <sub>dayan 1</sub> 15a
Lane LOS	_ A						(0.0. The court #4000000000000000000000000000000000000
Approach Delay (s)	2.2	0.0			Authorization and the pro-	richen annagh	like a strange
Approach LOS							
Intersection Summary						Carl Arthur Harris III in 1900	Building the second
Average Delay Intersection Capacity Ut	ilizotion	0.9 58.0%		of Service		D THE RESERVE	
Analysis Period (min)	.iiizatiOH	15	ICU Level	of Service		В	Tech / Angles Heart Cap (ex-
	Maria de Arras de Ar La companya de Arras		PROPERTY OF THE STATE OF THE ST				
		purps of the production and the state of the	negavije of skuli krajika od tak	i enterio della di Salatti e Salatti di Co	ninteraturi (ilinin ili 1986)		

	•		7	✓	4	•	1	<b>†</b>	1	-	<b>↓</b>	4
Movement &	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	er progresser op de 2 de 2 de 52 de	4 <b>î</b>	SUPERINTE AND	Barressa e such eine such eine Alte	414			_ ↔		02.1386#100010N0FF5QU	4	83588 <b>%</b> 538155475
Sign Control		Free			Free	ang kan MRTH		Stop	uneana)		Stop	
Grade		0%		00	0%		40	0%		3.	0% 0	40
Volume (veh/h)	17 0.75	403 0.96	42 0.86	29 0.73	512 0.95	0.50	49 0.56	0 0.92	66 0.66	0.38	0.92	10 0.58
Peak Hour Factor Hourly flow rate (vph)	23	420	49	40	539	4	88	0.92	100	0.30	0.92	17
Pedestrians	<b>49</b> 14	749	<b></b>	70				is a Mari			Υ.,	
Lane Width (ft)	. Jenys V	p Vilatin		20.17674	ggggdd 1975	pen en m		garan da	and people			
Walking Speed (ft/s)		- Section of the Property	HECCHIA TANIFICATION	activistics for each of a King		12,40003,894-0-040,0 = 244	describer 1000 1000 1000 1000 1000 1000 1000 10		er.nereerex.r.racooo.er	THE CONTRACT OF THE PARTY OF TH		ACCUSATION OF THE PROPERTY OF
Percent Blockage	Epuber recent i		dinaga ing			likus III i			e de la cel	and design		
Right turn flare (veh)		100 m		SWEETER STREET STREET	Cror Sun 649 SACRORS	SSSC NOSSSANATAS	erotkin setologic			// SAN TO SA	11 <b>2002-14-62</b>	eservialny erope
Median type					TO THE		AND STATES	None			None	tostal Tijd
Median storage veh) Upstream signal (ft)		443			204	3100						and the state of the
pX, platoon unblocked	0.99	440		0.98	2.04		0.98	0.98	0.98	0.98	0.98	0.99
vC, conflicting volume	543	guar com		469	erfaller ich		856	1112	234	976	1134	271
vC1, stage 1 conf vol			in in the second	erae a lafinito de	2 (14 f e c	######################################	E9360000 (1007)(86)	10000	5,000,000	DESERBERALISMES DE SAND	Maria el al el arabe	HISBRICK 88672013
vC2, stage 2 conf vol		PHARMS IN							sidikiriliri	ente softes		
vCu, unblocked vol	530	ZHILL DIEGON POOLOGO		430			805	1066	189	927	1089	256
tC, single (s)	5.1		istori Constitution	4.1		a company	7.7	6.5	6.9	7.5	6.5	8.0
	CONTACTOR N	charen il		Talan Ole Nation	AT THE SAME OF THE PERSON	printers in			N. 1. 15.C. T. 1. 17.32	distance in Table	-1-	en samulata
tC, 2 stage (s)	III, MARKALII URIII MIR				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			EDILICOTALISTICATION PARTE				GOSSICAPASISONA
tC, 2 stage (s) tF (s).	2.7			2.2	personal design		3.6	4.0	3.3	3.5	4.0	3.9
tC, 2 stage (s) tF (s) p0 queue free %	2.7 97			2.2 96			3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)	2.7 97 756		WW/s	2.2 96 1112	Ne za	NOW:	3.6	4.0	3.3	3.5	4.0	3.9
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h) Direction, Lane#	2.7 97 756 EB 1	EB 2	WB 1	2.2 96 1112 WB 2	NB 1.	SE 1)	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total	2.7 97 756 EB 1 233	259	309	2.2 96 1112 WB 2 273	188	25	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left	2.7 97 756 EB 1 233 23	259 0	309 40	2.2 96 1112 WB 2 273 0	188 88	25 8	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total	2.7 97 756 EB 1 233	259	309	2.2 96 1112 WB 2 273	188	25	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction: Lane #  Volume Total  Volume Left  Volume Right cSH  Volume to Capacity	2.7 97 756 EB 1 233 23 0 756 0.03	259 0 49	309 40 0	2.2 96 1112 WB 2 273 0 4	188 88 100 381 0.49	25 8 17	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction: Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft)	2.7 97 756 EB4 233 23 0 756 0.03 2	259 0 49 1700 0.15	309 40 0 1112 0.04 3	2.2 96 1112 WB 2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66	25 8 17 350 0.07 6	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s)	2.7 97 756 EB:1 233 23 0 756 0.03 2	259 0 49 1700 0.15	309 40 0 1112 0.04 3 1.4	2.2 96 1112 WB 2 273 0 4 1700 0.16	188 88 100 381 0.49 66 23.3	25 8 17 350 0.07 6 16.1	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS	2.7 97 756 EB:1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15	309 40 0 1112 0.04 3	2.2 96 1112 WB 2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s)	2.7 97 756 EB:1 233 23 0 756 0.03 2	259 0 49 1700 0.15	309 40 0 1112 0.04 3 1.4	2.2 96 1112 WB 2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s) Approach LOS	2.7 97 756 EB:1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15	309 40 0 1112 0.04 3 1.4	2.2 96 1112 WB 2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s) Approach LOS	2.7 97 756 EB:1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15	309 40 0 1112 0.04 3 1.4 A 0.7	2.2 96 1112 WB 2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C	3.6÷ 63	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s) Approach LOS Intersection Summany Average Delay	2.7 97 756 EB 1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15 0 0.0	309 40 0 1112 0.04 3 1.4 A 0.7	2.2 96 1112 WBI2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C 16.1	3.6 63 238	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lanel# Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s) Approach LOS Intersection Summary Average Delay Intersection Capacity Uti	2.7 97 756 EB 1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15 0 0.0	309 40 0 1112 0.04 3 1.4 A 0.7	2.2 96 1112 WBI2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C	3.6 63 238	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97
tC, 2 stage (s) tF (s) p0 queue free % cM capacity (veh/h)  Direction, Lane # Volume Total Volume Left Volume Right cSH Volume to Capacity Queue Length 95th (ft) Control Delay (s) Lane LOS Approach Delay (s) Approach LOS Intersection Summany Average Delay	2.7 97 756 EB 1 233 23 0 756 0.03 2 1.3 A	259 0 49 1700 0.15 0 0.0	309 40 0 1112 0.04 3 1.4 A 0.7	2.2 96 1112 WBI2 273 0 4 1700 0.16 0	188 88 100 381 0.49 66 23.3 C	25 8 17 350 0.07 6 16.1 C 16.1	3.6 63 238	4.0 100	3.3 88	3.5 96	4.0 100	3.9 97

	-	*	₹		7	7					
Movement  Lane Configurations  Sign Control	EBT ↑↑↑ Free	EBR	-WBL	WBTIII †† Free	NBL W Stop	ENBR J					
Grade	0%			0%	0% 79	19	ra sarrasta selesta sarat				
Volume (veh/h) Peak Hour Factor	489 0.78	0.92	0.92	451 0.76	0.77	0.52		THE SHOP STATE STA	A CONTRACTOR OF A CA	DINANG PENDENGEN DINGA	
Hourly flow rate (vph) Pedestrians	627	0	0	593	103	are 37 (em)		ornalia Maria			
Lane Width (ft)	i a and		nisas ir in	enin north							ALL PARTY OF THE P
Walking Speed (ft/s) Percent Blockage	iga basingi	1319 of 1711				an paratian				r degelegel George Standard (Februar)	
Right turn flare (veh) Median type		Landa et a	27.	an that sele	None					-renganda Militarab	
Median storage veh)	387			309			en karten batar er				33
Upstream signal (ft) pX, platoon unblocked	301		Kilickii (1865). II		0.98				Astember 194		
vC, conflicting volume vC1, stage 1 conf vol	ny en fend	Harata Par	627		924	209.	riderriinike				
vC2, stage 2 conf vol vCu, unblocked vol		ersterville	627	all <b>Eng</b> hil	900	209		enigration is		omana (na marija)	
tC, single (s)		THE STATE	4.1		6.8	7.0	alik inperiodi			anning garage Santing gysperie	
tC, 2 stage (s) tF (s)		namilalist	2.2	ardes la	3.5	3.4	1011 27 30	letiv kë birite k		nceur er europa er ba	
p0 queue free % cM capacity (veh/h)	56 (1875 \$ 16 <b>18</b> 18 18 18 18 18 18 18 18 18 18 18 18 18		100 965		62 272	95 788	MARCON STEELS	eran ekan ola 11. Kancasa kan 11.			
Direction, Lane #	KEB4	EB 2		WB 1	T/T WB 2	NB1			n sersepten kendidi.		
Volume Total	209	209	209	297	297	139				andra di degrado Destro de la composição	
Volume Left Volume Right	0 10	0 444 + 0	0	0	0	103 37		aga a Maraul	ng tipakan 1955. Santinggan na		
cSH Volume to Capacity	1700 0.12	1700 0.12	1700 0.12	1700 0.17	1700 0.17	329 0.42		a granden er	an a	on the second of the second	225
Queue Length 95th (ft)	0.0	0.0	0.0	0.0	0.0	51 23.8		en de la companya			208 304
Control Delay (s) Lane LOS		U.U	0,0	TO A TABLE STATE STATE SECTION	0.0	С		1,127.104.5			HUH
Approach Delay (s) Approach LOS	0.0			0.0		23.8 C		TOTAL SET SET			
Intersection Summary Average Delay	245 m : 150	probably on the	2.4		Marin se 基系		анда <u>2. го 1-</u> динеский минист	endikka dili	<del>美</del> 国的特殊	anartai Leel	
Intersection Capacity Ut	ilization	ingani.	24.7%		EU Leve	l of Servic	e	, had the A	g alle süble	The Market P	
Analysis Period (min)	gagerra view.		15	n reinnen	eufagysta a million	ara Milat	Kale Desti Verili Kalendara Chiesto		ingenerie en Section La reconstruction		

	<b>≯</b>	<b>\</b>	4	<b>†</b>	ţ	4					
Movement	AEBL =	EBR	NBL	NBT	SBT	SBR		e e e Ranku	ninkanakana		
Lane Configurations	7	7		<b>^</b>	<b>^</b>						
Sign Control Grade	Stop 0%	Penul Pener		Free 0%	Free 0%				eranaken (1845) ilikasi.	anga Pintantan Sa	
Volume (veh/h)	93	43	0	22	71	0	or allered	Autobyje stoj	$\operatorname{rec}(H/\delta^2)_{W_{n+1}}$	dir bulling	
Peak Hour Factor Hourly flow rate (vph)	0.79 118	0.72 60	0.92	0.69 32	0.81 88	0.92	1716-101-158			en arkanana as	
Pedestrians		ensy y nadi	· ·	. UL				i i i i i i i i i i i i i i i i i i i	ahantak <b>K</b> alènda		
Lane Width (ft)	salla di Ter		anau <del>n</del> i	kuwaniki	11.77 <b>10</b> 11.79		eg transport for end Laire et 2000 es 500 for	anna a artean	likalia rabaherak	Valent Mercer and	
Walking Speed (ft/s) Percent Blockage	nggi sanggan			NT CONTRACTOR		a prominent or divisit		nerol anderske		mo evalue e e e	
Right turn flare (veh)	2.62.534.935500000000000000000000000000000000000			gid og en de Di	kanan mar						
Median type	None	integrations	usio ances						territak katen		
Median storage veh) Upstream signal (ft)	germanica.			465		ne sisangga		ang su <b>ket</b> i	ura Permija sa		
pX, platoon unblocked											
vC, conflicting volume vC1, stage 1 conf vol	120	88	88				cinin <b>aet</b> sina	adiadable04			
vC2, stage 2 conf vol		i aliman				ar najera	CONTRACTOR OF				
vCu, unblocked vol	120	88	88								
tC, single (s) tC, 2 stage (s)	6.4	6.2	4.1	iifΣelmille#		Markan Markan					
tF (s)	3.5	3.3	2.2			erikaki dilili di kal Libata kalenda yaki	ang paliting dest			ideraka dibera	
p0 queue free % cM capacity (veh/h)	86 869	94 - 962	100 1521			i den interes	an Chapter Description			ivagrapa i firefataj	
Direction Lane #				3B 1	40000	MANAGERA PROPERTY SERVER					
Volume Total	EB 1 118	60	NB 1 32	88			e e e e suidistant de la company de la c La company de la company d		<mark>eningtenilenderenik</mark> 1955 blocksteine	andon <mark>e s</mark> ambasan Gerafaha kapata	
Volume Left	118	0	0	0							
Volume Right	869	60 962	0 1700 1	0 1700	. (1.1) (1.1 <b>4</b>	ungu palu P	pusta <mark>dia p</mark> arampia				
Volume to Capacity	0.14			0.05							
Queue Length 95th (ft)	12	5	0.0	0	and second with		and the second				
Control Delay (s) Lane LOS	9.8 A	9.0 A	0.0	0.0	na sun pain fer an	Historia (1909)	grand <b>V</b> School	phonocoura (#1	SMS marining		
Approach Delay (s)	9.5	inggin (film)	0.0	0.0		in i proprieta de la composición de la La composición de la	e said Desta				
Approach LOS	Α										
Intersection Summary	unigni erro err		作画の例(4) 5 フ	proston access		eresementi il		1-1-1-1-10			
Average Delay Intersection Capacity Uti	lization	18	5.7 5.6%	ICI	J Level	of Service	e	A			
Analysis Period (min)			15	T. 7.		and a Tolke Links		u mercis con som entre til til fille	errem Garras Albanias A		
	a producer se	urukuran (1997-14) Kimulan mahali (19	a in a company	n profession	ku sukuluwi	jugaro en e	agreempe				

	<b>→</b>	-	7	1	<b>←</b>	•	1	<b>†</b>	1	1	<b>↓</b>	4
Lane Group	EBL	EBT:	- EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ની	7		414	7	lessessing and	<b>^</b> }	11011	ሻ	<b>↑</b> Դ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12	11	12	10	10	10
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	rang va kinananan sa mu	50	energio de Ceruptel Aci	50	50	50
Trailing Detector (ft)	- 0	0	0	0	0	0	ALWAY .	0			0.00	0
Turning Speed (mph)	15		9	15	1.475.0,000.000.000.000.000.000.000.000.000.	9	15		9	15		9
Lane Util, Factor	0.95	0.95	1,00	0.95	-0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor			0.69					0.94				
Fit	Sec. 200.00		0.850		r et staat 2000 Leganor (1907)	0.850		0.965	un indexes Religios especial		0.978	0.850
Fit Protected	0.950	0.989			0.978					0.950		
Satd. Flow (prot)	1493	1611	1468	46 m	3157	1509	4-14-0	2738	40 M	1560	2889	1306
Flt Permitted	0.950	0.989	PERRODONALIS DE UNADERCO AD	enessa dan dinancia hisildi sa FAN dinan	0.978				KETFOLIO COLONIA	0.143	anni seessa arga ays, i	VXII. VXIIX UMMILLIM
Satd. Flow (perm)	1493	1611	1009	0	3157	1509	0	2738	_ 0	235	2889	1306
Right Turn on Red	TEN DEDUCTES ON O	August 1970 and 1970	Yes			Yes	reesor oerokooo uoto	native receptors a second	Yes	586489 AND PONES - CO.	SEMAN/ICAS/NEOTRO SCI. CTR	No
Satd. Flow (RTOR)	turajki atiki?	denime.	gman 19	aduru (SOD)	Line of the	83		23				
Headway Factor	1.04	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.09	1.09
Link Speed (mph)		30	et brailist	janaha 19	30	AHSIA HARAMAN	etanakan (	30			30	
Link Distance (ft)	CARREST MARKET CARRO	309	004748044814		183		ne and a superior and the	111		K KTANISTIK PLILLE	268	SANCE OF THE
Travel Time (s)	040	7.0	encives a solo	444	4.2	000		2.5	00	240	6.1	640
Volume (vph)	212	155	1 200	111	127	233	0	430	99 107	342 107	1017	619
Gonfl. Peds. (#/hr) Peak Hour Factor	0.01	0.05	0.82	0.84	0.76	0.78	0.54	0.96	0.73	0.90	0.94	0.83
Heavy Vehicles (%)	0.81 11%	0.85 6%	10%	0.64 7%	9%	0.76 - 7%	23%	16%	0.73 17%	8%	10%	0.63 5%
Adj. Flow (vph)	262	182	1076	132	167	299	-23 <i>7</i> 0	448	136	380	10%	746
Lane Group Flow (vph)		233	1	132	299	299	0	584	0	380	1265	563
Turn Type	Split		Perm	Split	200	pt+ov	elbinin <b>Y</b> eu	ООП	BREETHERSON	D.P+P	POSSUR CREATE ESTABLES.	ustom
Protected Phases	2	2		5 · .	5	5.6	reconstruction	1		6	16	6
Permitted Phases	_	-	2	UK BRANCE KATA KATA	agenery			<b>.</b>		1		1
Detector Phases	6600 <b>2</b> 0	2	2	5	5	56	Patricial No.	1	orași il III de Su	6	16	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	and The Table		8.0		8.0	ACCUPANTA PROCESSION	8.0
Minimum Split (s)	31.0	31.0	31.0	25.0	25.0	terreside a bi	nikilin (kuki) midal	25.0	anda saabaa	25.0	olytella 19	25.0
Total Split (s)	31.0	31.0	31.0	25.0	25.0	87.0	0.0	32.0	0.0	62.0	94.0	62.0
Total Split (%)	20.7%	20.7%	20.7%	16.7%	16.7%	58.0%	0.0%	21.3%	0.0%	41.3%	62.7%	41.3%
Maximum Green (s)	27.0	27.0	27.0	21.0	21.0	AL RANTED RANGE OF SERVICE STATE OF THE		28.0		58.0	0.0344 (0.00, 0.00) (0.00)	58.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	enggeste P <sup>os</sup>		3.0	min (Palatil)	3.0	Talendaria New Land	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0			1.0		1.0		1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	H PROPERTY	service period	Lead	ir awalaa	Lag	teriority acce	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	neneralii	in desemb	2.0	loge File	2.0	ani i saliti h	2.0
Recall Mode	None	None	None	None	None	Samuelous accidentation		C-Max	Ees vastyn yn weder wateren	None		None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	a de la companya de	ing paggalon	7.0	i Digita i su	7.0		7.0
Flash Dont Walk (s)	20.0	20.0	20.0	14.0	14.0		TO DESCRIPTION OF THE PERSON	14.0	MENDERNIN MINNESONA	14.0	nama Shinamar	14.0
Pedestrian Calls (#/hr)	\$2.00 0 \$4.00 \$4.00 per 100 pe	0	0	0	0		and the	0	eksinin	0	emperatural	0
Act Effct Green (s)	24.3	24.3	24.3		17.8	72.8	iko mengasang sebesara	40.9		91.9	95.9	95.9
Actuated g/C Ratio	0.16	0.16	0.16		0.12	0.49		0.27		0.61	0.64	0.64
v/c Ratio	0.87	0.89	0.01		0.80	0.39	TO A CLASSIC SOME BUSINESS	0.76	in manusicada	0.64	0.68	0.67
Control Delay	93.5	95.0	38.0	pe prompati	80.2	17.2		57.2	ander Green (d. 1864) Ander Green (d. 1864)	30.6	20.8	23.6
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0		0.0	0.1	0.0

Lanes, Volumes, Timings HSH Associates

The Merano Timing Plan: AM Peak Hour

	-	-	₹ '	f	~	7	i		•	*	•
Lane Group	EBL	EBT	EBR W	BL WBT	WBR	NBL	NBT	NBR.	SBL	SBT	SBR
Total Delay	93.5	95.0	38.0	80.2	17.2		57.2	ion interits	30.6	20.9	23.6
LOS	F	F	D	F	В	NATION RESIDENCE STREET STATES	Ε		С	С	С
Approach Delay	Marin Per	94.2	000000000000000000000000000000000000000	48.7	i i talimir (a)		57.2		energi Germani	23.3	100 / 100 (100)
Approach LOS	***************************************	F		D			E	Ayr. 1822-192-193-193-193-193-193-193-193-193-193-193	ancionate and the second	С	N COURT OF THE PROPERTY OF
Queue Length 50th (ft)	210	233	0	152	115		293	de esperalist	233	437	384
Queue Length 95th (ft)	276	#337	5	167	138	#	<del>†</del> 457		352	557	495
Internal Link Dist (ft)	Se Extra	229	de de la como	103	anaya ba		31		110.1000	188	10 TO A 11
Turn Bay Length (ft)											
Base Capacity (vph)	269	290	182	442	833		764		659	1848	835
Starvation Cap Reductn	0	0	0	0	0		0		0	0	0
Spillback Cap Reductn	0	0	2		0		0	ar armini	0	59	0 :
Storage Cap Reductn	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.78	0.80	0.01	0.68	0.36	Victorialis	0.76		0.58	0.71	0.67

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 40.6

Intersection Capacity Utilization 79.0%

Intersection LOS: D

ICU Level of Service D

Analysis Period (min) 15

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street

<b>₩</b> ø1	<b>♣</b> ø2	<b>♦</b> ø5	<b>№</b> ø6
32 \$ 100 Follows 45 18	31 8 4 1 5 1 1 1 5 1 1 1 1 4	25 31011 (65 7.51)	Port and the many and the

<sup># 95</sup>th percentile volume exceeds capacity, queue may be longer.



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1	ı	- /		_	

Lane Group	NBL	NBT	NBR SBL	SBR	SBR2
Control Delay	273.9	9.8	7.3	13.0	
Queue Delay	39.3	4.7	0.0	17.4	10000000000000000000000000000000000000
Total Delay	313.2	14.5	7.3	30.4	
LOS	F	В	Α	С	
Approach Delay	Spanisti.	167.1	aust attendes aug	Garana.	
Approach LOS		F			
Queue Length 50th (ft)	~538	156	15	252	
Queue Length 95th (ft)	#750	229	24	333	
Internal Link Dist (ft)	eliti yeni	267		Portal de	
Turn Bay Length (ft)			25		
Base Capacity (vph)	383	1141	427	1761	
Starvation Cap Reductn	21	503	0	153	
Spillback Cap Reductn	12	0	0.457	557	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	1.60	0.87	0.16	1.01	

Intersection LOS: F

ICU Level of Service D

## Intersection Summary

Area Type: Other

Cycle Length: 104

Actuated Cycle Length: 104

Offset: 45 (43%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.51

Intersection Signal Delay: 93.7

Intersection Capacity Utilization 75.3%

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 332: Valenti Way & North Washington Street



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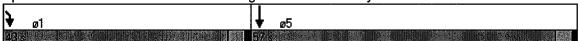
Lane Group	NBL	NBT	SBT	SBR	SEL	SER		e yezhioù ener			
Lane Configurations			ተተተ			777					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			Later and the first	Transaction of	บางเลยเมื่อให้เป็นเป็นเป็น
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	SHERNARISHEE AND NAME	~ 1,5488 (00000 VA) (0016)	0.0000000000000000000000000000000000000	BORNOS POR BURNING	Dark Mary (479) (c. september 187).
Leading Detector (ft)			- 50	And the process of		50				Politica (con	Charles careful manner
Trailing Detector (ft)		11. Sec. 11.	0	BET PLANE TO STORE LINE BY SELECTION		0	::0:::::::::::::::::::::::::::::::::::	TO BE ME TO THE PROPERTY OF TH			
Turning Speed (mph)	15		engransenie de Peterbananie de		15	9		e e e e e e e e e e e e e e e e e e e			
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.76					
Fit and the second	(12) (CF)		an partiri			0.850	page Market	Mahalas di	indensia AP		(List) Talenti
Flt Protected			P-100010 00011 0 00011 P1111	No. of Control of Cont			ccanocassación proceso con contracto de constituido	i (i (i Budestathualathróiniaí éirí th	* - 1010 1 1 1 1 2 2 4 4 4 1 1 1 1 2 2 2 4 1 1 1 1	KONY BIOLONG WAS AND A SERVICE OF COMMON	
Satd. Flow (prot)	0	0	4759	0	0	3347			eries in Lean Committee	energia de la composición dela composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición de la composición dela composición de la composición dela composición	
FIt Permitted		valnessa: Meinteressa		200400000000000000000000000000000000000		rs nobrezen coronenzacio		ectanos samer			
Satd. Flow (perm)	0	ana Oli	4759	0*	0	3347				NU TPARA	
Right Turn on Red	CONTRACTOR			Yes	**	Yes		MOTEVADO A NEGRES VÁL	TERRETERS THOUGHT FRAG		
Satd. Flow (RTOR)	4 00	4.00		4.00		127		ata a sa tay was	nankina skapaning	edinalin er de i	acammad 2.25
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	Paga ga				
Link Speed (mph)	Sivilation in	30	30	10	30 470	ant deleks la					
Link Distance (ft)	4.64.1169.0009425933	397 9.0	273 6.2		170 3.9	AND MENTAGONAL TO	reception for	mile consilio e na			
Travel Time (s) Volume (vph)	никай жизи <b>О</b>	9.0	1072	0	ა.9	487			(Open and	The place of the	
Peak Hour Factor	0.92	0.92	0.91	0.92	0.92	0.94	and a solid	0.0000000000000000000000000000000000000	0.0402PH 5 7	raematipus.	
Heavy Vehicles (%)	0.32	0.32	9%	0.02	0.32	10%		417	ist, albini ili ojimi	ilkopású jako Alk	AND THE RESERVE OF THE OWNER.
Adj. Flow (vph)	0.0	0 / 0	1178	0	0	518	ere ing kangala	Landerstein in	in the second		
Lane Group Flow (vph)	0	Ō	1178	0	0	518			Jakos Jakos		
Turn Type			11.11.20			custom	um ordanismo proje				period in a policy of
Protected Phases	TERRESONAL PARESTINA	A AL REPORTATION	5		901116124 OSBITATION ST	1	Aussiery sider i econasse av	SC 3.78 88 3.78 3.18 3.18 3.18 3.18 3.18 3.18 3.18 3.1	NATTO - 28-40-4 B-4 (ACT) - 51	V#1.	NESSER LEGISTES CONTRACTOR DE LA COMPANSION DE LA COMPANS
Permitted Phases					ng Maksh		aller fra Lovinia. I				
Detector Phases	***************************************		5			1					
Minimum Initial (s)	granin)	afalik, 193 Kalansa	8.0			8.0	property and				
Minimum Split (s)		****	24.0	Language (all of Market Mills Mills Mil	SENSEL ERNSMISET MEN	24.0	trxoranosso o estu sos ex	×:		W. 7. 7. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	en europe des entre entre entre proper
Total Split (s)	0.0	0.0	57.0	0.0	0.0	43.0		estimental			ordaniamae New International Control
Total Split (%)	0.0%	0.0%		0.0%	0.0%	43.0%			157983	State Control State Control	
Maximum Green (s)	hlander die 1990.		53.0		erze e dostina et	39.0	ath the block				
Yellow Time (s) All-Red Time (s)		A SPECIAL SEC	3.0 1.0	Sinikis daasiin	Paris Control	3.0 1.0			ing a great fire name	ra un est competitud fo	
Lead/Lag								I OLI ESTI LITTE MILITARI			ESTA ESTABLISMO DE COMO DE COM
Lead-Lag Optimize?			aritagas esta	viikiiliittiil	GREET THE WILLIAM	September 1965	T. Carriellan	trend state	y a many death	iya daya alima ka 1960	GRUGETHIN)
Vehicle Extension (s)	1005110		2.0	Ethershild A, Good		2.0	ar carrain				100 to 180 to
Recall Mode		dontro Pilit	Ped			C-Max					iche postvoladi
Walk Time (s)			7.0		M. 7	7.0	(phone 1945 at 157 pm 1808)	Pelitikas Tiba sebasa s	*	313.32.413.33.4.33.11	(2001.01.05.25.25.27.00.00m)
Flash Dont Walk (s)			9.0	nan makey	populari i	9.0	10 12 N V P S 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and design to	in the Police		amining sphylo
Pedestrian Calls (#/hr)	MINERAL PROPERTY AND AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRE		0	- (2000)		0					
Act Effct Green (s)		AS ANY	27.6	good state		64.4		HARDIBERTUA Haring Mereka			
Actuated g/C Ratio		220000000000000000000000000000000000000	0.28	Q	NIEDZIEGOW WITH DAVIN	0.64	N. 200 (10 L.)	Consideration and the second	201.040.0100.0000	9 390 3 171 8410 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	and a control of the control of the state of
v/c Ratio			0.90	n erredien	constabili	0.24					name a section dise
Control Delay			44.3	noant se Kabalusa - VA-F	KANTANTAN BARAN	7.2	PASADEMIA ASSAUL				Ballan indexilikarar balan:
Queue Delay		idiri Kabu	0.2		ryustiiji	0.4					and the control
Total Delay		er i errende	44.4	100000000000000000000000000000000000000		7.7					
LOS		a drift de PTA	D 44.4		ensetheriden	A					
Approach Delay			44.4								

The Merano Timing Plan: AM Peak Hour

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Lane Group 🐪 🗼 NBL	NBT SBT S	BR' MSEL, SER	CW - 16-46-2 William and a state of
Approach LOS	kinda arana <b>D</b> aran		
Queue Length 50th (ft)	264	49	
Queue Length 95th (ft)	291	67	
Internal Link Dist (ft)	317 193	90	
Turn Bay Length (ft)	Marie alemania	ortice discouling the second	TO MANUAL RESULT OF A SECOND
Base Capacity (vph)	2522	2200	
Starvation Cap Reductn	484	1147	
Spillback Cap Reductn	93	401	TO THE PERSONNELS OF T
Storage Cap Reductn			
Reduced v/c Ratio	0.58	0.49	
Intersection Summary	and the <b>company</b> and their	48 接入的 134 3 1 3	
Area Type: Other			
Cycle Length: 100			A THE COMPANY OF THE PROPERTY
Actuated Cycle Length: 100		en vertican anno en la companione de la co	
Offset: 57 (57%), Referenced to	phase 1:SER, Sta	rt of Green	The state of the s
Natural Cycle: 50			
Control Type: Actuated-Coordin	ated		or section and the second
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 33.2	lugia. Isberiasa a kusisi	Intersection LOS: C	
Intersection Capacity Utilization	38.7%	ICU Level of Service	e A
Analysis Period (min) 15			

Splits and Phases: 4120: North Washington Street & Beverly Street



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		1 1	•	* * /	•
Lane Group	WBL WBR	NBU NBT N	BR4 SBL S	BT SBR NE	UNER PER CENTRE
Lane Configurations	7	<b>†</b> †		1/4	<u> </u>
Ideal Flow (vphpl)	1900 1900		900 1900 1	900 1900 190	
Lane Width (ft)	12 14	12 12	12 12	12 12 1:	2 12
Total Lost Time (s)	4.0 4.0	4.0 4.0	4.0 4.0	4.0 4.0 4.0	0 4:0
Leading Detector (ft)	50	50		50	D
Trailing Detector (ft)	0	0			
Turning Speed (mph)	15 9	15	9 15	9 1	5 9
Lane Util. Factor	1.00 1.00	1.00 0.95 1	.00 1.00 1	.00 1.00 0.9	7 1.00
Frt	0.865				
Flt Protected		APPENDICATION		0.950	
Satd. Flow (prot)	0 1736	0 3505	0 0	0 0 327	3 0
Flt Permitted		and the second second	Stores and participation	0.950	
Satd. Flow (perm)	0 1736	0 3505	0 0	0 0 327	3 0
Right Turn on Red	Yes		No	No No	
Satd. Flow (RTOR)	152				
Headway Factor	1.00 0.92	1.00 1.00 1	.00 1.00 1	.00 1.00 1.00	0 1.00
Link Speed (mph)	30	30		30 30	
Link Distance (ft)	264	579		347 320	Dalah Braha a reter di berahan di b
Travel Time (s)	6.0	13.2		7.9 7.3	
Volume (vph)	0 74	0 700	0 0	0 0 272	UNICO COPE O SERVESO A LA LOTE SPANTA DA CONTRACA DE SENTENCIONA DE SENTENCIONE E SELECTION DE SE
Peak Hour Factor	0.92 0.84			.92 0.92 0.66	
Heavy Vehicles (%)	0% 1%		rocernicer: es rincontre enscedantes esse esse	0% 0% 7%	######################################
Adj. Flow (vph)	0 88	0 761	0 0	0 0 412	
Lane Group Flow (vph)		0 761	0 0	0 412	A COLOR OF THE PROPERTY OF THE
Turn Type	custom			Pro	
Protected Phases	5 7	1		Haratinan <u>propanies</u>	
Permitted Phases					to the standard standard for the control of the control of the standard of the control of the co
Detector Phases	5	1	and this plant was		
Minimum Initial (s)	8.0	8.0	NEW YORKSTONES	8.0	
Minimum Split (s)	13.0	4144 413.0		13.0	\$2000 CESTE CONTROLO CONTROLO NEL NO DE LO CONTROLO COLLEGIO DE COLLEGIO DE CONTROLO
Total Split (s)	0.0 14.0			0.0 0.0 29.0	
Total Split (%)			0% 0.0% 0.	0% 0.0% 29.0%	eran labrock filosopa a reesi brancera kirski et i o ettori bankolotti labri 1901 by brabar sanuer,
Maximum Green (s)	9.0	52.0		24.0	
Yellow Time (s) All-Red Time (s)	3.0	3,0	eerika piraksuutsa sa	3.0	######################################
MARK THE PERSON NAMED AND DESCRIPTION OF THE PERSON NAMED AND DESC	2.0	2.0	Y 1 description	2.0	BARTON DO PROBLEMA DE CONTROL O LA PROCESSION DE ARRONDO DE ARRONDO PERA PROPERTADA.
Lead/Lag Lead-Lag Optimize?	Lead Yes			La <sub>(</sub> Ye:	
Vehicle Extension (s)	2.0	2.0		1 e. 2.(	
Recall Mode	None	C-Max	CONTRACTOR AND	None	A CONTRACTOR OF THE PROPERTY O
Act Effct Green (s)	9.0	64.3		40.440	
Actuated g/C Ratio	0.09	0.64	Control Control Control Control	0.17	6.403506.0000000000000000000000000000000000
v/c Ratio	0.30	0.34		0.73	
Control Delay	3.3	5.0	His Care Care Care Care Care Care Care Care	46.6	86F0.00000000000000000000000000000000000
Queue Delay	0.4	0.1	Marita en	0.4	
Total Delay	3.8	5.1	sens a constantial	47.(	DMACHELLEGISCH LEPPERSON STAN DER VERSELLE PER WERE DAN DER DES UPSELLESSES DER
LOS	Salar Madifica Salar Areas	na Allinasa <b>A</b> allina			enganger or an Automorphism of Control of Co
Approach Delay		5.1		47.0	
Approach LOS	Pilita kilopanika kebu	A A			
Queue Length 50th (ft)	0	43		129	55°P 5010000000 F24654M1000000000000000000000000000000000000
(10)				12-1	

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Lane Group	WBL WBI	R NBL NBT	NBR SBL SE	T SBR NEL	NER 1
Queue Length 95th (ft)	All Control Police	0 57	igas i Amaronia en de com	1119	
Internal Link Dist (ft)	184	499	26	7 240	
Turn Bay Length (ft)					
Base Capacity (vph)	31	0 2253		818	
Starvation Cap Reductn		0113111444114644.0	katamperanti katami	CHANGES A VOR	
Spillback Cap Reductn	5			106	
Storage Cap Reductn		Maria de la companione de			
Reduced v/c Ratio	0.3	5 0.43		0.58	

illiter section 20 millitar	Yanan sa interes association accompanies	A STATE OF THE STA	10.00		and production of the contract	
Area Type:	Other					
Cycle Length: 100		or mention	an except distribution	en all is see by the best of	richer en Labour	
Actuated Cycle Leng	th: 100					
Offset: 46 (46%), Re	ferenced to phase 1:N	BT, Start of Gr	een			
Natural Cycle: 45						
Control Type: Actuate	ed-Coordinated	ud <b>ifferent</b>	anthalagea kalillise	edle moditalinite		STORENS
Maximum v/c Ratio: (						
Intersection Signal D		Inte	rsection LOS: B	en de la propieta de la composición de		
Intersection Capacity		ICU	Level of Service	e A		
Analysis Period (min)	) 15	and the second of the second			TPS THE HARDS TO SURE OF	

Splits and Phases: 34: Cooper Street & Sumner Tunnel Off-Ramp

-philodista i fidencia.									
<b>A</b>	1 <b>4</b> _	▲							
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, I @1	ø5	<b>/</b> Ø6							
\$7 \$ C 38 \$ 30 Sec. 30 Call C 20 Sec. 30 Sec.	HA.	00.							

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		•	4		-	<u> </u>	Ţ	4	
	FDD	TDD9	า เพยาเก	*WBL	WBT	SBL	SBT.	SBR	ø2 %; ø5ø6
Lane Group	EBR		WBL2	All Control of the Co		Section to a meaning of attribute	entalizaren karialka eta et		TO BE DO LEDO
Lane Configurations	77	<b>*</b>	001XXXX	Á	<b>^^</b>	<b>ካካ</b>	<b>\$</b>	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	12	16	12	16	12	16	
Storage Length (ft)	0,	med period of	eranaki	25		0		0	
Storage Lanes	3	uhka prompandasas	10557901 <b>2</b> 15 <b>2</b> 311	1		2		1	
Total Lost Time (s)	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	
Trailing Detector (ft)	.0.		, O	0	0'	0	0	0	
Turning Speed (mph)	9	9	15	15		15	0.05	9	
Lane Util. Factor	0.88	1.00	0.95	1.00	0.95	0.97	0.95	0.95	
Frt	0.850	0.850	ONCORONAL HUMBAR		Organismo Karlago	0.050	0.968	0.850	
Flt Protected				0.950		0.950			
Satd. Flow (prot)	2617	1382	0	1902	3539	3780	1482	1581	
Flt Permitted			were 1	0.950		0.950	4.400	4504	ukora kantara 4 Shii kabuka ka
Satd. Flow (perm)	2617	1382	0	1902	3539	3780	1482	1581	
Right Turn on Red		Yes	No			ar iz eve Kalkariak		No	
Satd. Flow (RTOR)	7.6.	61	4 00	- A 6 F	4 00		4.00	0.05	
Headway Factor	1.04	1.04	1.00	0.85	1.00	0.85	1.00	0.85	
Link Speed (mph)	Ners (Jackson Colonia)	Salah salah katan	(University 2020)		30	1712 IN POSSESSES	30		表表现是表现的。 15. 15. 15. 15. 15. 15. 15. 15. 15. 15.
Link Distance (ft)					125		397	La Company	Applications with the National Application of the Commence of
Travel Time (s)		4-7	45 HANGAZONA (14)	00	2.8	040	9.0	446	
Volume (vph)	376	47	54	26	416	843 0.93	268 0.88	446 0.91	
Peak Hour Factor	0.95	0.77	0.68	0.72	0.92	5%	20%	10%	· (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
Heavy Vehicles (%)	5%	13%	11%	0%	2% 452	906	305	490	<b>一种教育的企业的企业的企业的企业的企业</b>
Adj. Flow (vph)	396	61	79	36 115		906	387	490	
Lane Group Flow (vph		61	Dorm	Perm	452	XXT884X66550006000000	301	Prot	
Turn Type	custom	custom	Perm	Perm	1	Split 56	56	5 6	2 5 6
Protected Phases			1	1	January III			JU	
Permitted Phases  Detector Phases		4	1		1	56	5.6	5 6	
William Control of the Control of the March Street Control of the		8.0	8.0	8.0	8.0	J.O.	30		7.0 8.0 4.0
Minimum Initial (s)	8.0	22.0	22.0	22.0	22.0	, search missi			20.0 24.0 8.0
Minimum Split (s)	22.0 42.0	42.0	42.0	42.0	42.0	38.0	38.0	38.0	20.0 30.0 8.0
Total Split (s)		42.0%							660/
Total Split (%) Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	JO. 0 70	00.070	00.0.70	20% 30% 8% 16.0 23.0 4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	ouels and	a primario		3.0 3.0 3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	Jesus (Folia)	Marie Marie (1980)		1.0 4.0 1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	gganal ville	a arekarana		Lag Lead Lag
Lead-Lag Optimize?	LCau	LCGG	LCGG		H.HYUU	A CONTRACTOR	an abwarther		Yes Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	Villando (1941)			2.0 2.0 2.0
Recall Mode		C-Max		\$1.00 miles 200	THE PROPERTY OF STREET		isir ayaran 1891	tutu ililia ili alian	Ped None Min
Walk Time (s)	O Max		O Max			and the second	mara e Calli	Mary and Control of	7.0
Flash Dont Walk (s)		e de la companione de l		e de la companya de			***************************************		9.0
Pedestrian Calls (#/hr)		Age Samon	MANAGEMENT MANAGEMENT	a lateratura de la Colo	ang ang ketalah				50
Act Effct Green (s)	38.0	38.0		38.0	38.0	34.0	34.0	34.0	THE TAXABLE PARTY OF THE PARTY
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.34	0.34	0.34	
v/c Ratio	0.40	0.11		0.16	0.34	0.71	0.77	0.76	BAN 医新洲性皮肤性 300 种种种性 BAN
Control Delay	7.6	1.4	inities III	21.2	22.9	56.7	63.4	62.5	
Queue Delay	0.5	1.0		0.0	0.0	10.7	5.1	7.6	2人全对格用和自由用证法等与证据代码的主义会会会是不多数是指加速的的指数的人共享发现的不多人实验是表现。
adodo Dolay	5.5	1.0		3.5	5.5		J. 1		

	<b>\</b>	4		-	L	Ţ	1
-	Ŧ	-	Ŧ		-	Ŧ	-

Lane Group	EBR	EBR2 W	BL2 WBL	WBT	SBL	SBT	SBR	ø2	ø5	## Ø6 <sup>™</sup> ##
Total Delay	8.1	2.3	21.2	22.9	67.4	68.5	70.1			
LOS	Α	Α	C	С	E	E	E	(1) i (2) (\$4 secs 11 no sa i (3) secs 12 set	2.00 00 00 00 00 0 00 0 0 0 0 0 0 0 0 0	(1989) (1941) (A. 1910) STUDIOS (1981) (1981)
Approach Delay	e Galacet (alle			22.6	italii kun	68.3	and the	agis Milatra	ula alah bara	
Approach LOS	*******			С		Ε	*****************			
Queue Length 50th (ft)	3	0	48	105	314	275	290			
Queue Length 95th (ft)	159	0	68	146	m363	m329	m349		4.040.04.000.000	
Internal Link Dist (ft)			enima Enimano de l'assayo de la la	45	Michael	317	Marchael and American Marchael and American	a menter		
Turn Bay Length (ft)	***************************************		25							
Base Capacity (vph)	994	563	723	1345	1285	504	538		WARRING TO	
Starvation Cap Reductn	264	357	0	0	358	69	94		er de lebeloui le recension full lestrocces de le	
Spillback Cap Reductn	0	0	0	0	0	0	0.			ari Bir Kili a
Storage Cap Reductn	0	0	0	0	0	0	0			
Reduced v/c Ratio	0.54	0.30	0.16	0.34	0.98	0.89	0.92	avirkhiler ()		

Intersection Summary
Area Type: Other
Cycle Length: 100

Actuated Cycle Length: 100
Offset: 13 (13%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Intersection Signal Delay: 48.6

Intersection Signal Delay: 48.6

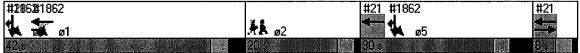
Intersection Capacity Utilization 53.9%

Intersection LOS: D
ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 1862: New Chardon Street & North Washington Street



	<b>≯</b>	-	•	1	<b>—</b>	•	4	<b>†</b>		1	<b>↓</b>	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	<b>**</b>			ተኈ		7	<b>^</b>			4	HIIIIIIII ARKINI AKK
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		1.0	50	actinicis.		50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	HEADER D'HINTERNETT
Turning Speed (mph)	15	i ka tinggan ala	9	15	a de la compania de	9	15		9	15	4.21	9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.01	area (P	GATTE TENTECH	0.998		1977	0.850	(attorney)		0.907	FILLERIAN
Flt Protected	0.950					X a saidhidh	0.950				0.985	A successive Walletin
Satd. Flow (prot)	1770	4759	0	0.0	3279	0	1805	1615	0	······································	1664	0
Flt Permitted	0.263		Methia 1700	<b>-</b>			0.749				0.959	N 10 72 10 20 20 20 20 20 20 20 20 20 20 20 20 20
Satd: Flow (perm)	490	4759	0	0	3279		1423	1615	0	0	1620	0
Right Turn on Red	199		Yes			Yes	Hambalinan ()		Yes	lodg:		Yes
Satd. Flow (RTOR)				nave dan 1919	4		HIT.	272	and the second	ordink <sup>st</sup>	9	NG COLUMN TO
Headway 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
Link Speed (mph)		30	garings of	1.00	30		Than a	30	Carriera -		30	111111111
Link Distance (ft)		204	MAN PRASSABILITA		132			531		19 NOTE 1 TO 18 NO	162	
Travel Time (s)		4.6	is constitut		3.0	aminist (	green.	12.1	and a life	9,4,988.0	3.7	
Volume (vph)	7	600	0	0	727	13	139	0	15	4	0	8
Peak Hour Factor	0.92	0.83	0.92	0.92	0.77	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	0%	0%	10%	2%	0%	0%	0%	2%	0%	2%
Adj. Flow (vph)	8	723	0	. 0	944	14	151	0	16	4	0	9
Lane Group Flow (vph)	8	723	0	0	958	0	151	16	0	0	13	O .
Turn Type	Perm		en anti-		a settem a val		Perm	and settle		Perm	Lighterialists	
Protected Phases	Service Control of the Control of th	1	S. C. Sallin Radio (1864 Grij)		1	00549871	iiiiiiin neprinde	5	g gyrgh pyrollonian A. 6800	45¥3478.6048888888	5	06000000000000000000000000000000000000
Permitted Phases	- 1		Light Colf		1912		5			5		same strain
Detector Phases	1	1	e e e e e e e e e e e e e e e e e e e	(	1		5	5		5	5	
Minimum Initial (s)	8.0	8.0	1000	and the state of	8.0		8.0	8.0	and section in	8.0	8.0	
Minimum Split (s)	22.0	22.0	Q#V;\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		22.0	NUMBER OF SERVICE	20.0	20.0		20.0	20.0	1880 Per Co. (1900)
Total Split (s)	65.0	65.0	0.0	0.0	65.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	72.2%		0.0%	0.0%	ARRESTS TO SELECT		27.8%	27.8%	0.0%	27.8%	27.8%	0.0%
Maximum Green (s)	61.0	61.0		rent de la companya br>La companya de la co	61.0	ate new	21.0	21.0	rana engleria k Langua kalabah 118	21.0	21.0	
Yellow Time (s)	3.0	3.0	16614888831943434	***************************************	3.0	(C.X1)[494](FEEEESLAND)	3.0	3.0	HEATTER WALKER & SECTION	3.0	3.0	ACCUMENTAL PROPERTY.
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0	1.0	ak e a se pili
Lead/Lag	(A) (3) HHHHHHHAVS	tok (486 yaniliyi)		1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00 - 1.00	LECTION OF THE PROPERTY OF THE	ng grang ngir nukabutabeshirico sa		FALLER FARA II JOKAN I MORETTON IN	errorrende en mile Sterner (1.000 augus)		0000,00000 G (Mari 1991-) 1 Sandah Sandah	
Lead-Lag Optimize?		A Complete		i di Barana	ing dan b					an Linear E	are in the	
Vehicle Extension (s)	2.0	2.0	948700796445 JJ 2514 Led 126		2.0	NP (24 for 20 v 20	2.0	2.0		2.0	2.0	a management of the second
	C-Max	C-Max	ac North Carlo	aneman di Managarakan bib	C-Max		None	None		None	None	
Walk Time (s)	10.0	10.0		22.7.26.000.00	10.0	NAMES OF TAXABLE PARTY OF TAXABLE PARTY.	12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	8.0	8.0	i jarilla d		8.0	water the state of	1.0	1.0		1.0	1.0	Harris II
Pedestrian Calls (#/hr)	0	0		S (Shirt) American an anatom	0		0	0		0	0	
Act Effct Green (s)	68.4	68.4		Moville 1	68.4		13.6	13.6			13.6	anter (Till)
Actuated g/C Ratio	0.76	0.76		SSS A MAY & DES DANSE LARGE	0.76		0.15	0.15			0.15	
v/c Ratio	0.02	0.20	one Alexandra	nganinan	0.38	arian Jeografia	0.70	0.03	agreer i		0.05	104038-71475 104038-71475
Control Delay	2.4	2.2			4.7		52.8	0.1			19.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0	a dan Palabat		0.0	
Total Delay	2.4	2.2			4.7		52.8	0.1			19.4	
LOS	A	A-		arumare Alphania (NA)	A	nigation and a	D		apusarentesat. Martikaren eta		В	eneggi salayan Manazar atalah
Approach Delay		2.2	Annual or design the Table		4.7			47.7			19.4	

The Merano Timing Plan: AM Peak Hour

	<u>-</u>		•	▼	_	١,	i	1	•	¥	•
Lane Group	EBL	EBT	EBR: V	VBL WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		Α.	alianako keleta	A	Company of the	e de la	D			В	
Queue Length 50th (ft)	1	19		75		83	0			2	
Queue Length 95th (ft)	m2	24		112		136	0	Last St. St.		17	
Internal Link Dist (ft)		124		52			451			82	
Turn Bay Length (ft)		mann - v	100	<b>Sek</b> torennen jour		unitari d	90 Maria			Meiothion	in the Children
Base Capacity (vph)	372	3616		2492		332	585			385	
Starvation Cap Reductn	0	## O+			Arthur Hall	0	0			0	
Spillback Cap Reductn	0	0	n nitrografia noti on mbriti di internisci di in	0	Sec restre, in supplicate Short-William Sec	0	0		PM & SSM : CARROLL A RESIDENCE	0	(XA0000000X+4880X
Storage Cap Reductn	0	0		0	and the control	. 0	0	e allegana	Web.	0	21 - 2020
Reduced v/c Ratio	0.02	0.20		0.38		0.45	0.03			0.03	

Intersection Summary

Area Type:

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green

Other

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 7,7

Intersection LOS: A

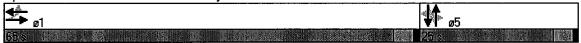
Intersection Capacity Utilization 41.5%

ICU Level of Service A

Analysis Period (min) 15

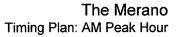
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 506: Causeway Street & Haverhill Street



	•	<b>→</b>	•	<b>*</b>	-	•	1	<b>†</b>	<b>/</b>	1	ļ	4
Lane Group	EBL	EBT	EBR	.WBL	WBT	WBR	NBL	INBT	NBR	SBL	SBT	SBR
Lane Configurations				ነ	<b>4</b> }						<b>∱</b> }	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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)	nder er e	continue e		50	50		etig ke ti alie, sa Lair				50	MTPH MALL
Trailing Detector (ft)	4.5			0	0	6	4 =	NESSEL INCOME	0	45	0	
Turning Speed (mph) Lane Util. Factor	15 1.00	1.00	9 1.00	15 0.91	0.91	9. 1.00	15 1.00	1.00	9 1.00	15 1.00	0.95	0.95
Ped Bike Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.98	0.93
Frt		accent (AM	ATIVA		HALDS HELD THE STATE				2.000		0.944	418230
Flt Protected		videnim temak		0.950	0.984	26017/1016/00/2017/17	pariticle patient	Personal sections (	(1146 <u>(115,1994)</u> (117	serian engagt		e a manual acad
Satd. Flow (prot)	0	0	0	1643	3403	0	0	0	0	0	3326	0
Flt Permitted		2 12 12 12 12 12 12 12 12 12 12 12 12 12		0.950	0.984				satronia con	Almand		
Satd. Flow (perm)	0	0	0	1643	3403	0	0	0	0	0	3326	0
Right Turn on Red	The distributed	1,100 mg	Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				225	100						98	
Headway 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
Link Speed (mph) Link Distance (ft)	nanos de messa	30 142	SEP 2 14 (19 (19)	nan iste attainea; i	30 213			30 170			30 521	
Travel Time (s)		3.2	a, saliana	ritionalnis raik	4.8		arabatan 1974	3.9		States Parties	11.8	
Volume (vph)	0	0.2	0	334	265	0	0	0.0	0	. 0	153	90
Confl. Peds. (#/hr)		7	7.00			0.00	ter kalangan para		CERA, ESCAPE PER AL CALLES			50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	363	288	0	0	0	0	0	166	98
Lane Group Flow (vph)	0	0	0	225	426	0	- 0	0	0	0	264	0
Turn Type				Split	NNA SERVANNI (LEVAN				regione and annual entry terms	MUSUMER BESTROJUST		
Protected Phases		Lindi (Lindin) i serili Lindin i serili		-1	1	announne (1841)	nersee and	On Physical Section 19	P. Carrier Comme	sala korust	<sub>550</sub> , 500	
Permitted Phases Detector Phases				4	1		KAKATAN MAKAT	restrences again	an ar ar sala ar ar a		5	
Minimum Initial (s)	New American		Nertucal I	8.0	8.0			kian Zimin, and A	Sartenia de	enimiakeni	5.0	
Minimum Split (s)		AND COUNTY	Andre State 5	13.0	13.0		ing powers of	lie Heiller of	amenten peris	THE PLANT	20.0	1419111011111
Total Split (s)	0.0	0.0	0.0	52.0	52.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	52.0%	52.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.0%	0.0%
Maximum Green (s)				47.0	47.0						27.0	
Yellow Time (s)			day sability	3.0	3.0		0.00	idisələri (iğa	Littler (ELP).		3.0	
All-Red Time (s)	INTERNATIONS KHUNG	KRANCGENAN (H HINGE)	ung menghakan	2.0	2.0						2.0	ringinia (
Lead/Lag	aran dibakat bakat	nijonik (s) ili ili ili		Lead	Lead	intration de		a de la complet			an Altranto Allon	A DESCRIPTION OF THE PARTY OF T
Lead-Lag Optimize? Vehicle Extension (s)			ing to a resident	2.0	2.0				Alexandria de la como	ana a Bhui	2.0	
Recall Mode	an in the authorited and the	ASSIVE AND UNI		C-Max	1.7.200.00000000000000000000000000000000	THE CALL STREET WELL BEING					Max	10040004700
Walk Time (s)	elebar 2000				evernos					Maurichil	Week and	gara (N. Jan
Flash Dont Walk (s)		4131143	y Hana, o Casalosa									#040/U864646#
Pedestrian Calls (#/hr)	104 MH 110	ir primisa sa sa s	WATER		MILIMENTAL PARTIES		er com en		energia de la composición dela composición de la composición de la composición de la composición de la composición dela composición de la composición de la composición dela composición dela composición de la composición dela composición de la composición dela composición dela compo	nemmer of managet (b)	a dhalla an	marken
Act Effct Green (s)				48.0	48.0						28.0	
Actuated g/C Ratio	odystaliaisoli ka	here anna	Lie Gulf	0.48	0.48		unuli vittaali Beriäli aitamissä aastava				0.28	
v/c Ratio	HANG PLANESCHER SCHER	a son esementarione		0.25	0.25		evili kazvatena	j			0.26	
Control Delay	a alle superior de l'Alle	Ном; но т		2.7	12.0			4			18.1	untul (4)
Queue Delay Total Delay				1.6 4.3	2.2 14.2		w (commis AE)	11111			0.0 18.1	
LOS	linenanii i		anny bath	4,3 A	14.2 B			i prima i prim			10.1 B	outer (An
											<u> </u>	

ane Group 1 3 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
ane Configurations
deal Flow (vphpl) otal Lost Time (s)
eading Detector (ft)
railing Detector (ft) urning Speed (mph)
ane Util. Factor
Ped Bike Factor
It:Protected Satd. Flow (prot)
It Permitted
Satd. Flow (perm) Right-Turn on Red
Satd. Flow (RTOR) Headway Factor
ink Speed (mph)
ink Distance (ft) ravel Time (s)
/olume (vph)
Confl. Peds. (#/hr) Peak Hour Factor
Adj. Flow (vph)
ane Group Flow (vph) urn Type
Protected Phases 2
Permitted Phases Detector Phases
Ainimum Initial (s) 7.0
finimum Split (s) 16.0 Total Split (s) 16.0
otal Split (%) 16%
/aximum Green (s) 14.0 /ellow Time (s) 2.0
All-Red Time (s) 0.0
ead/Lag Lag ead-Lag Optimize?
/ehicle Extension (s) 2.0
Recall Mode Ped Valk Time (s) 7.0
Valk Time (s) 7.0 Flash Dont Walk (s) 7.0
Pedestrian Calls (#/hr) 50
Act Effct Green (s) Actuated g/C Ratio
/c Ratio
Control Delay Queue Delay
Total Delay OS



<i>→</i>	<b>→</b> ✓	<b>←</b> •	• 1	Ť	<b>/</b>	-	<b>↓</b>	*
Lane Group EBL (EBT	EBR WBL	WBIT WBI	R NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		10.8	Mark of Willer	HADDE TO		ta kalenderi Kalendari	18.1	Angles
Approach LOS		В					В	
Queue Length 50th (ft)	enge mengapop 04	631			agar gyariti tiri	n dan h	42	nse sulventil
Queue Length 95th (ft)	41	95	Propropos of Boderstale September 1		ye yanga waranani na bisheb	accole liferanto, el hypopoli li risale	74	ser www.except.cs.x.
Internal Link Dist (ft) 62	BRADIA MARINE	133		90	AGUANTANA AGUANTAN		441	nado (1774
Turn Bay Length (ft)		AA GA AGUR TI GARAGA AA GA		2.570.620.000.000.000.00	DETTENDE KONTONIEN GENEROLE			****
Base Capacity (vph)	906	1685		ATTACL SECTION		10.1991.0	1002	
Starvation Cap Reductn	510	1094	enem fra Nerel 1855 fere		e resistantiane		U	eraspatadalkints
Spillback Cap Reductn	24	25					1	nani
Storage Cap Reductn	0	0					0 00	
Reduced v/c Ratio	0.57	0.72		1 A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a president (CIC)		0.26	
Intersection Summary	annaman <b>i nasa</b> at sa		police (#FF		2 <b>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</b>	usasini di Pis	Table 188	alaman med
Area Type: Other								
Cycle Length: 100		- April - 1944-1950 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850 - 1850	***************************************	0.000				
Actuated Cycle Length: 100			proposition de		Section 12	.0290	er al Artifet	
Offset: 36 (36%), Referenced to phase	1:WBTL, Start	of Green						
Natural Cycle: 50		ggamabeliatibas 1		gandista.	and Maril			
Control Type: Actuated-Coordinated			construence materials of Colores (#867-867-96					
Maximum v/c Ratio; 0.26		peninderalité d	AND STREET			aming Na	NUMBER OF	
Intersection Signal Delay: 12.9		ntersection Lo				ISSESSESSES OF THE PARTY.	da a santa da santa	PRO 1041 F40 F70
Intersection Capacity Utilization 31.4%		CU Level of S	Service A			nation of the		iii ka
Analysis Period (min) 15								

Splits and Phases: 65: Valenti Way & Beverly Street

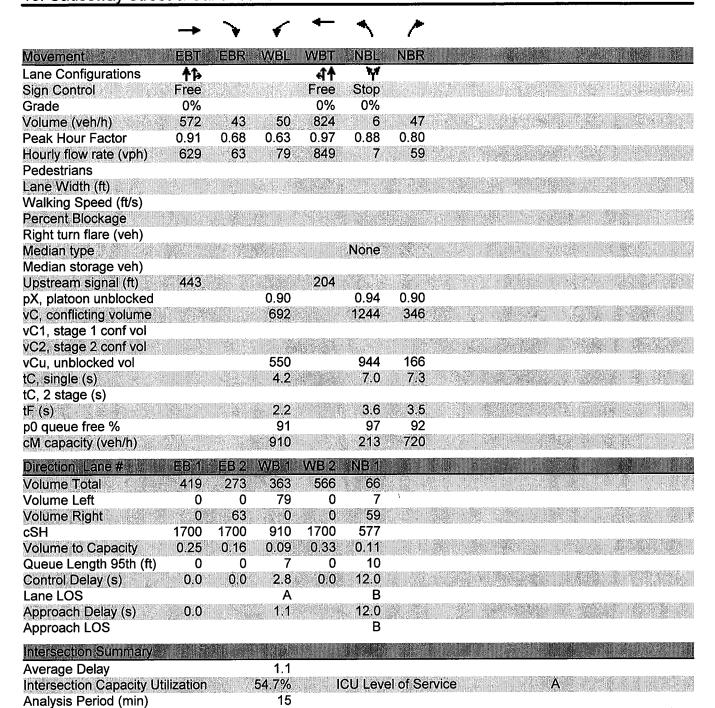
<b>▼</b> ø1	Åk ø2	
	-124 163 163 1923 1924 1924 1	a and the second

Lane Group	022 constant for the 2 steel register to the constant of the c
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	THE RESIDENCE OF THE PROPERTY

	Y 1	1 /*	<del>\</del>	· · · · · · · · · · · · · · · · · · ·	
Movement	WBL		SBL #SBT		
Lane Configurations	¥				Dynessassas
Sign Control Grade	Stop 0%	Free 0%	Free 0%		
Volume (veh/h)	1		0 1134		on the contract of the contract of
Peak Hour Factor	0.25 0.75		0.92 0.92	等。 1. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Hourly flow rate (vph)	4 60		0 1233		TO STATE AND LINE
Pedestrians			s, versionalis (1944) eta esta esta esta esta esta esta esta		ADVISTABLITAD INDUM
Lane Width (ft)		Albania (In Schimmordia)	ar allement person		
Walking Speed (ft/s)		30 TO 10		and analysis the second program Application of the second	
Percent Blockage					
Right turn flare (veh)					41.
Median type	None	ticiologia (PAZACIA)	entini Militari Maria di	The policy of the party of the	
Median storage veh) Upstream signal (ft)		495	111		
pX, platoon unblocked	0.73	450	144		
vC, conflicting volume	1169 276	1625 A. C.	553		en l'energy
vC1, stage 1 conf vol					According to the state of the s
vC2, stage 2 conf vol					
vCu, unblocked vol	861 276		553		
tC, single (s)	6.8 7.2	alitikalisi aspenija ki situ	4.1		e Marin de la compa
tC, 2 stage (s)					
tF (s)	3.5 3.5 98 91	entropolitica este topi	2.2 100		
p0 queue free % cM capacity (veh/h)	218 681	entre announce de l'entre e	1027		
	**************************************	Disabenda and Kilina and	Total transmit community of the second second		
Direction, Lane ##	WB1 NB1		SB2		A TOTAL
Volume Total	64 276		616	jarat altikkaliigintäässa einkenens	allog Property
Volume Left Volume Right	4 0 60 0		0 45		10.5 SEE
cSH	601 1700		1700		EMILION CONTRACT
Volume to Capacity	0.11 0.16		0.36	i jang sa sampa sa salah sa mula.	
Queue Length 95th (ft)	9 0		0	PROPERTY OF THE PROPERTY OF TH	A\$1195, 12 (15) (1) (2000)
Control Delay (s)	11.7 0.0	0.0	0.0		ENTERNIE PARK
Lane LOS	В		n i (Artistisker) tit lig ga til visigertinglickhildrisk kvant (avet 1807 til stylletin).		20.000000000000000000000000000000000000
Approach Delay (s)	11.7 0.0	0.0	and the analysis was	in version of the state of the	
Approach LOS	В				
Intersection Summary		an an t-ann br>T-ann an t-ann an t-	and the second s		and the second second
Average Delay		0.4			SACRAGEMENT SECTIONS FOR DATE OF
Intersection Capacity Ut	ilization	HDBBBHGNBBBBGBBHGNBKGBHTHATER BSSSSSSSSBBHBBBHBB	J Level of Service		
Analysis Period (min)		15	Karagaran (1900)		U PROVINCE GLASTING PALLO
	PROFILE STATE OF THE STATE OF T				Bedurastra

	ሻ	<b>†</b>	<b>↓</b>	w	•	<b>&gt;</b>	
Movement	NBL	NBT	SBT	SBR	SEL	SER	
Lane Configurations		ተተ	<b>^</b>		¥Υ		
Sign Control	, a mai (1949)	Free	Free	(HINGUES AND	Stop		
Grade	suns community (10 490 2860)	0%	0%	endrus elektropata por	0%		
Volume (veh/h)	0	464	1134	0	19	12	
Peak Hour Factor	0.75	0.92	0.90	0.63	0.92	0.92	
Hourly flow rate (vph)	is is a <b>0</b> 44	504	1260	0.4	21	13	
Pedestrians		ur per er er er	4 12.0	And Advisory of the			
Lane Width (ft) Walking Speed (ft/s)	Landing.	ati, kali pili X	4.0	ni sa	Per o Caroline do		
Percent Blockage			4.0				
Right turn flare (veh)		NI E	. I see talkan see			PARTIE DE LA COMPANION DE LA C	
Median type		PROTON DESIGNATION	. Species	garage sa Kil	None		
Median storage veh)	August Conduct		HATCHING DIRECTOR				#3 tax <del>community descriptions of the second temporary states and second /del>
Upstream signal (ft)		109	497	er Aldere	nga ay sa 1		
pX, platoon unblocked	0.75	····		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.75	0.75	
vC, conflicting volume	1260			(mediler)	1516	630 (4) (4)	
vC1, stage 1 conf vol	KO: 1000025410004230	ergenesse entre it unidustri	ramanari (Maridaa)	HTTS ACONS COME			
vC2, stage 2 conf vol	4040		usakal IP		4050		
vCu, unblocked vol	1019			onegaryone is no	1359	184	
tC, single (s)	4.1	The state of the s	Follow	ALD MAINTHAN	6.8	6.9	
tC, 2 stage (s) tF (s)	2.2				3.5	3.3	
p0 queue free %	100			Part Common Rock	81	98	
cM capacity (veh/h)	510	icasolii eel a			107	629	And the complete solution is a second con-
COMMITTED THE PROPERTY OF THE	1725 <b>(20</b> 15) (1915) (1915)		Magnine 1995	an all	Accessors was also		
Direction, Lane#	NB 1	NB 2	SB 1	SB 2	SE 1		
Volume Total	252	252	630	630	34	CONTRACTOR OF THE STATE OF THE	
Volume Left	0 0	0 . 0	0 6 - 2 - 0	0	21 13		
Volume Right	1700	1700	1700	1700	158		
Volume to Capacity	0.15	0.15	0.37	0.37	0.21		
Queue Length 95th (ft)	0.10	0.,0	0.07	0.07	19		
Control Delay (s)	0.0	0.0	0.0	0.0	33.9	erieron cerci. Descripto de la completa de la comp	
Lane LOS	ursum of Ursurerial and	metalore.	occupa DEStructor For Market		D	ingere protein (1997)	
		HEFTERSHER FOR COMMISSION OF THE SECOND COMMIS	ROZVAUASK	001/1805059810101	~~~	THE THE PARTY OF T	

Approach Delay (s) 0.	0.0	33.9
Approach LOS		D
Intersection Summary		
Average Delay	0.6	
Intersection Capacity Utilization	on 41.3%	ICU Level of Service A
Analysis Period (min)	15	



	-+	$\rightarrow$	1	<b>←</b>	1	<i>&gt;</i>
Movement 1	EBT	EBR	WBL	WBT .	*NBL	NBR // MI WE WAS A PARTY OF THE
Lane Configurations	ተተኈ			ተጉ		**************************************
Sign Control	Free	agada da P		Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	409	12	16	733	0	
Peak Hour Factor	0.83	0.92	0.92	0.78	0.70	0.89
Hourly flow rate (vph)	493	13	17	940	<sub>20</sub> 744 0 0	
Pedestrians				PROBLEM DOWN OF THE OWNER.	324	
Lane Width (ft)			All and the second		0.0	
Walking Speed (ft/s)	AMERICAN STREET		The other Code Code Code	Salata da Asia	4.0	
Percent Blockage			nia refeat		0	
Right turn flare (veh)	0.00041744084276724428	na nasa ang mga katalong katalong sa sa		ELECTRICAL PROPERTY.		
Median type		and the second	344 III (124 30	garantiferin	None	
Median storage veh)		State of the Section			arraina a recordar	
Upstream signal (ft)	387	AMPTER LEGISLOS DOS	aus (British	309		
pX, platoon unblocked			000		4000	AND THE STATE OF T
vC, conflicting volume			830	State of the	1328	495
vC1, stage 1 conf vol			Establish Company		22540	
vC2, stage 2 conf vol	III.		830	and the	1328	495
vCu, unblocked vol			4.1		6.8	7.1
tC, single (s) tC, 2 stage (s)	and the second		ASS TALL	444.1	0.0	
tF (s)	and Article	Sec. 10.	2.2	Tall agent	3.5	
p0 queue free %	2.00				200	
bo duede lice 70	20,000 2 ( ) 41 W 24/24-27 L 17 ( 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		98		100	3.4 100
	100	SEPTEMBER TO THE TOTAL PROPERTY OF THE TOTAL	98 811	11100	100 146	100
cM capacity (veh/h)			811		146	
cM capacity (veh/h)  Direction, Lane #	E81	ener Sentant	EB 3	WB 1	146 WB 2	100
cM capacity (veh/h)  Direction, Lane #  Volume Total	197	197	811 EB 8 112	331	146 WB 2 626	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left	197 0	197 0	811 EB 3 112 0	331 17	146 WB 2 626 0	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left  Volume Right	197 0 0	197 0 0	811 EB 3 112 0 13	331 17 0	146 WB 2 626 0 0	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left  Volume Right  cSH	197 0 0 1700	197 0 0 1700	811 112 0 13 1700	331 17 0 811	146 WB 2 626 0 0	100 505
cM capacity (veh/h)  Direction Lane #  Volume Total  Volume Left  Volume Right  cSH  Volume to Capacity	197 0 0 1700 0.12	197 0 0 1700 0.12	811 112 0 13 1700 0.07	331 17 0 811 0.02	146 WB 2 626 0 1700 0.37	100 505
cM capacity (veh/h)  Direction Lane #  Volume Total  Volume Left  Volume Right  cSH  Volume to Capacity  Queue Length 95th (ft)	197 0 0 1700 0.12 0	197 0 0 1700 0.12 0	811 EB 3 112 0 13 1700 0.07 0	331 17 0 811 0.02 2	146 WB 2 626 0 1700 0.37 0	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left  Volume Right  cSH  Volume to Capacity  Queue Length 95th (ft)  Control Delay (s)	197 0 0 1700 0.12	197 0 0 1700 0.12	811 112 0 13 1700 0.07	331 17 0 811 0.02 2 0.7	146 WB 2 626 0 1700 0.37	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left  Volume Right  cSH  Volume to Capacity  Queue Length 95th (ft)  Control Delay (s)  Lane LOS	197 0 0 1700 0.12 0 0.0	197 0 0 1700 0.12 0	811 EB 3 112 0 13 1700 0.07 0	331 17 0 811 0.02 2 0.7 A	146 WB 2 626 0 1700 0.37 0	100 505
cM capacity (veh/h)  Direction Lane #  Volume Total  Volume Left  Volume Right cSH  Volume to Capacity Queue Length 95th (ft) Control Delay (s)  Lane LOS  Approach Delay (s)	197 0 0 1700 0.12 0	197 0 0 1700 0.12 0	811 EB 3 112 0 13 1700 0.07 0	331 17 0 811 0.02 2 0.7	146 WB 2 626 0 1700 0.37 0	100 505
cM capacity (veh/h)  Direction, Lane #  Volume Total  Volume Left  Volume Right  cSH  Volume to Capacity  Queue Length 95th (ft)  Control Delay (s)  Lane LOS  Approach Delay (s)  Approach LOS	197 0 0 1700 0.12 0 0.0	197 0 0 1700 0.12 0	811 EB 3 112 0 13 1700 0.07 0	331 17 0 811 0.02 2 0.7 A	146 WB 2 626 0 1700 0.37 0	100 505
cM capacity (veh/h)  Direction Lane #  Volume Total  Volume Left  Volume Right cSH  Volume to Capacity Queue Length 95th (ft) Control Delay (s)  Lane LOS  Approach Delay (s)	197 0 0 1700 0.12 0 0.0	197 0 0 1700 0.12 0	811 EB 3 112 0 13 1700 0.07 0	331 17 0 811 0.02 2 0.7 A	146 WB 2 626 0 1700 0.37 0	100 505

ICU Level of Service

35.0%

15

Intersection Capacity Utilization

Analysis Period (min)

15

The Merano

Timing Plan: AM Peak Hour

		*	₹	•	7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR		CONTRACTOR AND AND ADDRESS.	potential potential processing the contract of	Thate - and
Lane Configurations	ተተ <sub>ጉ</sub>		ÌŊ	<b>个</b> 个						
Sign Control	Free	menteris i	destantal	Free	Stop		er die er militie		Patricking	The open
Grade	0%			0%	0%					000.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Volume (veh/h)	410	218	16	739	oreno <b>0</b>	0	Ulful andreas	THE HARRY		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	TISSESSES OF PRACTICAL REPORT NAME OF A STATE OF THE STAT	of Name (or the Proposition Co. Adv. 2000)	Odnobo wakila nakila na kao kao mai ilian k	
Hourly flow rate (vph)	446	237	17	803	0	enthicker <b>O</b> ne scottle	lating and			Addition of the
Pedestrians		naSaturat telliani		933490003504 <b>9</b> 0	330	NAME OF TAXABLE PARTY O	9763 ST		ukan ing cari ka lumba	
Lane Width (ft)	en e			17 July 161	0.0		THE REAL PROPERTY.		entri Are	Physician
Walking Speed (ft/s) Percent Blockage	e recolue con il non mon	Base deserves per Part	S ENTRE PROPERTY STREET	in Service Un	4.0 0					
Right turn flare (veh)	Communication (Communication)	Martin de la company	erentalisadies	Hard St.	U	PERMITTED LINES	ari king ti kina k		Pitering and	Helian para di
Median type					None	Salla Colonia		**************************************	Matha A.	
Median storage veh)									ediki di	
Upstream signal (ft)	132		NIAW English to the	564	Althering	ga se percentago de como Politica esta esta en		anani kanan	e partici	APPENDING STOP
pX, platoon unblocked		::::::::::::::::::::::::::::::::::::::	0.97	Hillion Tar Service	0.97	0.97	and Macadeministra			PERMITTAL S
vC, conflicting volume		elli (delle legative	1013	Tillion syn	1331	597	la Se diverg	i de la companya da br>Na la companya da la		
vC1, stage 1 conf vol				SOUND AREA TO HER HEAR	APACET TODAY PLANT &C.	3-4-40-00-00-00-00-00-00-00-00-00-00-00-0		P# 70410000 19200000011100000	**************************************	107000000000000000000000000000000000000
vC2, stage 2 conf vol	ar olerland	The same	TOMOS DESI			COMPANIE.		erenta de la composición dela composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición de la composición dela composición de la composición dela composición d	Militaria espe	Alleria (p. 16)
vCu, unblocked vol	**************************************		950		1278	521	a AMS and Manager			
tC, single (s)	negaste		4.1		6.8	6.9			Partition of	
tC, 2 stage (s)						######################################	430 LE X		1047134414141414422484	
tF (s)	i kana na mana br>Na mana na man	and the second	2.2	Til Falle file.	3.5	3.3		Westphane,	Sandina de Cara	HEISTAN FO
p0 queue free % cM capacity (veh/h)			98 709		100 152	100 490	en i de la companya di seria			
NAMES OF A PERSON AND A STATE OF THE PROPERTY				Wanania.	DOREDO BOTO TRACTORS IN S		THE CONTRACTOR			
Direction,:Lane #	EB/I	EB 2		WB 1	WB 2	WB 3		TERMORES Official Cases		Property.
Volume Total	178	178	326	17	402	402	suntantinggles historia			
Volume Left		0	0	17	0	0	-77 \$1300 00 \$ 5000 Marie 2000 00	28000 0000 000 T 1 1 1 1 1 1 1 1 1 1 1 1 1	RMANAS IN NASaul star also concernos consulos sua sector	
Volume Right	0,	0	237	0	0	0 1				decimally mxxxx
cSH	1700	1700	1700	709	1700	1700			Glasinian emisse North	
Volume to Capacity  Queue Length 95th (ft)	0.10 0	0.10 0	0.19 0	0.02	0.24	0.24			Title out of the color	
Control Delay (s)	0.0	0.0	0.0	2 10.2	0.0	0.0	and the second			1.1
Lane LOS	ARHITA AREA	0.0	0.0	10.2 B	. O.O.		* * * * * * * * * * * * * * * * * * * *		omomenati VI	11
Approach Delay (s)	0.0	Filencia:	Salata Angeles	0.2	ed Carlonality					Little and the second
Approach LOS				7.7	40 PHER 1 THE CHALLES AND				CRESCO AND	
•					i Galigabili z ekityez e.			69389848888 <b>1088838</b>	- Marie - Trans	15077498
Intersection Summary		order een gebeure	0.1	HUURITATHES, LOE		THE PROPERTY OF	ar sometimes	SEA ESTABLISHED		arthur mu <sub>de</sub> s.
Average Delay Intersection Capacity Ut	ilization		0. i 23.8%		)    \\\ <u>\</u>	el of Service		HERON NO.		
Analysis Period (min)	mzauvii	2040/044	.s.o <sub>%</sub> 15	i e de la companya d	∍∪ E∈∧€	SI OF SELVICE		А		
Analysis i Griod (IIIII)	(2846) 11115					erce team ercent in a sand	n Color de la colo	(SESSE)	CERTIFICATION DANGE	

	<b>→</b>	-	←	•	-	1					
Movement	FBU	EBT	WBT	WBR	SBL	SBR			e Pitanin	un sense Status	
Lane Configurations			<b>∱</b> ∱								
Sign Control	The transition	Free	Free	EARCHON)	Stop	daliya yaya	amarantarin	medalis e	ng disember		Section 1
Grade		0%	0%		0%					TO THE STOCKES AS DESCRIBED BY STOCKES AND	
Volume (veh/h)	0	0.5	202	153	0	0	n y jerkant sa	nwa kana		OPHEROVILLED	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	DRINKTININGST PARACIPOS NA	I MAN THE STATE OF			2617
Hourly flow rate (vph)	0	0	220	166	0	0	estados procesos. Giburilias (M2 C. A.)				
Pedestrians					310		management of the second of a second of the	A CONTRACTOR OF THE STATE OF TH	of the second colors, and second	management of the state of the	0000
Lane Width (ft)	Palataka u	landania			0.0			and the state of	point the second		
Walking Speed (ft/s)					4.0						
Percent Blockage		folial (191	San A	na na <del>ka</del> asaa ja	0					i a ulieskalajajaj	
Right turn flare (veh)								Control of the Contro		**************************************	200,00
Median type	li sure e			elle lluven	None	Hallattagg	uunin en in	en parties	e de la compa		
Median storage veh)											
Upstream signal (ft)		Propries	142	Parada de la compansión d				The state of the s	100740-95	$\mathrm{SP}(M) \to \mathrm{SP}(\mathrm{SP}(\mathbb{R}_{+}))$	
pX, platoon unblocked	0.95				0.95	0.95					
vC, conflicting volume	696	aliya baran		De Held Arthur De Landers	613	503	Look of Lebes 10, 1911	Market Contract	hilitak (gay)	MRS. Manufestina	
vC1, stage 1 conf vol	t sa medihedigidikmenedis, je dikibili sa se re	A MORE MENTAL PRODUCTION CONTRACT		::::::::::::::::::::::::::::::::::::::					Market of the Company		
vC2, stage 2 conf vol	e de la companione de l			estaturen e		wiking a diapun	nii Saya (balan)				
vCu, unblocked vol	633		ENGRASIAN MAGALANTAN	ratez-garez (montrologoa)	546	431					4.3511
tC, single (s)	4.1	Bulling B	Mayna	erikkin	6.8	6.9		100	iller Melanda		
tC, 2 stage (s)		encolox/fugration	voje na 18 stalen 18 det 18 d	erezanni sucre enderenesis			Enverse Architectura		Salas Sa	P \$ 100 P C C C C C C C C C C C C C C C C C C	own:
tF (s)	2.2	Asset Inches	All the same		3.5	3,3	hierung puntang				
p0 queue free %	100			12()H4527\$769067497	100	100	20152322004544430404UU	PLEASTABBOOKE ET WELLE	THE THE STREET AND AN ARTHUR.	ACTION CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONT	206
cM capacity (veh/h)	915	ndibuset et namen	7	tia chileo vilaggi	451	552	in appendance	Highwa ma		i dahera irak para para	
Direction, Lane #	WB 1 1	NB 2		Programme po	ensiehenske	nich wiede lidereitet	i dallar	antoni pina samun	destinate de		133
Volume Total	146	239	ali on analis		MARKET STREET	1991 11, 404	10000000	orina (Constitution	Marine	des de la company	
Volume Left	0	0		anazarazesakanaka juga	######################################		10 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	era e e e e e e e e e e e e e e e e e e	Basa Maria		JRP
Volume Right	0	166	e a complete de la co	mastron de			or or of the legal			A DE COLUMN PARTIES PER ESTA	
cSH	1700	1700	200 40 40 40 40 40 40 40 40 40 40 40 40 4	00.00.00.00.00.00.00.00.00.00.00.00.00.	X0.1001/0819-084.14/200000000	29/4000000000000000000000000000000000000				\$2.00000 100000 (Principle of Principle of P	805
Volume to Capacity	0.09	0.14	recordia de la como		(MARKET	Propagation				те с приносковующения поста В приности на приности	
Queue Length 95th (ft)	0	0		000000000000000000000000000000000000000		**************************************	mir va 11.4 von var v # 0 x 100 vol va	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			n-m
Control Delay (s)	0.0	0.0	ang Salahan Managan	U Mangarije	Marin engan	l democracy	ta izvijaje		rendana.	COLUMN TO SECURITION OF THE SE	i
Lane LOS					•						
Approach Delay (s)	0.0		Hillyna College Hillyna College			Forder out to 24 days	d and the o		antang.	renavalanski storije i salas. Historija	
Approach LOS											
Intersection Summary	an a Manag	BREED STORY	aggerate d	эплику натрисова	in the same are	· **					
Average Delay	in American Constitution		0.0			a se se como de la como	ome Germannika Herijiya ili	ninida siisnessa s	e volesc <sub>ije</sub> in in		
ritorago Dolay	CYTESTED STRUCTURES THE EX	WELLEY CONTROL	7 00/	16				engalaraka, eskara erke			202

ICU Level of Service

17.6%

15

Intersection Capacity Utilization

	•		*	1	4	•	4	<b>†</b>	1	-	<b>↓</b>	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	<u></u> ની	# (A) 기	7	<u>↑</u>	77		<b>↑</b> Դ		<u> </u>	<b>ተ</b> ኑ	7
Ideal Flow (vphpl)	1900	્ર 1900	1900  -	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	1200	12	11	12	1000	10	10
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	Sacrata Ministra	0 50	т.О	50	50	50
Trailing Detector (ft)	0	0	0	0.	0	0		- 0	DYNAMORA	0	0.	0
Turning Speed (mph)	15	, <b>V</b>	9	15	U.	9	15		9	15	a da	9
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor	0,55	0.30	0.85			anun II.OO		0.98	ANIARUS ARRAMEN	1,00		··· (0.0 )
Fit		resistant de la company	0.850			0.850	1016707	0.971	Sanulai 1604.	ananana	ara marasa	0.850
Fit Protected	0.950	0.978	0.000	0.950				0.07.		0.950		answare to the
Satd. Flow (prot)	1641	1690	1615	1805	1837	1599	0	3277	0	1668	3196	1372
Fit Permitted	0.950	0.978	1010	0.570	1001	1000	, U	<i>3211</i>		0.107	O I OO	1012
Satd. Flow (perm)	1641	1690	1372	1083	1837	1599	0	3277	0	188	3196	1372
Right Turn on Red			Yes			Yes	impan Ye	<b>94</b> ///	Yes	100	0100	No
Satd. Flow (RTOR)	eri Asali Vilas Califia		16	garana arang		63	and the second	20	103		i akomonina i	
Headway Factor	1.04	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.09	1.09
Link Speed (mph)	1.04	30	1.00	1.00	30	1.00	1.00	30	1.00	erate e la constant	30	1.00
Link Distance (ft)		309		an and Albander	183			111	and the second	, redución de locales de	268	
Travel Time (s)	recuting a comm	7.0		and the same	4.2			2.5	and the second	Outside Value	6.1	
Volume (vph)	320	7.0 141	6	155	168	627	0	655	117	257	958	333
Confl. Peds. (#/hr)	ozo Junialiski	171	88	100	100				33	33		
Peak Hour Factor	0.77	0.87	0.38	0.89	0.90	0.70	0.84	0.91	0.69	0.90	0.79	0.69
Heavy Vehicles (%)	1%	1%	0%	0.00	0.00	1%	0.04	2%	1%	1%	1%	0%
Adj. Flow (vph)	416	162	16	174	187	896	0	720	170	286	1213	483
Lane Group Flow (vph)		297	16	174	187	896	0	890	0	286	1213	483
Turn Type	Split		Perm	Perm	a constitue	pt+ov				D.P+P	tero etar ministe provin	ustom
Protected Phases	2	2		1 01111	5	56	0.1111111111111111111111111111111111111	1	um de la compa	6	16	6
Permitted Phases	NA KRIADAWATA	i i i i i i i i i i i i i i i i i i i	2	5	J	18.787	234411715775			1	. a.T.	1
Detector Phases	2	2	2	5	5	56	Marin Carlo	and the state of t		6	16	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		ia kaominina de di	8.0		8.0	e e e e e e e e e e e e e e e e e e e	8.0
Minimum Split (s)	32.0	32.0	32.0	25.0	25.0	- 1846-11-14		25.0		25.0	an in himselfe	25.0
Total Split (s)	38.0	38.0	38.0	25.0	25.0	60.0	0.0	52.0	0.0	35.0	87.0	35.0
Total Split (%)		25.3%					0.0%			23.3%		
Maximum Green (s)	34.0	34.0	34.0	21.0	21.0		interestration for transfer	48.0	Allowski Tradus	31.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	and an extended to	(Percental III)	3.0	A service the servi	3.0		3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1,000 participat (1.06)	1.0	RAMANI NEVADENI	1.0		1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		naviori (*	Lead		Lag	10.14	Lag
Lead-Lag Optimize?	3			energia de la composition della composition dell		free course from the	ALLY ST. III.	SELECTED SHE		recentalists was	HIGH STATE OF STATE O	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	national and a second	a trabana	3.0	i de la	3.0		3.0
Recall Mode	Max	Max	Max	Max	Max	PER SERVICE SERVICES	(	C-Max	er the sile 4 let	Max		Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	Masarda d		7.0		7.0	40.00	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	14.0	14.0	NED Epocher Telefolder	HIPOGRAPHANI NE DENI	14.0		14.0	HARFELLANDTY (T.	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		angetones a	0		0	ominan <del>a</del>	0
Act Effct Green (s)	34.0	34.0	34.0	21.0	21.0	56.0		48.0	vice and place of FRED	79.0	83.0	83.0
Actuated g/C Ratio	0.23	0.23	0.23	0.14	0.14	0.37	iliya (140 ESS)	0.32		0.53	0.55	0.55
v/c Ratio	0.76	0.78	0.05	1.14	0.73	1.41	entral atta calvi	0.84	ervinouirosourdibl	0.71	0.69	0.64
Control Delay	68.2	69.3	18.2	172.2	78.7	226.9		54.6		44.1	26.7	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	erossaus au Martilla	0.6	1.000.002 511.000 000 000 000 000 000 000 000 000 0	0.0	0.1	0.0

Lanes, Volumes, Timings HSH Associates 6/17/2008 Synchro 6 Report

			*	₩.	•	***	7	ı		*	¥	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	ISBL	SBT	SBR
Total Delay	68.2	69.3	18.2	172.2	78.7	226.9	acograma ale	55.2		44.1	26.7	27.9
LOS	E	E	В	F	E	F	~~ <b>V</b> * ( * / * / * / * / * / * / * / * / * /	E	CO. 686 A SERVICE AND AND A SERVICE AND A SE	D	С	С
Approach Delay	n en	67.4			197.3			55.2			29.5	1111/164
Approach LOS	CONTRACTOR OF COLUMN	E			F			Ε			С	
Queue Length 50th (ft)	272	289	0.	~199	178	~1138		418		195	454	347
Queue Length 95th (ft)	320	392	2	#351	#281	#932		506		305	435	317
Internal Link Dist (ft)	e desurción La constant	229			103	Lucial Particologi	da alami.	31	ologijanskih		188	occinion <u>u</u>
Turn Bay Length (ft)												
Base Capacity (vph)	372	383	323	152	257	636		1062		405	1768	759
Starvation Cap Reductn	0	0	0	0	0	0		29		0	0	0
Spillback Cap Reductn	0	0	2	.0	0	0	agente of R	0		0	48	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.76	0.78	0.05	1.14	0.73	1.41		0.86		0.71	0.71	0.64
Intersection Summary	akusu <b>an P</b> an	s <b>ayan</b> asasan			6630430400	North Teach					计可伸展	50 <b>00</b> (F)

Area Type:

Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 83.8

Intersection Capacity Utilization 94.4%

Intersection LOS: F

ICU Level of Service F

Analysis Period (min) 15

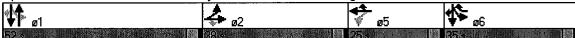
Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street





Lane Group	· NBL	NBT	NBR	- SBL		SBR2	lanasuse oteo	4.2089/FACION	SE-305 3009 505 11	Bernalder Bernalder	
Lane Configurations	ħ	ß		ħ	78						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	ni rasultas primi juriju po		hiji dahi dal		
Lane Width (ft)	10	13	13	12	12	12					
Storage Length (ft)	0	Hobertoff	0	25	0						
Storage Lanes	1		0	1	2						A
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		BACHA COUNT			
Leading Detector (ft)	50	50	00.000.000.000.255182.75-	50	50			XX,000,000,000,000,000,000,000,000,000,		\$411389*\$640.407.810.412230000#689F001641104916#8TV3	Mary Capagoons
Trailing Detector (ft)	0	0		0	4444	e katalanin pag		and depotation	FARISTI FÜR TERMINI		
Turning Speed (mph)	15	78°-0400 (2003 ( <u>* 1</u> 08 <u>-2</u> 000)	9	15	9	9	en dre varrent to catter reen cols	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	5285777 (PSI 411852/201886 PRES		e-Contract
Lane Util. Factor	1.00	1.00	1.00	1.00	0.88	1.00	on a subject for which	and alcalibility	o wan al		de dia
Ped Bike Factor	INDESTRUCTION OF THE PROPERTY	0.97							(4P40.000003.7800.0000		SHERFA
Frt	Artora zami	0.992	area art		0.850				North Property		
Flt Protected	0.950		NA EMILIERA MENERALISMO	0.950	47 ( 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				VAR-VER-INNER ET INNER IN		Section 4
Satd. Flow (prot)	1532	1761	0	1805	2671	0	nelislik <b>a t</b> atastikansia		en herbereit	iga yang palatatan	
Flt Permitted	0.950		7.787000 <b>2</b> 00	0.226			on and surprise to the surpris	**************************************	MOTOR CONTRACTOR	ana Peganganagan Naganan	18.89.8019
Satd. Flow (perm)	1532	1761	0.	429	2671	0					N LAC
Right Turn on Red	FATERIA VIII LEEN EN	HII / JENE 12 12 17 17 17 17 17 17 17 17 17 17 17 17 17	Yes	NEFAMORINADI RODA	arakan martaka ja	Yes	in konggeniken kayong k				Kirana i
Satd. Flow (RTOR)	distinction of	7			4 22	Meddle sove				in the little desired to	
Headway Factor	1.09	0.96	0.96	1.00	1.00	1.00		. Taran in a management			K88308
Link Speed (mph)	N. A. Land Co.	30	antoni ea taña kini	diffeoration (Section	antaran kanan kana	nan süda metedik	aria and a control of the			menedan sahuar	
Link Distance (ft)		347	i servinue.	Caral (Project		and the second second	gartigation (principle)		(IIII) (1-00 (12-2 <b>0</b> /		EASTERN .
Travel Time (s)	460	7.9	26	<b>E</b> 0	10E2	12					
Volume (vph)	460	745	36 164	52 164	1052	12 64	U145				£000
Confl. Peds. (#/hr) Peak Hour Factor	0 0E	0.01	0.80	0.88	0.91	0.58			CONTRACTOR (C. 1971)		E NO.
	0.85 10%	0.91 8%	0.80	0.00	6%	29%	1900 - 11 To		or and the second	P 11 11 11 11 11 11 11 11 11 11 11 11 11	Kulini.
Heavy Vehicles (%)	541	819	45	59	1156	29% 21	Mission William Sc		Memerya.		M. W.
Adj. Flow (vph)		864	45 0	59 59	1177	Z 1 0		55.00		on and the subsection	
Lane Group Flow (vph) Turn Type	Prot	004	U	D.Pmc	72H215E5P7P6E6A7			muliace orange		Accelerate de la constitución de l La constitución de la constitución	M W
Protected Phases	F10t	1	and the	D.FIIIC	,ustom 1		godi (1902) arangan kalan	te dinakan	eu are produced		
Permitted Phases		I		1				Al-Action of the	Spania da la compania de la compania	Augustania paga	Maga.
Detector Phases		1	Section in	ngered			anakana (s <b>a</b> ara)	tani Vi su jihari a Milak	leg finis tall salt	(0)05 <del>4</del> 5335559655	THE S
Minimum Initial (s)	8.0	8.0	f.ll	8.0	8.0						listed
Minimum Split (s)	26.0	25.0	Maria de Maria	25.0	25.0	(Maria property	a sampeonage o	lindra a constant	arahir manusi	iawatan kabapatan	
Total Split (s)	26.0	74.0	0.0	74.0	74.0	0.0					
Total Split (%)		74.0%				0.0%	4000004.7468	- Garago and Car	tiest seedlik	toktija sagrada	FW
Maximum Green (s)	21.0	69.0		69.0	69.0		777.02.3	2011			FOR FOR
Yellow Time (s)	3.0	3.0	ational ways	3.0	3.0	derida de la composição		Leonard San	The Spirit Prints	tegisettemmississis	A) (4)
All-Red Time (s)	2.0	2.0		2.0	2.0			28.8			Brodensi
Lead/Lag	e inflatinch	CHERT LOS CONTRACTOR						e e al antidat o			
Lead-Lag Optimize?	i (1955) (1955) (1965) (1965)	CARDO E DE LA CARDADA DA PER DA P	8 (A 11 A C T 18 C 19 C 19 C 17 C 17 C	A SERVERAL MODELLES	MR49-021-07-08-1743	enancerarananyua	A CRISHCASS ASSERTS ASSESS	PARTY TO POURTAKE THE ROLL	3808.503182943948702	2000 COSC 2000 COSC 200 COSC 2	J. 15 (2000)
Vehicle Extension (s)	2.0	2.0	3,000	2.0	2.0		a representativamento de la compansión de La compansión de la compa	ri la Mayalla (5)			řími Guara
Recall Mode	None (		ACSBRENES (PAGE AND AL	C-Max	C-Max	SALTH: SAMMONTEEN NOTES	pesseritat dalmi belia be i dali otta b	rapopopogocolas palatri (produs)	Kationamentrial Monterfactor	SECONOMIA. De Part republicar representation	200000
Walk Time (s)	7.0	7.0	a Michigal	7.0	7.0	ram Ey et	The reserved	al estapolitica de		A MERCHANISM CONTRACTOR	1907
Flash Dont Walk (s)	9.0	8.0		8.0	8.0	**************************************	gramment (g. 1000 ga + 1, g	SAME OF THE PROPERTY OF THE PROPERTY OF THE	reng sama apodilija je galija 1928	eur manuschister von die erweiter (des 1900 in deutsche 1995). The contract of	-120018
Pedestrian Calls (#/hr)	0-	E0	growth.	0.	0	Fred Charles					
Act Effct Green (s)	22.0	70.0		70.0	70.0					The second secon	
Actuated g/C Ratio	0.22	0.70		0.70	0.70	or graenous and	etti talangangan	adillos Aberlo	undia ka istika		
v/c Ratio	1.61	0.70		0.20	0.63						



Lane Group	NBL	NBT	NBR SBL	SBR	SBR2
Control Delay	311.1	13.7	7.1	9.9	908/00 (March 24)
Queue Delay	4.3	2.1	0.0	147.7	
Total Delay	315.4	15.8	7.1	157.6	
LOS	F	В	Α	F	
Approach Delay		131.2		nenter fallen im	ichilianer
Approach LOS		F			
Queue Length 50th (ft)	~512	205	arcan an <del>ce</del> (11	198	
Queue Length 95th (ft)	#670	356	27	263	nguna berendéska morum va Kossa
Internal Link Dist (ft)	en de la company	267		paral de com	
Turn Bay Length (ft)	MARIE	Decretation of the State of the	25	SECTION BY SECTION OF THE SECTION OF	00.000 00.0000 00.000 00.000 00.000
Base Capacity (vph)	337	1235	300	1871	
Starvation Cap Reductn	0	229	0	188	reach forcessesses early to safe in a m
Spillback Cap Reductn	2		0	982	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	1.61	0.86	0.20	1.32	

## Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 85 (85%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.61

Intersection Signal Delay: 140.2

Intersection Capacity Utilization 69.4%

Intersection LOS: F
ICU Level of Service C

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 332: Valenti Way & North Washington Street



The Merano

Timing Plan: PM Peak Hour



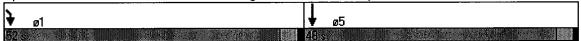
	NBL NBT	SBIT	SBR	SEL	SER	45340658853	an a		en visit 1981
Lane Group   Lane Configurations	MADE MATE	**************************************	ODIA III	ULL	777	sk Strevillishing	<u>                                     </u>	3 5 5 1 C HILL	
	1900 1900		1900	1900	1900				unitari e territoria
Ideal Flow (vphpl) Total Lost Time (s)	4.0 4.0	CANTERPORTED BETTER TO THE STATE OF THE STAT	4.0	4.0	4.0				Sections and and and
Leading Detector (ft)		4.0 50	7.0	7.0	50	ON CONTRACTOR TO STATE		NUMBER (1995 - 1954)	
Trailing Detector (ft)		0		Angustu ukstruksi	0		400		
Turning Speed (mph)	15	personal de la company de	9	15	9	* \$1. III. III. III. III. III. III. III.			
Lane Util. Factor	1.00 1.00	0.91	1.00	1.00	0.76				CONTRACTOR AND
Enternance and the second					0.850		nene en Rene en en en 1724 i Legis	haloveno (Carto)	Sales ababah
Flt Protected	**:145.00 (0.00)	PROBLEM CONTRACTOR AND A STATE OF THE STATE						SECTION FOR PARAMETER TRANSPORT	NAME OF THE PARTY
Satd. Flow (prot)	00	4893	0	0	3409	and the second state	alaker penger		unal Time
FIt Permitted	(C) (2007 SAR (SARA DA CO SA CHEROS SA 200 M S	298.9V2323489.394.94MV.UI	*BOTH-0170:07-\$4(2000000		SQUELLIALION PRIPARATIVOS II IFI		2012 X X X 2013 2014 Per February A (1741)		Causes Manage Base (All Stein Bridge Bridge)
Satd. Flow (perm)	0	4893	0	. 0	3409	n saint in Mandard de la company			
Right Turn on Red	SET DRIVES CULTURY SOME AND STREET BESTER IN	82 5 5 7 444 6	Yes		Yes				
Satd. Flow (RTOR)			an Markataline	ante e l'Ast	. 71			Charles and the Control of	
Headway Factor	1.00 1.00		1.00	1.00	1.00			maga meranganan ayan ka	
Link Speed (mph)	30	\$3.50 \$4.40 \$1.00 \$100 \$100 \$100 \$100 \$100 \$100 \$1		30		Herein a Sud		AAAAAAAAAA	
Link Distance (ft)	397		a Februaries Season (Income	170	aru maretinistica		nuncur hada dan Koda kitupa kitar kitar	nancioliste de la composición de la co	BOLOSHICIO PAREMETER
Travel Time (s)	9.0			3.9	405		LARAN DEPART		
Volume (vph)	0 0		0	0	485	a sa	esiamanyaassi	DESCRIPTION OF THE SECOND	ACTION OF THE PERSON
Peak Hour Factor	0.92 0.92		0.92 0%	0.92 0%	0.91 8%		ole Control	varija i 1724. U Sec	F 4479 748 LV 17
Heavy Vehicles (%)	0% 0% 0 0		0%	0 %	533	BUASIA PROPERTY CONTRACTOR	Salas Lapital daylin	AT LIST THE PARTY OF THE PARTY	Control College
Adj. Flow (vph) Lane Group Flow (vph)	0 0	77 transcript 244 25 Year Co.	0	0	533			i a establication of the second	
Turn Type		1100		N. N. 100 1 100 1 100 100 100 100 100 100 10	custom				ACTION OF THE PARTY OF THE PART
Protected Phases		5			1	AND AND SHARE		Services Street	MATHER LINE LINE RESPONSE
Permitted Phases				and the later	generalis Autom		(III) PARTE PER PER PER PER PER PER PER PER PER PE		
Detector Phases		5	DELINA STALLAGE TITL DATES	***************************************	1		\$ 00,000 about the sound of the last About 19 (19 About 19 (19 About 19 About 19 (19 About 19		00.000
Minimum Initial (s)		8.0			8.0			austron Schiller (1911)	9 11 11 12 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15
Minimum Split (s)		20.0			20.0			LANGUAGO PARES O AN ANTONOMÍNIA Á A FARES	
Total Split (s)	0.0 0.0		0.0	0.0	52.0	entil Marie Van Stand Herrestein (1994)			energy and the second
Total Split (%)	0.0% 0.0%		0.0%	0.0%	52.0%	pacama pre reminati antimi		an a	#2431#C28141#3223#335
Maximum Green (s)		44.0			48.0	ATTEMPT OF THE PERSON.	podemirodit. Al		
Yellow Time (s)	en e	3.0	and the responding	BANDATKATTA ARABI	3.0 1.0	Communication Contraction	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
All-Red Time (s)	THE STATE OF THE PARTY OF THE P	1.0		telikur (45	1.0	and material 2015		April 1984	
Lead/Lag Lead-Lag Optimize?		generally	A. J. HAR	latti innila men			i i i i i i i i i i i i i i i i i i i		anciera A del receivabil
Vehicle Extension (s)	PARTITION OF A CARPOR OF	2.0	6656%		2.0		LABORIE CONTROL OF THE STATE OF	and the second second	PETRUTAL TRANSPORT FOR THE STATE OF THE STAT
Recall Mode		Ped	and the	and the state of	C-Max				and Annual Control of the Control of
Walk Time (s)		7.0		BLOGH WINNES	and the second				
Flash Dont Walk (s)		1.0	e de la companya de	ann all	en i i i i i i i i i i i i i i i i i i i				
Pedestrian Calls (#/hr)		0	7869-2-1	139 (SEE SEE SEE SEE SEE SEE	HILIPPINE 25 0 14 L5	\$2,405~4049 nnus		CONTRACTOR	Soldsten, SEP in the Villabor 1977 (C. No. 17 No. C.)
Act Effct Green (s)		28.1	unior La Carl Gall	catalilati	63.9				
Actuated g/C Ratio	200 2 2 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	0.28			0.64				
v/c Ratio		0.84			0.24				
Control Delay	5, em e 2000, a 2000 Un parametro a 4 da - 4 7 h	53.6	FE 1000 AND MARKET - 41	EROSAN PANTAZPISAS SPATA	2.8	STASK ANALYSINUU UUUN SARVASI	No. of Contract Contr	en san ere per per Mark Mark Mark	
Queue Delay		1.1			0.4				
Total Delay	ig piloksii ( sie jir jinkur waanabina iki	54.7	SE SONE FARMANCE	7010007452 FISTORIES	3.2	omenicalisad Databas			1478C1148C188C195
LOS					Α				
Approach Delay		54.7							

The Merano Timing Plan: PM Peak Hour

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Lane Group	NBL NBT	SBT SBR	SEL SER		
Approach LOS		D. Lander			
Queue Length 50th (ft)	******	294	18	SAME STATE AND A LESS LIBERTIAN A LIBERT AND DESCRIPTION OF THE TOP OF THE TO	
Queue Length 95th (ft)		341	22		
Internal Link Dist (ft)	317	193	90		
Turn Bay Length (ft)		AN AND AND ASSESSMENT	A LA COMMISSION OF THE	<b>19</b> (15) (15) (15) (15) (15) (15) (15) (15)	114
Base Capacity (vph)		2153	2205		edio/Were
Starvation Cap Reductn		702	1153		
Spillback Cap Reductn		294	617		98100
Storage Cap Reductn	<sub>erre</sub> ural per meril	0	0		
Reduced v/c Ratio		0.80	0.51		
Intersection Summary					440
Area Type: O	ther				
Cycle Length: 100					
Actuated Cycle Length: 1					
Offset: 4 (4%), Reference	ed to phase 1:S	ER, Start of Gr	een de la		
Natural Cycle: 40					Oceaninger
Control Type: Actuated-C		produced Petrice Sections			
Maximum v/c Ratio: 0.84	CONTRACTOR OF THE PROPERTY OF				Acersanurità
Intersection Signal Delay		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	tersection LOS: D		100
Intersection Capacity Util	ization 38.3%	IC	U Level of Service	е А	88819.C2

Splits and Phases: 4120: North Washington Street & Beverly Street



	*	4	*1	<b>†</b>	<i>&gt;</i>	<b>/</b>	<b>+</b>	لړ	•	<i>&gt;</i>	
Lane Group	WBL	WBR	NBL	NBT.,	NBR	SBL	SBT	SBR	NEL	NER	Consists a single 201
Lane Configurations		7		<b>个个</b>					ايراير	/#JIFFXXVVXIII IF:	LUTER KW. LENGTH TOWNS STORY FROM HER VS.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	redigitad dieu kan die er Dieu de dieuw
Lane Width (ft)	12 4.0	14 4.0	12 4.0	12 4.0	12 4.0	12 4.0	12 4.0	12 4.0	12 4.0	12 4.0	
Total Lost Time (s) Leading Detector (ft)	4.5.44	4.0 50	4.0	50	4.0	4.0	4.0	ia., 4.0	50		
Trailing Detector (ft)		. 0		0		a bag an uni			. 0		
Turning Speed (mph)	15	9	15	BACK-BALGAT REFTAUREN	9	15		9	15	9	COLOR TO CONTACT BUT SET THE
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	ede un artikula di kalendari di kalendari Have i terapakan di kalendari di kalendari
Frt	PROGRESSION OF THE PROGRESSION OF T	0.865		S S S S S S S S S S S S S S S S S S S	Source Park California (park	epicologia (periodise)	SA SINDA NASARAN IN	224450000000000000000000000000000000000	0 050		
Fit Protected		1752	0	3574	0	0	0		0.950 3400		
Satd. Flow (prot) Flt Permitted	0	1753		30/4	U	U	U	0	0.950	0 -////////////////////////////////////	AMBICIANA III
Satd. Flow (perm)	0	1753	0	3574	0	0	0	0	3400	0	BARLAGA BARADARAK MINUST
Right Turn on Red		Yes	en Line	arata ye Mil	No			No	No		ng Celle Wastuker
Satd. Flow (RTOR)	THE STABLES OF SUCCESS	126			1.8 80 min 21000000 March 14.0200		00/2-0% older0000000 0/0000%				XXIII (100 )
Headway Factor	1.00	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	118 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Link Speed (mph)	30			30 570	AT LEAST AT A STATE OF THE		30		30 320		Transless transcriptor
Link Distance (ft) Travel Time (s)	264 6.0		er er folgstelle en e	579 13.2	arte de	a craine	347 7.9		7.3		
Volume (vph)	0.0	55	0	945	0	0	0	0	231	0	
Peak Hour Factor	0.92	0.67	0.92	0.88	0.92	0.92	0.92	0.92	0.69	0.92	7.86
Heavy Vehicles (%)	0%	0%	0%	1%	- 0%	0%	0%	0%	3%	0%	
Adj. Flow (vph)	0	82	0	1074	0	0	0	0	335	0	\$\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Lane Group Flow (vph)	0	82	0	1074	0	0	0	9-40	335	0	
Turn Type Protected Phases	C	ustom 5	and the latest of the latest o	1		regeren		renten eta interestri	Prot 6	69-000HF	. Programme
Permitted Phases		U				inininina.	asa Kiliki		N 1 O		
Detector Phases		5	oppore il		unit				. 6		para makadishiri
Minimum Initial (s)		8.0		8.0		A STORY CONSISTENCY			8.0	LOTTER LOUIS WILLIAM PROPERTY.	TELESTAN OF THE STATE OF THE ST
Minimum Split (s)		13.0	MARIO (1971)	13.0	ugas tellin	an architell			13.0	a countries of	
Total Split (s)	0.0	14.0	0.0	53.0	0.0 0.0%	0.0 0.0%	0.0%	0.0	33.0	0.0 0.0%	are una cumple
Total Split (%) Maximum Green (s)	0.0%	9.0	0.0%	48.0	-U.U.76	0.076	0.076	U.U 76	28.0	U.U /0	
Yellow Time (s)		3.0		3.0	uvana heriini		necytheryth		3.0		
All-Red Time (s)	gogegeste den April	2.0	IDNIS SLOPE VIEW STATES	2.0					2.0	Militar Caudier Section Sections	044 83.183.000 900 953.56 <b>2.363</b> 6866 49 £ 6.400 95 C00
Lead/Lag		Lead			Euge Della		15,000,000	in Children	Lag	mid Walls	
Lead-Lag Optimize?		Yes			e Grandskeite in de			A SAN THE	Yes	racombano de	
Vehicle Extension (s) Recall Mode	mark Policy	2.0 None	a a ser to sel co	2.0 C-Max		n samemen	grandini bil		2.0 None	en en Laineille ann i	LOS ARTINACIONEN DEMAND
Act Effet Green (s)		9.0	s plant il	67.1	agresant e met				14.5		ne for engage (com
Actuated g/C Ratio	manne vitak	0.09		0.67	ALERADO A SPARA SPARA				0.14		
v/c Ratio	entantinonia sand Artikasisaki 1997	0.30	ing the second	0.45				9. S. O. S.	0.68	ining this (%)	weath Managerial
Control Delay	AND THE COURSE OF THE COURSE O	5.5		8.6	4: 0. 0. A. :			SHOW UP LEVEN PROFESSION	47.6	nessaturen kudulukturak	
Queue Delay		0.1	nglocosti	0.3	Specific Hillians	dan dan bandan		erankere I	0.0	Japan Joseph M	enedii Kapaklairi
Total Delay	at included	5.6 A	1011112774111111	8.8 <sub>A</sub>		i de la composition	grandes (CS)		47.6 D	and constitution	
LOS Approach Delay	tra rasa katawa m			8.8			100000000000000000000000000000000000000	Kinika minak	47.6		
Approach LOS	Linner of the	phonone.		ο.ο		Handlati	e ferty i rec			SANGER STRUCT	
Queue Length 50th (ft)	~~xppmxyy#################################	0	NAMES OF THE PROPERTY OF	202				, - energ* agus (Str (Hi)	106	Andrew manageriphology	

The Merano Timing Plan: PM Peak Hour

34: Cooper Street & Sumner Tunnel Off-Ramp

<b>ナベットトレー</b> レクル	*	•	*	<b>†</b>	1	-	<b>↓</b>	لر	•	/
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Lane Group 🐧 🔭 👢	WBL	WBR	NBL NBT N	BR SBL SBT	SBR NEL	NER
Queue Length 95th (ft)	Section 1999	0	m188		107	paganga Pekangan Ne <sup>Paga</sup>
Internal Link Dist (ft)	184		499	267	240	
Turn Bay Length (ft)		omana VPO	Assertation and the second	Andrewspaperson		
Base Capacity (vph)		289	2400		986	intervent salaman Petricular P./Williams N. 1997
Starvation Cap Reductn		0		girjari Magazin (1539) (164)	0	AUTHORITAN STATE OF THE STATE O
Spillback Cap Reductn		21	615		0	
Storage Cap Reductn	a de la companya de La companya de la co	0.44	<u> </u>			STATEMENT OF STATEMENT AND STATEMENT AS
Reduced v/c Ratio		0.31	0.61		0.34	

Intersection Summary

Area Type:

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 43 (43%), Referenced to phase 1:NBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 17.4

Intersection Capacity Utilization 39.5%

Intersection LOS: B
ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 34: Cooper Street & Sumner Tunnel Off-Ramp

↑ <sub>m1</sub>	<b>4.</b> a5	<b>→</b> ø6
	14.80000	E CHAPTER TO THE PARTY OF THE P

				-	4	ı	ı	./			<del></del>
		*	4	- ₹	•	*	<b>*</b>	*			
Lane Group	EBR	THE RESERVE OF THE PARTY OF THE	WBL2	WBL	WBT	SBL	SBT	SBR	/ ø2	ø5	ø64. km ===
Lane Configurations	77	7	n	A	ተተ	ሻሻ	þ	7	erfell (Albeille Spielerreier) A.	55.78:1274038068863	
Ideal Flow (vphpl)	1900	1900	1900	1900	-1900 12	1900 16	1900 12	1900 16		Hillian III. Hillian III. Albania (III.)	Description of the second
Lane Width (ft) Storage Length (ft)	11	11	12	16 25	12	0	12	10 11   10			CALVALA AND AND
Storage Lanes	3			1		2	ONE DATE OF THE OWNER.	1			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			MAZZGONERO BEGGGEN COMPANIAN MAKENDA
Leading Detector (ft)	50	50	50	50	50	50	50	50			MINITED AND UNIVERSAL AND THE SE
Trailing Detector (ft)	0	0	0	0	0	0	0	0.	e Erik ing Kamalanda		14.140mm2.474
Turning Speed (mph)	9	9	15	15	0.05	15	A 05	9			
Lane Util. Factor Frt	0.88 0.850	1.00 0.850	0.95	1.00	0.95	- 0.97	0.95 0.968	0.95 0.850			
Fit Protected	0.000	0.030	getter by 1	0.950	Same Color	0.950	0.300	0.000	at malau le fil		and More
Satd. Flow (prot)	1963	1546	0	2046	3610	3929	1407	1581		Breas van Intervensell	
Flt Permitted		Low Market	u sacratiră	0.950		0.950	and the	<u></u>			
Satd. Flow (perm)	1963	1546	0	2046	3610	3929	1407	1581		ogene yezen dalan westen itali	0.00.29 (1.00.00.00.00.00.00.00.00.00.00.00.00.00
Right Turn on Red		Yes	No	and the second of the second o			galabati i	- No		an restaurablidativa)	gigaran kecahiri
Satd. Flow (RTOR)	1.04	34 1.04	1.00	0.85	1.00	0.85	1.00	0.85	EN VOLVES COMM		wedaning aware
Headway Factor Link Speed (mph)	1.04	1.04	1.00	U.00	30	ບ.6ວ	30	บ.ออ		S. Santo	
Link Distance (ft)		in an in the	Maria de la composición	ξ.	125		397			and the second of the	
Travel Time (s)		Marata da		6275 (cont.) of 2245 (i	2.8	HUNDAY SE SE TATE	9.0	and the second	ekningen akterionning kately	<b>1</b> 01993856515564445554144	E 2018 10 20 PRES CALABARTESE
Volume (vph)	1157	42	23		293	1001	204	332			andania (1
Peak Hour Factor	0.75	0.95	0.68	0.34	0.83	0.88	0.92	0.88	valendari kurintari kanada kanada	TESS SESSIVE STATE OF THE PERSON	
Heavy Vehicles (%)	40%	1%	0%	. 0%	0%	1%	28%	10%	accompany of the		
Adj. Flow (vph)	1543 ) 1543	44 44	34 0	9 43	353 353	1138 1138	222 282	377 317		10.7233.4	202115-005507
Lane Group Flow (vph Turn Type	custom (	1,650,450,650,45900005a,934	Perm	Perm	- ೨೮೨	Split	202	Prot			A CONTRACTO
Protected Phases	- Cu3(U) 1	1	ggreen sing sing sing sing sing sing sing sin		1	5 6	5 6	5 6	- Maria 2	5	6
Permitted Phases	SC AND RESTREE		1	1	ere arte en esta en du	AD DALBH HEACH STOCK SHIPPER	612 CIDE		HIRTOGRAM SALAMA BARRAS PUR DURA		1500002.** YUU UU MARKA 154.25
Detector Phases	paning (F <mark>1</mark> )	1	10	44114.40	1.	56	5 6	5 6		en Maria de la Compania de la Compa La Compania de la Compania de	ar marini (Art
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	esasses agenciating agency strap. O	nni kalian disembah	TERRESONAL SERVICES	7.0		1.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	24.0	24.0	24.0		PRINTED HANDARD CONTROL	3.0 ka mara 3.0
Total Split (s)	46.0 46.0%	46.0 46.0%	46.0	46.0 46.0%	46.0 46.0%	34.0%	34.0%	34.0%			3.U 3%
Total Split (%) Maximum Green (s)	40.0	40.0	40.0	40.0	40.0	J4.0 /0	34.070	34.070			4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0				3.0		3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	999 9 <b>99 9</b> 99 97 19 19 5 19 19 10 10 10 10 10	1969 B. 942574 (TO FEED & SAFSET)	316 50 000 000 000 000 00 00 00 00 00 00 00	1.0		1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead		entak mana sana Sanak mana		Lag L		ag
Lead-Lag Optimize?			******	NUMBER							es
Vehicle Extension (s)	2.0	2.0 C-Max	2.0 C Max	2.0 C Max	2.0	ENNESDIA BUCAN PURIN			2.0 Ped N	Raker sere politicist, mis. con concentrate life Ed	3.0 /lin
Recall Mode Walk Time (s)	C-IVIAX	C-IVIAX	C-IVIAX	C-IVIAX	C-IVIAX			S. 1111/459	7.0	OHE IV	
Flash Dont Walk (s)				August of Court	ali Asii Dili AV	Tallian Late A Spare 1		est established by AMPR	9.0		Taran Merey (1986)
Pedestrian Calls (#/hr	) (		aliana Patria						50		
Act Effct Green (s)	42.0	42.0		42.0	42.0	30.0	30.0	30.0			NUMBER OF STREET
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.30	0.30	0.30			garayere ill
v/c Ratio	1.87	0.07	enter eranament	0.05	0.23	0.97	0.67	0.67	TATA BAYARILANIA		AHTPLE OF CONTRACTOR
Control Delay	410.6	0.6		17.5	19.2	57.2	43.1	42.5			
Queue Delay	0.0	1.5		0.0	0.0	81.3	2.1	8.0			

	$\rightarrow$	4	•	<b>←</b>	Į,	Ţ	4
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Lane Group 😉 🥞 ী	EBR	EBR2	WBL2 WBL	WBT.	SBL	SBT	SBR	ø2 // ø5 ø6
Total Delay	410.6	2.1	17.5	19.2	138.5	45.2	43.3	
LOS	F	Α	В	В	F	D	D	
Approach Delay		AND ROBERT STATES		19.0		106.0		
Approach LOS				В		F		
Queue Length 50th (ft)	~846	01	16	74	375	183	206	
Queue Length 95th (ft)	m#736	m0	14	96	#485	m228	m252	
Internal Link Dist (ft)		market.		45		317		<b>2011年1月1日 - 1911年1月1日 - 1911年1日 - 1911日</b>
Turn Bay Length (ft)			25					
Base Capacity (vph)	824	669	859	1516	1179	422	474	mada da kana ang Masaladi
Starvation Cap Reductr	1 O	521	0	0	224	0	34	
Spillback Cap Reductn	0		0.	0	. 0	54	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.87	0.30	0.05	0.23	1.19	0.77	0.72	

Intersection Summary
Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 49 (49%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.87

Intersection Signal Delay: 221.8

Intersection Capacity Utilization 85.7%

Intersection LOS: F
ICU Level of Service E

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

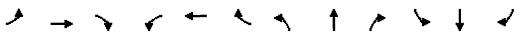
Queue shown is maximum after two cycles.

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

Splits and Phases: 1862: New Chardon Street & North Washington Street

#286#1862	<b>Åå</b> ø2	#21 #1862 <b>4</b> ø5	#21
46's 10'412 1932 1753 1753 1753	20 same and the second	268	

	•	<b>→</b>	7	<b>*</b>	4—	A.	•	†	<i>&gt;</i>	1	<b>↓</b>	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	'NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ħ	ተተተ			<b>∱</b> ∱		ሻ	<b>f</b> }			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	milias Ta Sisantis Padill	ALIONIUM PA	50		50	50	partiente heb	50	50	pletable we
Trailing Detector (ft)	0	0			0		0	0	an a series the experience	0	0	nti wanstonia namana a
Turning Speed (mph)	15		, je 9 °	15	i de la composition br>La composition de la	9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fit				1000	0.999		Charles Manual	0.850	an jaya	umal 🔻	0.897	wan biri
Flt Protected	0.950					ner er rege i sprekket om er der sog	0.950	Management Not 100 (12) 201 70.00	concessor on two data-raids of the		0.988	
Satd. Flow (prot)	1787	5136	0	0	3571	0	1805	1615	0	0	1667	0
Flt Permitted	0.383	P20084-100-000-100-000-00		AND STREET, AND STREET	r sanc accompany tribution plan (see		0.746	n 1901, July 100 der del Klass var en mansibu	alliani MORI HERBERGA PAREN	KONSAS AND AND SAND	0.964	HTTF.COMMING.CO.
Satd. Flow (perm)	720	5136	0	0	3571		1417	1615	.0	0	1627	. 0
Right Turn on Red		waste and the land the same	Yes	·	apera o la malación como	Yes	ro testalado de edelación de la		Yes	NAMES OF THE PARTY	LUGGEOPHYCHOLOGY >x	Yes
Satd. Flow (RTOR)	usu matausan P	inco Santa de la composición			1		gada Amar	206			13	nnacil###
Headway 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
Link Speed (mph)		30		. 2007 004	30			30	garana a		30	
Link Distance (ft)		204	ateric occusion docamentos	ON MAGNITUM THE E	132	a continue to a contract	>1.65002000 40000020000	531	uurastemaan ka eroon ii	Cotobe post towar	148	
Travel Time (s)		4.6	e perquirell		3.0			12.1	ngala da Di	anaga din P	3.4	
Volume (vph)	14	705	0	0	502	3	79	0	12	4	0	12
Peak Hour Factor	0.92	0.78	0.92	0.92	0.76	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	1%
Adj. Flow (vph)	15	904	0	0	661	0/4 m 3	86	0	13	4	0.	13
Lane Group Flow (vph)	and the same and the same of the same before the best of the same	904	0	0	664	0	_ 86	13	0	_ 0	17	O UNIO A CAMPAGNICADO
Turn Type	Perm			granting and a		an di di	Perm	_		Perm		atee (the DEATE
Protected Phases	CONTRACTOR AND AND ADDRESS OF THE AD	1	0411340110100004454.22	55 / S24************************************	1	constraint and const	_	5	o surprise de la compa	LAGRIMANTE DA ANTE ENTRE LA TRA	5	CONTRACTOR
Permitted Phases					4	<sub>addi</sub> (Aldin	5			5		
Detector Phases	1	1		# 3054 P PE 2 (15.26)	1		5	5	i de la constitución	5	5	V.Carrier A.
Minimum Initial (s)	8.0	8.0	haranen		8.0	a. Listanus (D)	8.0	8.0	Post,	8.0	8.0	della Ta
Minimum Split (s)	23.0	23.0			23.0	0.0	18.0	18.0		18.0	18.0	0.0
Total Split (s)	75.0	75.0	0.0	0.0	75.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	75.0%		0.0%	0.0%		0.0%	25.0%		U.U% .	25.0%	25.0%	0.0%
Maximum Green (s)	70.0	70.0	440000	April 12 5 M	70.0		20.0	20.0		20.0 3.0	3.0	n pertia
Yellow Time (s)	3.0	3.0			3.0	4.00	3.0	3.0				110707-1108
All-Red Time (s)	2.0	2.0		inalia (PP)	2.0		2.0	2.0	ng at the second of	2.0	2.0	r page 1
Lead/Lag	grantum (1976 (1976)			aneraliere				KANTA YATE SANGAR		and the second		
Lead-Lag Optimize?	2.0	2.0	and the state of t	enan Aleksa	2.0		2.0	2.0	u acore produ	2.0	2.0	POST DATE
Vehicle Extension (s) Recall Mode	C-Max (		157575.274	BUNGER WERE	C-Max		None	None	napowali (1985)	None	None	
Walk Time (s)	10.0	10.0	200,000	Cestina di Primerina	10.0		12.0	12.0		12.0	12.0	Arabids (HS)
Flash Dont Walk (s)	8.0	8.0			8.0		12.0	1.0		1.0	1.0	ALEMENT .
Pedestrian Calls (#/hr)	0.0	0.0			0.0		0	0	alediae	0	0	
Act Effet Green (s)	83.9	83.9		A Land	83.9	CHARGE TO SA	11.5	11.5			11.5	j <sub>a</sub> gunteki)
Actuated g/C Ratio	0.84	0.84		TARES	0.84		0.12	0.12	MATERIA SELECTION		0.12	1977
v/c Ratio	0.04	0.21	ELTHER		0.22	acuraman	0.52	0.12		ORISTY HE	0.09	yan mata
Control Delay	1.5	1.3	eras, parentalis		2.5		56.3	0.04		CONTRACTOR	22.1	5 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1
Queue Delay	0.0	0.0			0.0	and the	0.0	0.0	naudjinist day.	neagh (A)	0.0	174
Total Delay	1.5	1.3		yu kine di seneran	2.5		56.3	0.2			22.1	
LOS	1.0 A	Ι.Ο	anyaya	under in	O		- 00.0 E	Ā	and Street		C	ygellhar dest deutste in Meistage Espekiste in
Approach Delay	soa (eferrationalis)	1.3	papariya didilik	mings a state of the state of	2.5			48.9	ranciis 1,05 1,979,975,2975	encomposition (* T	22.1	enning profesil and i
, approach boldy												



Lane Group	EBL	EBT	EBR WBL WBT	WBR LNBL	NBT 1	NBR SBL	SBT SBR
Approach LOS	r ogwerge met	Α	A		D	or a Vigita de la composição de la composi La composição de la compo	THE CHARLES
Queue Length 50th (ft)	1	20	38	0	0	an to a speciment change on the control of the cont	2
Queue Length 95th (ft)	-m3	25	<b>1</b> 440.00 (1.141.14.14.56	102	90 (49 <b>1</b> (4)	augustia magaar	22
Internal Link Dist (ft)		124	52		451		68
Turn Bay Length (ft)					THE PROPERTY	enon tid tid seni	
Base Capacity (vph)	604	4307	2995	298	502		352
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
Reduced v/c Ratio	0.02	0.21	0.22	0.29	0.03		0.05

Intersection Summary

Area Type:

Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 4.7

Intersection LOS: A

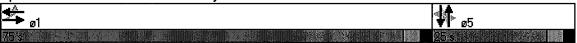
Intersection Capacity Utilization 31.7%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 506: Causeway Street & Haverhill Street



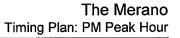
The Merano

Timing Plan: PM Peak Hour

	<b>→</b>	-	•	1	<b>←</b>	*	1	<b>†</b>	1	<b>/</b>	ļ	1
Lane Group	EBL	EBT	EBR	-WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ሻ	414					Chicago I	<b>↑</b> ↑	IIII CSIMIDUU AAAA
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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)	Balei Balei (1907)	salahirin	ilik dega Kil	50	50	William Addition	celessalidates Ha	PHOTOGRAPH A		ant anne	50	
Trailing Detector (ft)	ferio su moderationer tearch	VALUBARSK SE ERVER	2082CC_570029CGC	0	0		rindes allen yesteme est t	CE CHOSES MINIOT IN ELLIPSING	75.04444.0404.040	Librat vide tiendeto S	0	11774188918604
Turning Speed (mph)	15	n and iiin i	9	15.		9	15	eri ar de de c	9	15	toriani di	9
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Fritz		agrania (1977)		uru jurini	ann Palle	al Roberton				ar (Frans)	0.959	
Fit Protected				0.950	0.977							
Satd. Flow (prot)	heran (a <b>0</b>	0	0	1643	3378	0	0	0	0	0	3462	0
Flt Permitted				0.950	0.977							
Satd. Flow (perm)	0	, 0	0	1643	3378	0	0	0	0.4	0.	3462	0
Right Turn on Red			Yes	Yes		Yes			Yes	A 1 \$ \$100000000000000000000000000000000		Yes
Satd. Flow (RTOR)	garane san	ale.umiW	militari in in	169	157	varietiski kilo	lana a	en ingeningen			58	Shirt car
Headway 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
Link Speed (mph)	en menten besti	30	paylet.	ABN BA	30			30	SALES OF THE		30	
Link Distance (ft)		142	MAYARIN KOPLER OKRĀĪNĀ	of statement of select their	213	a2841800248841480		170	eggyapathaya kunigay		521	
Travel Time (s)		3.2			4.8			3.9	e antiti		11.8	
Volume (vph)	0	0	0	300	161	0	0	0	0	0	184	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	326	175	0	0	0	0	0	200	76
Lane Group Flow (vph)	0	0	0+	169	332	0	0	0	0	0	276	0
Turn Type	25174	ar San Arthur San Arthur	uninteriment tra	Split	1					LUIS CONTRACTOR OF THE	E	
Protected Phases Permitted Phases	and the second of the	not have obtained	med Stabi	agsanas Iv	Gerffeiten (1991						5	
Detector Phases	valorinana i selia	General		4	1	unice aktoriotiska	n consignitive existence	artir er sen			5	
Minimum Initial (s)	and the second second	<b>.</b>	source (for 21)	8.0	8.0	CONTRACTO			Palkeding		5.0	ramustani
Minimum Split (s)		in an arms		13.0	13.0	an Physical Pro-			ikan kangan	i i Tironi	20.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0
Total Split (%)	0.0%	0.0%		48.0%		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%
Maximum Green (s)	<b>U.U.</b> 10	0.070	0.070	43.0	43.0		o Madelanda de Cario		, , ,	, ,	31.0	
Yellow Time (s)			-1.5 (100) (100)	3.0	3.0	annament	uscus en	udanika ka	Security (	eperation	3.0	alim i din Mare
All-Red Time (s)				2.0	2.0		Arek Statistical Solid	H Mekeshiri Karalin	r Maradiki indiraki ketri		2.0	
Lead/Lag			Termota i i	Lead	Lead	thinks ten	Tablanes (f	17.10.11	Prisaphit Buha	eg (projekt)		er of the
Lead-Lag Optimize?	erageneer en en een ee		JANN-LENDON SANSAN				NEED WATER IN	AND THE PARTY OF T	one da en la			ASSIMINATORALIA
Vehicle Extension (s)				2.0	2.0	apsini pari	Hipson (G)	Milani ka	inggadang at a	an Harri	2.0	unistratives
Recall Mode	ATT NOTES A CONTRACTOR SALES A TANK OF SERVICE	00 0000 to 00000000 12 dates.	(	C-Max	C-Max		e de la companya de	119- 4600 SK B-109-8-11-1-5	neraetentee richten	to a controversity and a standard and a	Max	Manager of Section 2
Walk Time (s)			GURAT TO THE STREET	a sanaki	organista Organista			ili iliyeti		gayan Pin	dither the	Harris II
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)	A South Live					dada na	i ma 17	antan per	en ingga	a Milani	hattanak	(Barbar)
Act Effct Green (s)				44.0	44.0			W W 61 1-10-10-11 ( ) - 10-10-10-10-10-10-10-10-10-10-10-10-10-1			32.0	
Actuated g/C Ratio		einingstys ein	fig. 1 to 1 t	0.44	0.44			(g., 5., 1111) (g., 12	evenie e e		0.32	414
v/c Ratio	er eti is i setu antre i sessioni se		00000000000000000000000000000000000000	0.21	0.21	e in Sold in Personal recommendation	MEDITERRITATION STATEMENT	CTER-CORPORATION TO LANCE	HISTORIAN (1975-1984)	SOBSIME AND THE PROPERTY OF THE	0.24	HORBERT SHEET HOME IN
Control Delay	n eve trive		eletron i elet	26.3	35.2	e verledersk i krijf. Sokresidi se indae					29.2	**************************************
Queue Delay	taremanang announces	Mirk Taranti Areko, mirkusi	e provinciaciones de co-	5.5	4.0	Danie & Progression		(Anglia ngaggagagan estat			0.0	Tagra k Henghadek kena
Total Delay				31.8	39.1	11749. Jillio I					29.2	er Maria (1917) Paria (1917)
LOS	idanda karenda erre er	S (AIPAGE ESTABLE)	MHURQSAFFAD	С	D	845182013418	1109(0)9308AP1608A	ii Qidii ya aa aa			C	
Approach Delay		en Deugen auch	usidh rahi	i ing	36.6	prekser komiteen	um ensekaten et 1			ngraph (nguyan (ng	29.2	
Approach LOS					D						С	

Lane Group
Lane Configurations
ideal Flow (vphpl)
Total Lost Time (s)
Leading Detector (ft) Trailing Detector (ft)
Turning Speed (mph)
Lane Util. Factor
Frt Fit Protected
Satd. Flow (prot)
Fit 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
Adj. Flow (vph)
Lane Group Flow (vph)
Turn Type Protected Phases 2
Permitted Phases
Detector Phases
Minimum Initial (s) 7.0 Minimum Split (s) 16.0
Total Split (s) 16.0
Total Split (%)
Maximum Green (s) 14.0 Yellow Time (s) 2.0
All-Red Time (s) 0.0
Lead/Lag Lag Lead-Lag Optimize?
Vehicle Extension (s) 2.0
Recall Mode Ped
Walk Time (s) 7.0 Flash Dont Walk (s) 7.0
Pedestrian Calls (#/hr) 50
Act Effct Green (s)
Actuated g/C Ratio v/c Ratio
Control Delay
Queue Delay
Total Delay LOS
Approach Delay Approach LOS
Approach LOS

Timing Plan: PM Peak Hour



•	<b>→</b>	*	•	<b>←</b>	*	4	<b>†</b>	<b>/</b>	-	ļ	1
Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		animiera (d.	86	97				rrecultur. Maria Maria	Day Koya Stoff	60	
Queue Length 95th (ft)			m41	m54	Service and the service of the servi		~~~~~ <del>~~~</del>	DOLEN EN SERBET SALONE I	wormaniezowie krańka	92	Philipping Assertage
Internal Link Dist (ft)	62			133	panerii Pitraeli Ne munit 280 ae 1948	general Ed	90	HEAD OF STREET	nganananan kan Garapatan	441	
Turn Bay Length (ft)	PERIODERA SERVE	and the state of t	econoccosco menos p. 460 HA	a presidente en la constanta de la constanta d	ausauri Megasari an		enerskensen kennavie koke ki	*PROBLEMAN STATES OF SE	90 MATERIAL STATE	en en en en en en en	nia kwani opechica y
Base Capacity (vph)	estantino	este Horiz	20000000000000000000000000000000000000	1574	antillaril	ac.		ero Alunyonen	althium 994	1147	
Starvation Cap Reductn			583	1143	e parene servicione in California.	n644188000000000000000	**************************************		an an ann an Aire ann an	0	SWILLPOOL LAARA
Spillback Cap Reductn			0	0		es policiel del				0	
Storage Cap Reductn			0	0	menti storeza			ALC: STORE LEVEL		0	44,500,000,000
Reduced v/c Ratio		damii (1946)	0.72	0.77	menin <b>4</b> M		ANGELOR CONSTRUCT	der 1 editer	inida.	0.24	
Intersection Summary	ususus productive (included)	niversite	AND SERVICE		area Laboratoria (1882)	analan is <b>Hall</b> H					A PERSONAL PROPERTY.
Area Type: Other		a wasa Nabili			(4.4° 50°)	, jakerub	arati ette		green in		
Cycle Length: 100											
Actuated Cycle Length: 100			er Leggerijske			. 145E9		ontal o			Sy Material
Offset: 22 (22%), Referenced to	phase 1	:WBTI	_, Start	of Green	)						as un cossum non spéch neine.
Natural Cycle: 50		4.4766		1965 - 1110 AN	0.0000						
Control Type: Actuated-Coordina	ted	I LI I NA PARRAGONIA NA NASARANA		.x.xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	CHICA YA CARARDA A AASAA			. *************************************			CONSISSEMBLE CAPE
Maximum v/c Ratio: 0.24	100			rga dri Marejedi		ng Palitin R		Antonio de la Companya de la Company	ladini 202	ggitter (Allen	
Intersection Signal Delay: 34.0		gregoria de la composição		ntersecti			GARLES CONTRACTOR	S. S	THE SHARE STORE STORE STORE	naves bu enempters	
Intersection Capacity Utilization 2	2.8%			CU Leve	l of Ser	vice A	alpinda?			organia (Part	perior in
Analysis Period (min) 15	51400 S 1014 S 2444			0.12.000.000		g gang phaggaid					Naukoli (Seferiana
m Volume for 95th percentile q	ueue is	metere	ed by up	stream	signal.	Officers of the sec		Security (			14. Table 1980

Splits and Phases: 65: Valenti Way & Beverly Street

<b>▼</b> ø1	<b>ÅÅ</b> ø2	<b>▼</b> ø5
	T. American	GE SATION AND AND A SUBSTITUTE OF

Lane Group \$ 100 025 the first than 100 100 100 100 100 100 100 100 100 10
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



	*		•	•	-	₹				
Movement:	WBL	WBR	NBT	NBR	SBL	SBT		Allaches (1949)	ellipses (4 febru	With the Property
Lane Configurations	N/A		ተተ			个个	<del>-</del>			
Sign Control	Stop	VIII ARABANIA	Free		CCARBONALIONA TELEFORM	Free	e anders de	Hetaalisanaa		
Grade	0%		0%			0%				
Volume (veh/h)	5	111.0F0 <b>9</b> 11	□1764 □	niAguaya Ofd	0	1109		M. Medileranen	arth Astron	overskamen.
Peak Hour Factor	0.42	0.75	0.88	0.92	0.92	0.78		coops on the same being both for held about	N W A set date week to consider a fide of	
Hourly flow rate (vph)	12	12	868	0	0	1422		i de de la compania		
Pedestrians	SSECTOR SECTION				TORRESSEE WILLYS AR LICENSE	Minus expresses commen	01000000000000000000000000000000000000		MINISTRA CON UN ANTO NO DE LA	FRANKSI SIDAK SIS MANYAL TURKYAR ALABADI MA
Lane Width (ft)		STAGESTALL.	iliopor				director and a		Mariana a	File (the reader) Asia
Walking Speed (ft/s)		erging general region				s arensamenten actionalisa de la	TOOL BOAR SECTION IN BUT HE STEEL SO TO THE		10000000000000000000000000000000000000	The second secon
Percent Blockage	1			Utalian in the sent	The Park	Hillian and record				
Right turn flare (veh)	<b>.</b>		CONTRACTOR	TS LOCK DE BOOK OF THE BOOK OF	Novalidadi Santa e	act to the contract of the con	16-05-157-158-15-15-15-15-15-15-15-15-15-15-15-15-15-		OSSISTEMBRICA STRUMENTO	ranconstanta de sacrama esta en esta antida.
Median type	None		MARTERIA.	SOME PERSON	Altania.	WATER THE STATE		llerum m	Milita Zubere e	E. C. C. St. St. St. Company
Median storage veh) Upstream signal (ft)			495			444			Sidenti e	Anno Cara San Cara
pX, platoon unblocked	0.73	ina antium and	490			111	Kamilie Lavareki	Acres and the second		
vC, conflicting volume	1579	434		rangani par	868					TOTAL COLUMN SERVICES
vC1, stage 1 conf vol	1019	404		en en en en	000					
vC2, stage 2 conf vol			44414040291111		1440			100000000000000000000000000000000000000		
vCu, unblocked vol	1421	434	ntika tautuuse	Kar proposition in	868	200 - 100 ab. 20040	and the second		i Milangrapi da di Salata	Maria e di Calabarana di C
tC, single (s)	6.8	6.9	an manery	and the second	4.1	184450	163 46 66 101 5.161		ngg stranggan	
tC, 2 stage (s)		J. J					ki zaka a	orestal contention		**************************************
tF (s)	3.5	3.3	176 Hart 176	THE PROPERTY OF THE PARTY.	2.2	Thursday,	Call the marks	8-24-4-1 (Fig. 1)	TATUM IN THE RESERVE	
p0 queue free %	87	98			100					
cM capacity (veh/h)	94	575	et Tapene	- The same	784	Harris III.				
	avain a	NO 4		ODIA	SB 2			AUTOMANIA STORES	PROPERTY AND A STATE OF THE STA	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1			i i i i i i i i i i i i i i i i i i i	<b>BARRONIO</b> GRAND	Martin Paris Communication	
Volume Total Volume Left	24	434	434 0	711 0	711 0	Para Calling and the calling a				Terrorent ber
Volume Right	12 12	0	0	0	0					
cSH	162	1700	1700	1700	1700	His Report and the second				alle structurals
Volume to Capacity	0.15	0.26	0.26	0.42	0.42	12 may 2 m	A Barbara and A Barbara		ognovenieni	The state in the
Queue Length 95th (ft)	13	0.20	0.20	0.42	0.42					ALTERNATION OF THE
Control Delay (s)	31.0	0.0	0.0	0.0	0.0	i da a de como es			ramenta con vertera sancia	
Lane LOS	D			<b>.</b>						AAMINELEE LASHINALIKUNGSIGE
Approach Delay (s)	31.0	0.0	Karatan dan	0,0			ericani			A SECTION OF THE
Approach LOS	D			Marian Maria	September 1980 Sep			HUROSCHUTKE GULFEDET		THE RESERVE OF THE PARTY OF THE
		es e nacemberal	KATA SAJADAN	illan san sagata						
Intersection Summary	nikanikasan velikis		- 0.0	1945	or and an all the	night bigeta Nghalagani	einen Dexembe	Range et al.		and a fine south bill be
Average Delay	n:e:		0.3	1.0	5111 2.	1-10-10-1	<u>C</u> arangan sanca	i (iliana iliana il		
Intersection Capacity Ut	ilization	2	42.0%	THE IC	JU Leve	l of Servic	<b>e</b> 	A i	20.10	A THE REPORT OF THE
Analysis Period (min)		landa da cara	15		g de la company	Terrescon del Marie			ak:	Sang and extended
	von artikalija (1917)	or an executive and	12 Julius 12 Julius 13 Jul		Marketta (mark	ation must be start		material interest		attrativitati kandina

:	ሻ	<b>†</b>	ļ	W	•	1
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Movement	NBL	NBT (	SBT	SBR	SEL	SER	www.masamea	apourana-carabada	e a la company de la compa		iiunii 288
Lane Configurations		<b>个</b> 个	<b>^</b>		¥f		( Part van				
Sign Control	100010000000000000000000000000000000000	Free	Free		Stop					eggenera en en en en en Light fan Tunit kildligh	
Grade	oranie dinamo i ministro	0%	0%		0%						
Volume (veh/h)	0	745	1114	0	19	2	gundlijbyka	usattu (alija)		gyd <del>lat</del> ti.	e men
Peak Hour Factor	0.80	0.91	0.94	0.53	0.92	0.92	rant adilibrii aniigu	15231113135555555	esitterilinitersor:		526494045
Hourly flow rate (vph)	0	819	1185	0	21	2				e a partico del se	Preference
Pedestrians Lane Width (ft)		4 12.0	5 12.0	ga ga ga kacama	a kina na mata i					and the second	
Walking Speed (ft/s)	o Grant de Pod	4.0	4.0				William Table				
Percent Blockage	a vilkanila	0	0			en ann an Airle				angere strette	AF 10.
Right turn flare (veh)	10 × S.24 Na 52 20 10 10 10 10 10 10 10 10 10 10 10 10 10				PLANE	P-000000000000000000000000000000000000					esecentino
Median type	ner veret i gra Ner oddi i dalasi			givilar 138	None			adela aren assass	ден от при однати. Избарата на при		
Median storage veh)		2.2			######################################						
Upstream signal (ft)	0.75	109	497	, and the second	0.75		ramijasus (A)	THE STATE OF THE S		ENA ACT DAY DIVERSAL TOWN	resta La companya
pX, platoon unblocked vC, conflicting volume	0.75 1185		ON FRANCISCO	ได้เกียง (ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ.ค.ศ	0.75 1599	0.75 597					1-1
vC1, stage 1 conf vol	1100		and prominent		1099	U.S. O.S. I				NATIONAL PROPERTY AND ADDRESS OF THE PERSON	IAN III
vC2, stage 2 conf vol		e i justanek	u jar	an and the		violente de la		120 100 100 100 100		STATION ACCOUNTS NOT THE	
vCu, unblocked vol	918	00000000000000000000000000000000000000	N POR BOSESSESSESSESSES SES		1468	136	ARABIRANIA EL PRILATORE	CENESITA CLADA VERGIOTA FRESER.	BATTANIA ITAWA STANDONIPIA GET	Sundoenius apadotos eses	
tC, single (s)	4.2			eri gababat Managatan	6.8	6.9		rsinglister (Med			
tC, 2 stage (s)				9000 000 SAJONAY 1880				2011 SS 27 CHIS CONT.			
tF (s)	2.2	entre de la Co			3.5	3.3 100		Metale Autom	cation of protection		
p0 queue free % cM capacity (veh/h)	100 547				77 90	671		mane verya cina	partiera esta de la constancia de la const	(A) 11/2/15/19	ne in the
C S C S M C C C C C C C C C C C C C C C	CONCRETE PROPERTY OF STATE	inder Statistation	1000				ian etaliä kamena esa	ili alimpidi ped ya Kilor alikili	estilitotäiseet		
Direction, Lane#	NB.1	NB 2	SB 1	SB 2	SE 1		and subsequences	anadi kundanis 1999	eathream caide 1946	diespeid Phase Passin	5 (- i),
Volume Total Volume Left	409	409 0	593 0	593 0	23 21				erieri errana (2019)		
Volume Right	0	0	0	0	2 i	AND DESCRIPTION					
cSH	1700	1700	1700	1700	99						
Volume to Capacity	0.24	0.24	0.35	0.35	0.23	espol 2015 est 1111	est expedien		and the state of t	New Yorkshippe	nates
Queue Length 95th (ft)	0	0	0	0	21	COS DELLO L'ESCENTION CONTROL	namen and a series of the seri		U TOMO SE SECRETARIO DE TRANS	10.0	
Control Delay (s)	0.0	0.0	0.0	0.0	52.2		1000	nedla ene	articitatiko (n.i.)	Partie de la company	490
Lane LOS	6.0	J. Aski.			F 52.2				Section 2.		10 SE\$40
Approach Delay (s) Approach LOS	0.0	and the second	0.0		52.2 F	and and the same of the same o	America College	<u>err</u> vaking rapa	estables est	rantar genter	
• •					Г						
Intersection Summary	La Maria de Come.	er en missien me	es himmand	oonsaan araa	<b>Marg</b> higallini	nichility (					limilade
Average Delay	:1:2 <u> </u>	×4.	0.6	ong billosokurs i	SEE E	1 -4 0			Λ	.g. (3 <u>€2</u> 12 (4 <u>4.</u> 14.gen)	negrootsi
Intersection Capacity Ut Analysis Period (min)	ilization	7 THE RESERVE OF THE	42.0% 15		JU Leve	l of Servi	ce	decision of	4		AND PAI
Analysis Fellou (IIIIII)	er en en en en en	Jaman Alekili	10	n specano	gorne Signer (1.1.1111)		ing the Michael Charles	n jan pan bung labah	lang ser <u>ang ser</u> bagan di		
				an a		A A STATE OF THE S				and the State of the State of	in this se

	<b>→</b>	•	✓	<b>←</b>	4	<i>&gt;</i>				
Movement A	EBT	EBR (	WBL	WBT	NBL	NBR 1911	g gradelikana Kasaning per		social property	
Lane Configurations	<b>↑</b> }	SSECTION II AWARE TO A MARKE	NECTO-PROGRAMMENT	44	¥	Z.J.AVYZIIVANINPUNUKATYKONINA	0.5540000000000000000000000000000000000	rosiinoerroscroefurvvv(dol	POOLING ROSSICH KONSUMBERGENERIS	MUNICIPAL INDICATION ALCO
Sign Control	Free	ales (CTA)	ou Daga Samue VII	Free	Stop	2.01.01.00148899				
Grade Volume (veh/h)	0% 546	80	27	0% 556	0% 4	145	HINGS BUT THE STREET	worth w		
Peak Hour Factor	0.96	0.86	0.73	0.95	0.56	0.66	GERTALE MERCHINI			Calling College
Hourly flow rate (vph)	569	93	37	585	7	220	on Republication			
Pedestrians		ča se		SALCHOSEDRIS OTANALISMOS	y manganan Seri Sila	S (18   S. SYNESS PROCESS / A \$ \$ 60 / S		14,000,000,000,000	PALIFFEL NOTHS HINLISTIFILITIES	UP-17-1-18-18-19-1-18-1-18-18-18-18-18-18-18-18-18-18-18
Lane Width (ft)		registration of		Land of the same			ale same Killing	PROD <b>ANA</b> ZATION		recent tel 19 miles
Walking Speed (ft/s)		S. P. C.	enemenalistica (e. 1845).		Belling Control	ova v gertilestelletelle.			5,000 A700 SO (5)	Summer and the summer
Percent Blockage				admidLin	Appropriately	eris entreshiñ		MUNTER	See Salar 1988.	erenter 10
Right turn flare (veh) Median type			uta da seriesa. En esta da seriesa da	tentaen kari eta	None		ijan en 1194	Magazina Maran	2014091	and Haller
Median storage veh)	iner tenderinen	a produkta 1910.					Kasala da Kabala da K			A Company of the Comp
Upstream signal (ft)	443	un Politic Sch	tiri (Ditatori	204			ye washirin			
pX, platoon unblocked	san an againean an again a Amaran a	Ammorku (FACOSEPS Solve BSSEPS SSS	0.96	8000370878-124004000	0.97	0.96	DOGGE ROBERTAN OVENAVAR AND EVAN	TANGETTAL BOOK		ers approximated by T
vC, conflicting volume	anna daga kanggan Kanggan		662		982	331		made 75		Account to Continue
vC1, stage 1 conf vol vC2, stage 2 conf vol	an a singely	1,000	2110301 T				aaaaan meessa sa		AMENDALI NA	arenti i ini
vCu, unblocked vol		market and the state of the sta	601		874	255				
tC, single (s)	en e		4.1		7.0	6.9		Harry III		
tC, 2 stage (s)		Normal Section (Section )	****************		CVANTON CURRENTED			TIMENS OF STREET		***
tF (s)	Acceptances with	and the second	2.2		3.6	3.3		u, a zienienie		THE SECTION SECTION
p0 queue free %			96 943	areas a	97 258	69 712		and opening		
cM capacity (veh/h)	No.	ini ana kaominina na kaominina n Ny INSEE dia mampiasa ny kaominina ny kaominina ny kaominina ny kaominina ny kaominina ny kaominina ny kaomini	CONTRACTOR CONTRACTOR		54 C 28 C 50 C 60					
Direction, Lane #	EB/1	EB 2		WB 2	NB 1		energy of		raas suntelentru	
Volume Total  Volume Left	379 0	283 0	232 37	390 0	227 7		A Property of the Col		2.25.0003031567	
Volume Right	0	93	- 0	0	220		Carrier N. 1871			5000
cSH	1700	1700	943	1700	675	e deni				198 E-1 house market 110
Volume to Capacity	0.22	0.17	0.04	0.23	0.34	nanaankon		rangan da 1966) Maranda da 1966)		
Queue Length 95th (ft)	0	0	. 3	0	37		4	GCZDANIENIUS N		
Control Delay (s) Lane LOS	0.0	0.0	1.8	0.0	13.0 B			gallarının edili	- 11 (1990) 10-	AND THE REAL PROPERTY.
Approach Delay (s)	0.0	GENÇAK PETRIBATA	A 0.7	augustine kelini	13.0	and the second		AND SERVICE	and the Co	4.17
Approach LOS	e je se dovina sa s		property (E)		В	PERONAL PROPERTY AND ADDRESS OF THE PERONAL PROPERTY AND ADDRESS OF THE PERONAL PROPERTY AND ADDRESS OF THE PE		A CHARLES THE STATE OF THE STAT	24.2. mm - 24.2. mm - 24.2.	evera <b>s</b> Maseria (Phalli
Intersection Summary	wateriisiiki	river meningan		nes de Salvin	one a proble	erena (f. 1866) Mariana de la companya (f. 1866)	Medical Control		andronen er Som en er	
Average Delay			2.2			2000				
Intersection Capacity Uti	ilization	media (	51.2%	l (	DU Leve	el of Service	and products in	A		

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Movement/	EBT	EBR	WBL	WBT	NBL	NBR		A maning to	
Lane Configurations	<b>↑</b> ↑₽			41				A CONTRACTOR OF A CONTRACTOR	Alt. ol. 1
Sign Control	Free	William energ		Free	Stop				on nasko takeratori (***) Zavator forazioaren hastera
Grade	0%			0%	0%			NAMES NO THE THE PERSON NAMES OF THE PERSON NA	
Volume (veh/h)	467	2	16	486		0	Marie III. Marie II. de la Carlo de l		Approprietti
Peak Hour Factor	0.78	0.92	0.92	0.76	0.77	0.52	a aliaha la volanosa essa atauna essa a	\-\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\	Carried and Carrie
Hourly flow rate (vph)	599	2	17	639	0				
Pedestrians	L-1478000 100000 X 100000000 1111 N 1	104.T-1000001794 104.004 T294.794 991.794			212		SPACE SPACE TO A LETTER SPACE AND SP	anotatonom – A soby-ging NAMAG A was gold (2000)	
Lane Width (ft)		ufferius fil			0.0				
Walking Speed (ft/s)			to confinence were the confinence	war order and and titl for the root of	4.0				
Percent Blockage	ARTHUR LOTT			isk are bill	0			a atolica nell	
Right turn flare (veh)	saus mendrans disserti	ini intersection of all the	BRONDE SEACODES MESOS	h Zarawa za propadzioniai				**::::::::::::::::::::::::::::::::::::	oerse alvoja olu introepikologo kirkitologo (2.44).
Median type	Louisine (1)		caldbafti (		None				Last Diomante de Carte de la C
Median storage veh)	***********	es contra regulare de treste	umpungan (Ma						
Upstream signal (ft)	387			309	rienista saries	and the second of the second of the		Assessment of the second	
pX, platoon unblocked		10 10 14 ACC 10 V	040	EE TSESSESSESSES CRUTA	4400	413		raciona de la compa	
vC, conflicting volume	i i i i i i i i i i i i i i i i i i i	V.III.	813	iai u jaha, Trii	1166	410			
vC1, stage 1 conf vol		monach namachada			al receivable	AND AND THE RESERVE OF THE PARTY OF THE PART	a de la companya de	GILLER STORES	
vC2, stage 2 conf vol vCu, unblocked vol		APHORNAL	813		1166	413		A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Arean in arean and stability
tC, single (s)		AL SHEET IS	4.1		6.8	7.0	Harring and the second section		
tC, 2 stage (s)			. v., 7. !			SAME TARREST UNI	Anti-Landa Villa (1987)		
tF (s)	177	žušebro od i	2.2		3.5	3.4			
p0 queue free %			98	8. rumini (14. 176)	100	100	RALES IN A DESCRIPTION OF THE SECOND		ESTERAÇÃO O VELTO A PARA NO SE A PARA
cM capacity (veh/h)			823		183	580	LCA SHARRAN		
NAME AND ADDRESS OF A STREET OF THE PARTY OF		HHIP SECTION OF THE S	H (8 8) C. (10 10 10 10 10 10 10 10 10 10 10 10 10 1	NAZESZA III		HE CORPORATION IN THE CONTRACTOR	and the second	352863.0000	
Direction Lane #	EB 1	EB 2	EB 8	WB1	WB 2	apitanta di kanyana			
Volume Total	239	239	122	231	426	a dise	and the same of the same		Average Cartes and Car
Volume Left	0	0	0 2	17 0	0				
Volume Right cSH	1700	1700	1700	823	1700		20010270000572030760109		
Volume to Capacity	0.14	0.14	0.07	0.02	0.25	Security 5100		411 411 A	
Queue Length 95th (ft)	0.14	0.14	0.07	2	0.23			etted Startin	111475 T. 11141 T. 11141 T. 1114
Control Delay (s)	0.0	0.0	0.0	0.9	0.0	The company specification	contact and the contact		
Lane LOS		0.0	0.0	Α.		THE REPORT OF THE PERSON OF TH	Maria Na 4 Anno 14 Anno	SLEED CHARLESTON OF THE	ALL PROPERTY OF THE SECOND
Approach Delay (s)	0.0	1.44	zako boga eta e	0.3		The Committee of	no Cabanta Artes	as a seriencia	tara atau atau atau atau atau atau atau
Approach LOS		765 1788 179		e seljenišnistijas		un participation (2014)	e de la Companyon de la Compan	THE CONTRACT OF STREET	COMMUNICACIONES PURAS POR SERVICIO
					(人) (基础的)。	Genevationskie vertoka modernica en		7 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Intersection Summary	and the second			s restriction of the Chi		kenperahilinilitiliti	e e e e e e e e e e e e e e e e e e e		A DESCRIPTION
Average Delay	:::::::::::::::::::::::::::::::::::::::	g samuele d	0.2	T.	arri 2004	les Canalas		Λ	
Intersection Capacity Ut	ilization	ara ar ili aviili M	28.4%		JU LEVE	el of Service	pikty aranget sala	ж	
Analysis Period (min)			15	ONT THE REAL PROPERTY.	XII X			romaniemska	Secretary Commission Control
			Liza de la lita de la		de transfer (		diversión de la company de		

	•	<b>→</b>	•	•	<b>←</b>	*	4	<b>†</b>	-	-	ļ	4
Movement 1	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					<b>†</b> }		ď	<b>1</b>				7
Sign Control	danti a	Stop	opav parestratili. Hadibaren		Stop			Stop			Stop	March Mark
Volume (vph)	0	0	0	0	98	132	25	17	0	0	0	70
Peak Hour Factor	0.79	0.92	0.72	0.92	0.92	0.92	0.92	0.69	0.92	0.92	0.81	0.92
Hourly flow rate (vph)	0	0	0	0	107	143	27	25	0	0	0	76
Direction, Lane#	WB1	WB 2	NB 1	NB 2	SB 1			unan <b>un</b>		Lizeni net	ON OF SHEET	oraneri
Volume Total (vph)	71	179	27	25	76							
Volume Left (vph)	0	0	27	0	0	ni e artiki ili.	a had repulsion			enamento esta. Alternativo esta del	udanen udanen	
Volume Right (vph)	0	143	0	0	76	T I FILL IN LAND IN SECURITION						
Hadj (s)	0.00	-0.56	0.50	0,00	-0.60	4,000	And The			A HOUSE		
Departure Headway (s)	4.8	4.3	5.6	5.1	4.5							
Degree Utilization, x	0.09	0.21	0.04	0.04	0.10	e despera						
Capacity (veh/h)	730	820	608	664	750							
Control Delay (s)	7.1	7.2	7.7	7.1	8.0	ogur 1981		entere e la companya de la companya La companya de la co	marring.	1 any fifther	garan albi	
Approach Delay (s)	7.2		7.4		8.0	OLIGAN II OO OO OO OO OO OO OO OO		*******************************	nous as as serveron I no Million and Million Million	ELLA A A MORROMACTOR CONSESSA FO		F140-8-000-04-03678
Approach LOS	Α			garan 1970)	Α		ng pand			Countries	garayan k	or the Supe
Intersection Summary				NAMES OF STREET	user en	and the	<b>国际基本</b> 的				ententa korres	
Delay		3	7.4	gastori (ili suo Linna salahini		y isa <del>117</del> 7	ing the second	erite Lipear i 1 ho	44,000	in Harmal	- Lighton (Light	
HCM Level of Service			Α		******							
Intersection Capacity Ut	ilization	en e	39.9%	IC	CU Leve	l of Ser	vice		A.	New Applied	erija erija erija	Books (Bally)
Analysis Period (min)		**************************************	15									
	40.000.50			1.062511777	a 11 11 11 11			194574				i i

		•	•		,	,				
Movement	EBT	EBR	⊪WBL ⊪	-WBT	NBL	NBR	aktivus ostad (j	andra (124) (Annih	politeration on the	MERRORE DIDNIK SIDE AUS.
Lane Configurations	ተተኈ	ague mora mora esca.	s Benediction of the Colonia	<b>十</b> 个	Manager mentang ang allas		and the second file have all the experience.	n in war were suite best to the subscript of	v-625-00-8947-185503,005-865-80-6.	
Sign Control	Free	aleman Mercin	Caminascini (20)	Free	Stop			au ista siyak		
Grade	0%	77(00)V <u>2</u> :7 <u>1</u> 0(20)C	405598 87345 <b>471<u>54</u>2</b> 850	0%	0%				SMONAGINAS BODI NIBORANA	
Volume (veh/h)	498	222	15	505	0	0	Handari Daysen			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	6257958655009556		TO SOUTH AND SACRAL AND AND THE	
Hourly flow rate (vph)	541	241	16	549	0.40	0144	Stirional ia	san Balen eradiri.		
Pedestrians Lane Width (ft)					210 0.0					Cathwell Industry
Walking Speed (ft/s)				15671110 815 18	4.0	distributed (Je				600 to 000 to 600 to 100 to
Percent Blockage	anging India da	gjaren Al	OKTOWE SE	CARREST AND AND	- 0			arondonos de la		
Right turn flare (veh)	6	and the likes			HOSTAL PROPERTY			and the second second		
Median type		ner alt ibra			None				Lagrage Colors	
Median storage veh)			entresse properties active		Part Control Control	00/12/00/00/00/10/00/00/00/00/00/00/00/00/00/	Malest Delectoral Especial Section	14974413888779881A3888887	1007260360 os48060 causino	PROPERTY OF THE PROPERTY OF TH
Upstream signal (ft)	132	enion (PM)	CTUPOT AND SE	564		and the state of				
pX, platoon unblocked			0.97		0.97	0.97				
vC, conflicting volume	Albert Betrick	et udak fisik	993		1179	511	reday bir din	de de la companya de	granerii dh	
vC1, stage 1 conf vol	BESCHIKE CONSTRUMENTER FOR	en River (Prijun <b>ia)</b> hundres	siung Apexatur dunakterist	rrightschollandshilba		Samuel Spirite Property and the		Note the second sec	APPENALALZA PEREST	GAANGU ERANAMATTA KATOO SAA
vC2, stage 2 conf vol	na a de la composition della c	etied made			4400	440	and washing and	June 1900		Maria Alexania
vCu, unblocked vol	ala de la companya		937	STATE OF THE STATE	1128	442	2.00		Paranama ang ang ang ang	
tC, single (s)		17.0	4.1		6.8	6.9		The second second	accommod accommo	eadaretziines/Phidi
tC, 2 stage (s) tF (s)			2.2	a autoli in i	3.5	3.3			arkina maksingan	
p0 queue free %			98		100	100				
cM capacity (veh/h)	etianos de este		719	11.04.74	191	553	and district			
SAN AND SAN ASSESSMENT OF SAN AND SAN				AA/D#a	31111111111111111111111111111111111111	restation permitted				
Direction, Lane #	EB/11	EB 2	EB 3	WBI1	WB 2	WB 3	amendenski karil	Bigginian market (1956)	HARRISTAN AND AND AND AND AND AND AND AND AND A	
Volume Total	217	217 0	350	16 16	274	274 0				
Volume Left Volume Right	0	0	0 241	. 0	0	0		and the second second second	ana a di Wilada	
cSH	1700	1700	1700	719	1700	1700				t metalikan angan
Volume to Capacity	0.13	0.13	0.21	0.02	0.16	0.16			gardinasi di ili	am Malakini
Queue Length 95th (ft)	0	0	0	2	0	0				SER ROSSING PRINCEPORTS II
Control Delay (s)	0.0	0.0	0.0	10.1	0.0	0.0		Anger Maria	Complete Committee	
Lane LOS				В		2000 COURT OF THE SECOND STREET, SECOND SECO				
Approach Delay (s)	0.0	golytered (4)	lani san	0.3				arriveyler chaid		
Approach LOS										
Intersection Summary	AURINO DE LA TRADA DE LA TRADA	1000 (1000)		nijansaini <b>k</b> a	e kaannaan (banka	and the state of t		nasan karangan	interaceo esa un mante de la composición del composición de la com	and Annies are established
Average Delay			0.1			AND TO SERVICE OF THE PERSON O				
Intersection Capacity Ut	ilization		20.3%	- 10	CU Leve	el of Service		'email A		
Analysis Period (min)		e e e e e e e e e e e e e e e e e e e	15					on a responsible of the contract of Paris	entre en	
		entra de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela						etic Philippino		



Movement	<b>KEBL</b>	EBT	WBT	WBR	*SBL	SBR		arah Manif		A santa
Lane Configurations	me-tunts sasses	97-11-11-11-11-12-2	<u>ተ</u> ኈ			A CONSIDERA PER EN MUNICIPALITA	engere groeph charteles	ARTURALIZUET TEURENEUTURA		OLINACIBIO ENGLISHE SERVES (P. 1.55
Sign Control  Grade		Free 0%	Free 0%	SINGRAIN	Stop 0%		entropicus separalis	duktementetak	andrian end de The A	DELENENTAL DEBESSE
Volume (veh/h)	0	- 0	115	99	0	0		unite de la compa	nanono un verki	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	NORTH NORTH IN A BUILD UND A			
Hourly flow rate (vph) Pedestrians	0	. 0	125	108	0 250	0				
Lane Width (ft)		Life (2005) Hor	rillia e e	and the state of	0.0	Canadara.	ini zi i ku wana kush			
Walking Speed (ft/s)	Maria de la Compania				4.0	**************************************			HEALTH SOUTH A TORONTO	
Percent Blockage					0	recognist	kurn olo álla		Salah sarah Salah pe	
Right turn flare (veh) Median type	ja allindik Komuni		aratigan es	. 290 ()	None	Landa Service Afficial			and a majerial section of	
Median storage veh)					HOUC				The section of the section of the C	
Upstream signal (ft)	eritaliakon erreteko Hariotzakon kari		142		engram graman Paraga				i (estatuan estat)	
pX, platoon unblocked	483			X.	420	366			W-12-12-12-12-12-12-12-12-12-12-12-12-12-	
vC, conflicting volume vC1, stage 1 conf vol	400				429	300			Meseletra i de	turpade (1914)
vC2, stage 2 conf vol	18 (19 ) (19	i i	nertita ya	produce be	entas uzenzo est	Frankskask	36131786	elane di secondario. Para di secondario		
vCu, unblocked vol	483			Bollo IS DOVE	429	366	197.75228			
tC, single (s) tC, 2 stage (s)	4.1	A LIEU AND LOOK I	NEW YORK OF THE REAL PROPERTY.	n (Separativa e a)	6.8	6.9	THE PERSON NAMED IN		Manual Control	. The season of the
tF (s)	2.2	a fightion		gapining.	3.5	3.3	(Lightenberg)	nga masa na		
p0 queue free %	100				100	100				
cM capacity (veh/h)	1091	AND IN		iga diliperti	560	636	K. Marinakana	na sa <del>te</del> d ataonia		
Direction, Lane #		WB 2	ONTERINGENIUS (		ouenement	ur <u>u</u>	ing property of	e Grundsyk a fert ett ett ett ett ett	estation of the second	or and its introduction
Volume Total Volume Left	83 0	149 0		i i kilkali				in samuel		h Paraparaga
Volume Right	0	108	ika eko k	ogames an	on provincion	North Rein	g tellesadi i stat		igrafia de la como de l La como de la como dela como de la como de la como dela como de la como de	
cSH	1700	1700								
Volume to Capacity  Queue Length 95th (ft)	0.05 0	0.09 0	(1864) (194 <u>4)</u>	aprende l		Pharmacul	Maria Maria		olasti a <u>u</u> tico	Mada shina a
Control Delay (s)	0.0	0.0	n Profesional p		Quality Process					
Lane LOS	rretal allocations	11:00 Co25555 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	CATURATURA NAS			153111280113111111111111111111111111111111	00000000000000000000000000000000000000		ESCULLAR NEL ESCHOLOT (SELEC	Kaanakamisi kusaan meren Kien Kibili
Approach Delay (s)	0.0			ande (b. 14)	<del>Mithia</del> thia	indean da	iniconne de	and Albanya		
Approach LOS	C880/07070000000000000818880									T *
Intersection Summary  Average Delay	an in the second second	Kin many	0.0	HIBIHIIII II FARRON		njij <b>a Bi</b> gurjana <b>K</b>	ie na de			
Intersection Capacity Uti	lization		0.0 6.7%	l IC	CU Leve	of Servic	e T	alle A	and the parties.	State of the state
Analysis Period (min)	STEER AND STREET		15			en antingen at the live	ercise Stiddy Fred Constitut			
i El Samunia di bizarrania	112/21/10	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		APPER I	1.8421074	galling in	HI MATERIAN	alitoini is tia <u>la</u> t	1997 - Holland	otherwise com

	<i>•</i>	<b>→</b>	7	•	•	•	1	<b>†</b>	1	1	<b>↓</b>	4
Lane Group	EBL	EBT	EBR	WBL	WBT	-WBR	≝NBL	NBT.	NBR-		SET	SBR
Lane Configurations	ሻ	सी	<u>بر</u>		<b>4</b> ↑	7		<b>4</b> 7		ች	<u>ተ</u> ጉ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	12	11	12	10	10	10
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	50
Trailing Detector (ft)	0	0	0	0	70	0	14.11	0		0	0	0
Turning Speed (mph)	15		9	15	ar a language	9	15		9	15		9
Lane Util. Factor	0,95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor			0.69			-514225		0.94			***	National School Security Co.
Fittoressan			0.850			0.850	ABA E	0.965		1 5 5	0.978	0.850
Flt Protected	0.950	0.989		***************************************	0.978			AND DO NOT THE REAL PROPERTY OF THE PERSON O	A CONTRACTOR OF STREET	0.950		NO. CONTRACTOR AND ADDRESS OF THE A
Satd. Flow (prot)	1493	1611	1468	0	3157	1509	0	2738	. ⊍. 0	1560	2889	1306
Flt Permitted	0.950	0.989			0.978		***************************************	- P	AND THE RESIDENCE OF THE PERSON OF THE PERSO	0.143		LEAN DESCRIPTION OF THE PERSON
Satd. Flow (perm)	1493	1611	1009	0	3157	1509	0	2738	0	235	2889	1306
Right Turn on Red			Yes			Yes			Yes	T. T. C. of PTT ACCORDANCE TO THE SECOND SEC		No
Satd. Flow (RTOR)			1			83	d (s	23	F 4 . 2			
Headway Factor	1.04	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.09	1.09
Link Speed (mph)	J. 53.	30	715		30			30			30	
Link Distance (ft)		309	**************************************		183			111	and the second s	VX-Mile White brings consum.	268	ON THE STATE OF TH
Travel Time (s)	1 44	7.0	44.7	4.254	4.2	计算量		2.5			6.1	E.S.
Volume (vph)	212	155	1	111	127	233	0	430	99	342	1017	619
Confl. Peds. (#/hr)			200	4 8 4		8.4.67	1546		107	107		
Peak Hour Factor	0.81	0.85	0.82	0.84	0.76	0.78	0.54	0.96	0.73	0.90	0.94	0.83
Heavy Vehicles (%)	11%	6%	10%	7%	9%	7%	23%	16%	17%	8%	10%	5%
Adj. Flow (vph)	262	182	1	132	167	299	0	448	136	380	1082	746
Lane Group Flow (vph)	211	233	_ 1	0	299	299	0	584	0	380	1265	563
Turn Type	Split		Perm	Split		pt+ov				D.P+P		ustom
Protected Phases	2	2		5	5	56	3 4.5 i			6	16	6
Permitted Phases	~		2	F	-	FO				1	4.0	1
Detector Phases	8.0	2	2	5	5	56		0.0	100	6	16	6
Minimum Initial (s) Minimum Split (s)		8.0 31.0	8.0 31.0	8.0 25.0	8.0 25.0			8.0 25.0		8.0	and some of the	8.0
	31.0 31.0	31.0	31.0	25.0	25.0 25.0	87.0	ΛΛ		ΛΛ.	25.0 62.0	94.0	25.0
Total Split (s) Total Split (%)					25.0 16.7%		0.0	32.0 21.3%	0.0		94.0 62.7%	62.0
Maximum Green (s)	27.0	27.0	27.0	21.0	21.0	20.0%	U.U.//	28.0	0.0%	58.0	02.176	41.5% 58.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		5.2	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	Lag	Lag	Lag	Lead	Lead			Lead	1445	Lag	4	Lag
Lead-Lag Optimize?	Lug	Lag		LINE WELLOWS		#-37.58.EE				Lug		Lug
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	F 2 1 1		2.0		2.0		2.0
Recall Mode	None	None	None	None	None	5 = 2.5	(	C-Max		None		None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		BB 0	7.0		7.0	51475	7.0
Flash Dont Walk (s)	20.0	20.0	20.0	14.0	14.0			14.0	78.00	14.0		14.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0	f Eut	0		0
Act Effct Green (s)	24.3	24.3	24.3		17.8	72.8		40.9		91.9	95.9	95.9
Actuated g/C Ratio	0.16	0.16	0.16	T W.	0.12	0.49	1151	0.27		0.61	0.64	0.64
v/c Ratio	0.87	0.89	0.01	s and the second section of the second	0.80	0.39		0.76		0.64	0.68	0.67
Control Delay	93.5	95.0	38.0	1111	80.2	17.2		57.2	15/2	30.6	20.8	23.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	Photograph (1975)	0.0		0.0	0.1	0.0

The Merano

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Lane Group	EBL	EBII:	EBIR	WBL WBT	WBR	NBL NBT 1	(BR SB)	SBT	SBR
Total Delay	93.5	95.0	38.0	80.2	17.2	57.2	30.6	20.9	23.6
LOS	F	F	D	F	В	Ē	C	С	С
Approach Delay		94.2		48.7	3355	57.2	BACKETT !	23.3	1 1 4
Approach LOS		F		D		E		С	The state of the s
Queue Length 50th (ft)	210	233	0	152	115	293	233	437	384
Queue Length 95th (ft)	276	#337	5	167	138	#457	352	557	495
Internal Link Dist (ft)		229		103		31		188	高高.
Turn Bay Length (ft)									
Base Capacity (vph)	269	290	182	442	833	764	659	1848	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	• 0	2	0	0	0	0	59	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.80	0.01	0.68	0.36	0.76	0.58	0.71	0.67

Intersection Summary
Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 40.6 Intersection LOS: D
Intersection Capacity Utilization 79.0% ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street

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▲	▲		LA
	1 2	(4)-3	
<b>                                   </b>	<b>€-18</b>	<b>46</b> _c	1 <b>4.9</b>
<b>T</b>   0	* P ØZ	<b>T</b> Ø3	♥- Øb
WEST CONTRACTOR OF THE STATE OF	THE PROPERTY OF THE PROPERTY O	Description of the second seco	



Laine Group	· NBL	NBT	NBR	SBL	SBR	SBR2		<b>1</b>
Lane Configurations	*	1		*	75	**************************************		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	10	13	13	12	12	12		
Storage Length (ft)	0		0	25	0			
Storage Lanes	1		0	1	2			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	ALCO THE STATE OF	
Leading Detector (ft)	50	50		50	50	**************************************	≠ 15 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
Trailing Detector (ft)	0	0	H. F.	0	0			14.2
Turning Speed (mph)	15		9	15	9	9		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.88	1.00		
Ped Bike Factor	And and a Zina	0.96	Tiese Tiese	0.90				
Frt 1880	241	0.984	37.0		0.850			
Flt Protected	0.950		1	0.950				22-01 July 1959
Satd. Flow (prot)	1532	1689	0	1736	2614	0		
Flt Permitted	0.950		//	0.384				
Satd. Flow (perm)	1532	1689	0	634	2614	0		
Right Turn on Red	m 46-2-5-325 T	34.7	Yes		oreni (Files	Yes		A 1/10
Satd. Flow (RTOR)		13		4000	6			
Headway Factor	1.09	0.96	0.96	1.00	1.00	1.00		
Link Speed (mph)		30						
Link Distance (ft)	***************************************	347			N. C. S. San Garage			
Travel Time (s)		7.9						
Volume (vph)	627	464	38	47	1077	22		
Confl. Peds. (#/hr)			95	95		35		
Peak Hour Factor	0.94	0.94	0.63	0.69	0.91	0.58		
Heavy Vehicles (%)	10%	11%	3%	4%	9%	0%	r en	
Adj. Flow (vph)	667	494	60	68	1184	38		44.52
Lane Group Flow (vph)	667	554	0	-68	1222			
Turn Type	Prot		12	D.Pmc	Control of the second	- 4/4 <del>8</del> 15		
Protected Phases	5	- 1		8.077	1			
Permitted Phases			EQ. Mg one lemmin	1	elektoria arxonista			
Detector Phases	5	1		1	1			
Minimum Initial (s)	8.0	8.0	and the Arthrell	8.0	8.0		and the second s	
Minimum Split (s)	26.0	25.0		25.0	25.0			
Total Split (s)	30.0	74.0	0.0	74.0	74.0	0.0		
Total Split (%)	28.8%	71.2%	0.0%	71.2%	71.2%	0.0%		
Maximum Green (s)	25.0	69.0	TOMAS U.S.	69.0	69.0			erotes Maria Maria VIII (1900)
Yellow Time (s)	3.0	3.0	1133	3.0	3.0			
All-Red Time (s)	2.0	2.0	co sako-enimina	2.0	2.0	25 S P 19 / 25 S P		2005/04
Lead/Lag		1741						
Lead-Lag Optimize?	en e		oraco (144) (152)		**************************************			
Vehicle Extension (s)	2.0	2.0		2.0	2.0			
Recall Mode	None (	C-Max	(	C-Max C	C-Max		HAVE STATES	
Walk Time (s)	7.0	7.0	hea i	7.0	7.0			
Flash Dont Walk (s)	9.0	8.0	years same your anis U	8.0	8.0	2005-04-1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-		
Pedestrian Calls (#/hr)	0	0		0	0			
Act Effct Green (s)	26.0	70.0		70.0	70.0			
Actuated g/C Ratio	0.25	0.67		0.67	0.67			a, recei
v/c Ratio	1.74	0.49	1000	0.16	0.69		Wallers	

	1	ı	, ,		•
Lane Group # I	NBL	NBT:	NBR SBL	SBRI	SBR2:
Control Delay	371.9	9.8	7.3	13.0	
Queue Delay	40.9	4.7	0.0	17.4	
Total Delay	412.8	14.5	7.3	30.4	
LOS	F	В	Α	С	
Approach Delay		232.0		FF-70	
Approach LOS	A CONTRACTOR OF THE PARTY OF TH	F		The state of the s	
Queue Length 50th (ft)	~661	156	15	252	
Queue Length 95th (ft)	#880	229	24	333	
Internal Link Dist (ft)	1454	267	医复数外外	B	
Turn Bay Length (ft)			25		
Base Capacity (vph)	383	1141	427	1761	
Starvation Cap Reductn	19	503	0	153	
Spillback Cap Reductn	15	0	0	557	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	1.83	0.87	0.16	1.01	

Area Type: Other

Cycle Length: 104

Actuated Cycle Length: 104

Offset: 45 (43%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.74

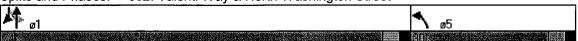
Intersection Signal Delay: 127.8 Intersection LOS: F
Intersection Capacity Utilization 79.8% ICU Level of Service D

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

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

Splits and Phases: 332: Valenti Way & North Washington Street



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			<b>T</b>		***	<b>T</b>	
Lane Group	##NBE	NBT	SBT	SBR	SEL	SER	property of the second
Lane Configurations			ተተተ			דדד	
Ideal Flow (vphpl)	1900	1900	1900	1900	and the second second	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)			50			50	
Trailing Detector (ft)			0			0	
Turning Speed (mph)	15		糖量	9	and the second second	9	
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.76	
Frt.				1.1		0.850	
Flt Protected	M-4713.1200.000 400.000.000					et V. det edigle i de en income monte	
Satd. Flow (prot)	0.	0	4759	0	0	3347	
Flt Permitted					TOTAL CHECKS STATE STATE OF THE		
Satd. Flow (perm)	0	0	4759	0	. 0	3347	
Right Turn on Red		XXTE	West and Albanda to the	Yes		Yes	
Satd. Flow (RTOR)			All I			127	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	No. 2015 Company of the Company of t
Link Speed (mph)		30	30	7-17-17	30	1111	
Link Distance (ft)		397	273		170		
Travel Time (s)		9.0	6.2		3.9	<b>F</b> 00	
Volume (vph)	0	0	1072	0	0	509	
Peak Hour Factor	0.92	0.92	0.91	0.92	0.92	0.94	
Heavy Vehicles (%)	0%	0%	9%	0%	0%	10%	/s
Adj. Flow (vph)	0	0	1178	0	0	541	
Lane Group Flow (vph)	. 0	0	1178	0	0	541	
Turn Type					C	ustom	
Protected Phases			5			1	71.
Permitted Phases			-	5.525		4	
Detector Phases			5			1	
Minimum Initial (s)			8.0 24.0	3 2 0 2		8.0	
Minimum Split (s) Total Split (s)	0.0	0.0	57.0	0.0	0.0	24.0 43.0	
Total Split (%)	0.0%	0.0%	8-97-985 COMP	0.0%	0.0%	5 - 2	
Maximum Green (s)	0.076	0.0%	53.0	0.0%	0.0%	43.0% 39.0	
Yellow Time (s)	A R R A		3.0			3.0	
All-Red Time (s)			1.0		500.5	1.0	
Lead/Lag	740 7 Sh		1.0			1.0	
Lead-Lag Optimize?		4 5 50	72 4 4			. 12 C E	
Vehicle Extension (s)	ă.		2.0	25 E 6		2.0	
Recall Mode	医着性 級		Ped			C-Max	
Walk Time (s)			7.0		•	7.0	
Flash Dont Walk (s)			9.0			9.0	
Pedestrian Calls (#/hr)			0			0	
Act Effct Green (s)			27.6	· 長春月		64.4	
Actuated g/C Ratio			0.28			0.64	
v/c Ratio			0.90		11.54	0.25	
Control Delay			44.3	7426226		7.6	
Queue Delay			0.2		75 5 6	0.4	
Total Delay			44.4			8.1	
LOS	1 4 5	E 1125 I	D	<b>新</b> 排 制		A	
Approach Delay		anii wasa sii sii s	44.4			E Marie E	



Lame Group	NBL NBT	SBT : S	BR SEL SE	R			
Approach LOS		D			4 EEE 5		
Queue Length 50th (ft)		264		53			THE PROPERTY OF THE PROPERTY O
Queue Length 95th (ft)	<b>全国为</b> 有公司第二	291		72		15614	
Internal Link Dist (ft)	317	193	90				77 To 100 TO
Turn Bay Length (ft)	PART ALL	1 A		tetale,		Pranadi	
Base Capacity (vph)		2522	220	)0			
Starvation Cap Reductn		484	113	88		7 6 F4 E	maine de
Spillback Cap Reductn		95	47	<b>'</b> 5			
Storage Cap Reductn		0.		0			
Reduced v/c Ratio	**************************************	0.58	0.5	51			

Intersection Summary
Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 57 (57%), Referenced to phase 1:SER, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.0 Intersection LOS: C
Intersection Capacity Utilization 39.3% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4120: North Washington Street & Beverly Street

The Merano

34: Cooper Street & Sumner Tunnel Off-Ramp

	<b>/</b>	1	*	†	<i>*</i>	<b>\</b>	<b>↓</b>	لر	<b>*</b>	<b>/</b> *	
Laine Group	WBL	WBR	· iiNBL	NBT	NBR	SBL	SBT.	SBR	NEL	NER	
Lane Configurations		**************************************		<b>个</b> 个		and the second s			ች ች		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	1.10	50	, ., .	50	1.0	,,,,		•••	50		
Trailing Detector (ft)	L State	0	8 2 50	0					0	K (11. 17. 1.	
Turning Speed (mph)	15	9	15		9	15		9	15	9	
Lane Util. Factor	1.00	1.00	1,00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt		0.865						10 min			
Fit Protected	16 6								0.950		
Satd. Flow (prot)	0	1736	0	3505	0	0	0	0	3273	0	
Flt Permitted									0.950		h, csaridi
Satd. Flow (perm)	0	1736	0	3505	0	0	0	0	3273	0	
Right Turn on Red		Yes		### :	No	100		No	No		and the Co
Satd. Flow (RTOR)		130			UT. 7248 SERVICE TO PHILADE.	2.2002.24 (23.16.17.16.1	r mesa x 1.00min.bart	US 22 P 4 2 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		ALTRACT HOMESKI ZOSLEHIYAR, S	
Headway Factor	1.00	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ETTERS S
Link Speed (mph)	30		a	30	20040042000		30	The second section of the second second	30		AND THE RESERVE THE PROPERTY OF THE PROPERTY O
Link Distance (ft)	264		71	579	i ri	BV.LE	347	1441	320	化多氯汞	
Travel Time (s)	6.0			13.2	THE PARTY OF THE P		7.9		7.3		
Volume (vph)	0	74	0	718	0	0	0	. 0	337	0	
Peak Hour Factor	0.92	0.84	0.92	0.92	0.92	0.92	0.92	0.92	0.66	0.92	
Heavy Vehicles (%)	- 0%	1%	0%	3%	0%	0%	0%	0%	7%	0%	
Adj. Flow (vph)	0	88	0	780	0	0	0	0	511	0	
Lane Group Flow (vph)	0	88	0	780	0	0	0	0	511	0	
Turn Type	C	ustom	(27. Minero 2081 12. MINISTER	-972777 #7780704 #44987022222					Prot		
Protected Phases	344.4	5	4	1 .	其重量的		2551.	5350	6	92 (m) (4)	HEBER SE
Permitted Phases					CANADA AND A CANADA	ng Xazana Sang ang Ara		# 54 / US - US	-TV-00-008-00- <u>u</u> -000-0		
Detector Phases		5		1					6	3 ( )	
Minimum Initial (s)		8.0		8.0				avery a convenience	8.0	DEAL THE WATER BOOK AND A STATE OF	
Minimum Split (s)		13.0		13.0		1111			13.0		A40.2 (#44)
Total Split (s)	0.0	14.0	0.0	57.0	0.0	0.0	0.0	0.0	29.0	0.0	
Total Split (%)	0.0%		0.0%	ACTOR OF THE MEDICAL AND THE SECOND OF THE	0.0%	0.0%	0.0%	0.0%		0.0%	
Maximum Green (s)		9.0	KONTEUN EUROPE	52.0					24.0		
Yellow Time (s)		3.0		3.0	11/1		9333	5 15.25	3.0		
All-Red Time (s)		2.0		2.0					2.0		
Lead/Lag	EFME.E.	Lead	4.55	Maja Ja	-100				Lag	#4d	
Lead-Lag Optimize?	65 57 40 96	Yes 2.0		2.0	PROGRAMMEN (#70	565145 / Sul		V9303557577	Yes 2.0		
Vehicle Extension (s) Recall Mode	as gij	None		Z.u C-Max					Z.0 None		
Act Effet Green (s)		9.0		61.4			150529812	9.76788AP-79	20.2	a Constant	
Actuated g/C Ratio		0.09		0.61					0.20	Book distan	
v/c Ratio		0.32		0.36	2.00	W. A. C.	3.00		0.20		
Control Delay		5.9		5.7					45.8		
Queue Delay		0.6		0.2	7 45 B E				1.0	T 10 10 1	
Total Delay		6.6	El version	5.9		3 5 2			46.8		
LOS		0.0 A		A.					TO.0		
Approach Delay	r srtie F	64h		5.9	vasastitis.	krajo (1965)	1.50× 82 <b>5</b> 0/50	reinlyndfiai	46.8	27412KS7	
Approach LOS			IKER	Α	EMA.		44.90	1111			
Queue Length 50th (ft)	55.7259.20	0		43	10: E			SEC. 28. HP 44	159	1867523807388	7-46/19-28-08-08-08-08-08-08-08-08-08-08-08-08-08



Lane Groupha of Pasa an	WBL WBR	NBL NBT N	BR SBL SBT	SBR NEL	NER 1
Queue Length 95th (ft)	13	65		140	
Internal Link Dist (ft)	184	499	267	240	dicknowledge inference generalized characteristics and an additional control general substitution (A.A.) of the A.A.A. Comp.
Turn Bay Length (ft)				医多类性 编数数	
Base Capacity (vph)	291	2151		818	
Starvation Cap Reductn	0 .	0		0	
Spillback Cap Reductn	60	553		118	
Storage Cap Reductn	0	0		0.0	
Reduced v/c Ratio	0.38	0.49		0.73	

Area Type:

Other Cycle Length: 100

Actuated Cycle Length: 100

Offset: 46 (46%), Referenced to phase 1:NBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.1

Intersection Capacity Utilization 36.1%

Analysis Period (min) 15

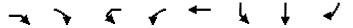
Intersection LOS: C

ICU Level of Service A

Splits and Phases: 34: Cooper Street & Sumner Tunnel Off-Ramp



	74	7	4	•	-	Ļ	ļ	4				
Laine Group	EBR	EBR2	WBL2	- WBL	WBT	SBL	SBT	SBR	- ø2	ø5.	ø6	
Lane Configurations	77	7		Ä	<b>个</b> 个	ሻሻ	<b>ገ</b> ቃ	7				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	11	12	16	12	16	12	16	ALESS SATURATION AND ACTUAL PROPERTY AND ACTUA			
Storage Length (ft)	0.	ali 7 sa		25		0	<b>主要用</b> 。	0			44 20	
Storage Lanes	3			1		2		1	SN & Bloods and CD0000			7N 9213-W228C0090c598
Total Lost Time (s)	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				www.vv.vv.vv.zzr.31.w
Trailing Detector (ft)	0	0	Ò	0	0	0	0	0		BALES	775	
Turning Speed (mph)	9	9	15	15		15		9				
Lane Util. Factor	0.88	1.00	0.95	1.00	0.95	0.97	0.95	0.95			為人 美星	
Frt	0.850	0.850			CONTROL OF THE STATE OF THE STA	1.00E0.00.00 W.000.00.00.00	0.970	0.850				
Flt Protected				0.950		0.950		FERE			15.4	阿莱里马
Satd. Flow (prot)	2617	1382	0	1902	3539	3780	1484	1581		STATE OF THE STATE		AND THE PROPERTY OF THE PARTY O
Fit Permitted		5 / 5		0.950		0.950				<b>产标金</b> 素	医皮虫菌	摄影法
Satd. Flow (perm)	2617	1382	0	1902	3539	3780	1484	1581				
Right Turn on Red		Yes	No	7353				No			3.5	
Satd. Flow (RTOR)		61			4.00	~ ~ ~					The second second	
Headway Factor	1.04	1.04	1.00	0.85	1.00	0.85	1.00	0.85				250 mg
Link Speed (mph)		13.000			30	STREET, ST. O. P. P. ST. W.	30				BACMIT WATER	
Link Distance (ft)		1336		r Paga	125		397		Water			
Travel Time (s)	070	A **		00	2.8	OFO	9.0	440				2500 2500 250
Volume (vph)	376	47	54	26	416	858	275	446			原用基础	
Peak Hour Factor	0.95 5%	0.77 13%	0.68 11%	0.72	0.92	0.93	0.88	0.91			\$1.50 E7 50	
Heavy Vehicles (%)	396	20 Company (1975)	79	0% 36	2% 452	5% 923	20% 312	10% 490	44	a a fide		
Adj. Flow (vph) Lane Group Flow (vph		61 61	79 0	30 115	452 452	923	391	490 411	4.16.15		E-17 - 24 - 2 - 2	
Turn Type	custom c	Guarden and America	Perm	Perm	402	Split	ુ ૭૭ ા	Prot	3577.3			5.81
Protected Phases	4	4	FEIIII	Fellii	4	- 5 6	56	56	2	5	- 6	
Permitted Phases	ı		1	1		. J.U.	. 20		4	J	U	
Detector Phases	1	1	1	# 41.3 <b>1</b> 2	1	5 6	56	5.6	18137 A			2005
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	30	- J.O	3.0	7.0	8.0	4.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0				20.0	24.0	8.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	38.0	38.0	38.0	20.0	30.0	8.0	
Total Split (%)	42.0%								20%		8%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	00.070	56.670	JJ. 0 70	16.0	23.0	4.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		8.4.4.5	· 新洲·夏星	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				1.0	4.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lead	Lead			125	Lag	Lead	Lag	No.
Lead-Lag Optimize?							W		49	Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	. di 4 4			2.0	2.0	2.0	
Recall Mode	C-Max		to the second se						Ped	None	Min	
Walk Time (s)			7.54					1000	7.0			861
Flash Dont Walk (s)		13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				eraveren FRE			9.0	rvi sig iki ayan masa		
Pedestrian Calls (#/hr)							5 W 4	4510	50	2 37 8	<b>多</b> 语。	
Act Effct Green (s)	38.0	38.0	amina 1677 1944 ST	38.0	38.0	34.0	34.0	34.0			arangang (S)	F401279
Actuated g/C Ratio	0.38	0.38	# # 4.6	0.38	0.38	0.34	0.34	0.34				
v/c Ratio	0.40	0.11	rocci (XXIII a XXIII a B	0.16	0.34	0.72	0.77	0.76		ovatel es vies	60 - 1985 - 1985	
Control Delay	7.6	1.4	7117	21.2	22.9	56.8	63.4	62.4				
Queue Delay	0.5	1.0	.,	0.0	0.0	13.4	5.3	8.2	mentative del			artministiczi
							-					



Lane Group	,EBR	EBR2 WB	L2 WBL	WBT	SBL	SBT	· SBR	ø2ø5ø6
Total Delay	8.1	2.3	21.2	22.9	70.2	68.7	70.6	
LOS	Α	Α	С	С	Е	Е	E	
Approach Delay				22.6	101	70.0		
Approach LOS				С		Ε		
Queue Length 50th (ft)	3	0	48	105	320	278	292	
Queue Length 95th (ft)	159	0	68	146	m371	m334	m352	
Internal Link Dist (ft)				45		317		
Turn Bay Length (ft)			25					
Base Capacity (vph)	994	563	723	1345	1285	505	538	
Starvation Cap Reductn	264	357	0	0	355	68	94	
Spillback Cap Reductn	0	0	0	0	- 0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.54	0.30	0.16	0.34	0.99	0.89	0.93	

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 13 (13%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 49.8

Intersection Capacity Utilization 54.3%

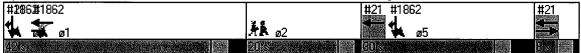
Intersection LOS: D

ICU Level of Service A

Analysis Period (min) 15

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

1862: New Chardon Street & North Washington Street Splits and Phases:



	•	<b>→</b>	7	•	4	•	4	<b>†</b>	-	-	<b>↓</b>	4
Lane Group	MEBL	EBT	EBR	WBL	WBT	-WBR	. NBL	NBT	NBR.	SBL	SBI	SER
Lane Configurations	ች	ተተተ			<b>^</b> }		ች	<b>^</b>			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	1.0	1.0	50	1.0	50	50		50	50	
Trailing Detector (ft)	0	0			0		0	0		0	0	V. 1902 HARS
Turning Speed (mph)	15		9	15		9	15	1 4 5 2	9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.01	1.00	1.00	0.998	0.00	1.00	0.850		1100	0.907	
Flt Protected	0.950			Radio (Acc., or			0.950				0.985	
Satd. Flow (prot)	1770	4759	0	0	3279	- 0	1805	1615	0	0		0
Flt Permitted	0.263			<u> </u>			0.749	461	# # # # # # # # # # # # # # # # # # #		0.957	
Satd. Flow (perm)	490	4759	0	0	3279	0	1423	1615	0	0	1617	0
Right Turn on Red	100		Yes			Yes			Yes		56/337	Yes
Satd. Flow (RTOR)			100	3.343	4			233	ASE		9	
Headway 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
Link Speed (mph)		30		6 50 5	30			30			30	
Link Distance (ft)		204	19 35 15		132			531			162	
Travel Time (s)	BERNE S	4.6		Z E A X	3.0			12.1			3.7	
Volume (vph)	7	665	0	0	727	13	155	0	29	4	0	8
Peak Hour Factor	0.92	0.83	0.92	0.92	0.77	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	0%	0%	10%	2%	0%	0%	0%	2%	0%	2%
Adj. Flow (vph)	8	801	0	0	944	14	168	0	32	4	0	9
Lane Group Flow (vph)	8	801	0	0	958	0	168	32	0	0	13	0
Turn Type	Perm					-	Perm			Perm		4 6
Protected Phases		1			1		62 (17.4 20)	5			5	PC-650-CHTERRING
Permitted Phases	1				1 5 69	B E	5	# Y 61 (2)		5	9451	
Detector Phases	1	1			1		5	5		5	5	3
Minimum Initial (s)	8.0	8.0			8.0	a Aug 8	8.0	8.0	150.5	8.0	8.0	
Minimum Split (s)	22.0	22.0			22.0	19. 7	20.0	20.0		20.0	20.0	
Total Split (s)	65.0	65.0	0.0	0.0	65.0	0.0	25.0	25,0	0.0	25.0	25.0	0.0
Total Split (%)	72.2%		0.0%		72.2%		27.8%	A Production of the contract of	Committee of the Commit	27.8%	27.8%	0.0%
Maximum Green (s)	61.0	61.0			61.0		21.0	21.0		21.0	21.0	黄 5 3
Yellow Time (s)	3.0	3.0			3.0	80868 N. S.	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	D 12	1.0	1.0	
Lead/Lag	5 V 5 TE											APEAN STORIGHTE
Lead-Lag Optimize?				E 1200		1 4 48	极 有情。		125			12.3
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	AND THE RESERVE OF THE PERSON NAMED IN
	C-Max				C-Max	1445	None	None	25.36	None	None	<b>有事</b> 言
Walk Time (s)	10.0	10.0		antamatra is	10.0		12.0	12.0		12.0	12.0	MacHonine (1997)
Flash Dont Walk (s)	8.0	8.0			8.0		1.0	1.0	<b>张</b> 有1.4	1.0	1.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	ESTATE OF STREET
Act Effct Green (s)	67.5	67.5		电报号	67.5	14.54	14.5	14.5			14.5	
Actuated g/C Ratio	0.75	0.75			0.75		0.16	0.16		BEST TOTAL STREET SELECTION	0.16	Contractor of the Contractor
v/c Ratio	0.02	0.22		144	0.39		0.73	0.07		1151	0.05	
Control Delay	2.6	2.3			5.1		53.3	0.3	Mark Sylvery		18.8	755 (St. 226 HILLIAN
Queue Delay	0.0	0.0	1 1 1 1		0.0		0.0	0.0			0.0	
Total Delay	2.6	2.3			5.1		53.3	0.3			18.8	
LOS	o	O	- E	1 / 43	A	K Z EK	D	A	1.75 6	ii ta	В	I # #
Approach Delay		2.3			5.1			44.9			18.8	
		~										

The Merano Timing Plan: AM Peak Hour

	_		¥	▼	-	١,	ı	- /		Ŧ	-
Lame Group	EBL	<b>EBT</b>	EBR	WBL WBT	WBR*	NBI	NBT	NBR	SBL	SBT	SBR
Approach LOS	14.14.6	Α		A			D		4.46.9	В	
Queue Length 50th (ft)	0	21	92.74.9442222402340234023402340	81		92	0	onemicative or p. 200 / 200 /		2	WALL ALTERNATION OF
Queue Length 95th (ft)	m2	26		117	u gal	148	0			17	
Internal Link Dist (ft)	THE STATE OF THE S	124		52		1. A P Par de Constillation de la Partie de	451	manner and the second s		82	CECNAL LONG PROGRAMME
Turn Bay Length (ft)								<b>最低的</b>			
Base Capacity (vph)	367	3567		2459		332	555	a a company of the co		384	PARTY IN THE STATE OF THE STATE
Starvation Cap Reductn	0	0.5	在手灣	0.		0	0			0	
Spillback Cap Reductn	0	0		0		0	0			0	
Storage Cap Reductn	0	.0		0	<b>图图</b> 第	0	0			0	
Reduced v/c Ratio	0.02	0.22		0.39		0.51	0.06			0.03	

Intersection Summary Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 42.4%

ICU Level of Service A

Analysis Period (min) 15

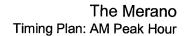
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 506: Causeway Street & Haverhill Street



	•	<b>→</b>	$\rightarrow$	•	-	•	•	<b>†</b>	*	<b>\</b>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT.	WBR	NBL	NBT	∵NBR∌	SBL	SBT	SBR
Lane Configurations				ካ	ተኩ				and the second of the second o	ACTION CONTRACTOR OF THE PERSON OF THE PERSO	<b>∱</b> }	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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)	<b>油</b> 类 计图	131		50	50		454	<b>14</b>		17.61	50	
Trailing Detector (ft)				0	0		enemics and security of the	C20179C190C1980G1000C0000	*	20 A Sec. 10 Co.	0	
Turning Speed (mph)	15		9	15		9	15		9	15	file).	9
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor			Post.		7353	提手机			FE A	Fe##	0.98	\$ 1 E
Frt	do minimo de como en la como e	ACTION OF ACTION AND ACTION OF THE ACTION AND ACTION ACTION AND ACTION ACTION ACTION AND ACTION									0.943	
Flt Protected				0.950	0.985		12.5			134		
Satd. Flow (prot)	0	0	0	1643	3406	0	0	0	0	0	3320	0
FIt Permitted				0.950	0.985		F 623		4.43			
Satd. Flow (perm)	0	0	0	1643	3406	0	0	0	0	0	3320	0
Right Turn on Red	14 B 6 E		Yes	Yes	ffla.	Yes	7.553		Yes	经售 圖		Yes
Satd. Flow (RTOR)				233	88						115	
Headway 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
Link Speed (mph)		30			30	NIVE STATE		30		54	30	\$40.75 <b>.</b> \$270.
Link Distance (ft)		142	100	1.50	135		9888	170		e a dek	251 5.7	
Travel Time (s)	0	3.2 0	. 0	338	3.1 <b>27</b> 9	0	0	3.9 <b>0</b>	0	0	5.7 171	106
Volume (vph) Confl. Peds. (#/hr)	U	U	· U	330	219	U	U	U	V			50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0.32	0.92	0.32	367	303	0.92	0.32	0.32	0.02	0.52	186	115
Lane Group Flow (vph)	0	0	0	233	437	0	0	0	0	0	301	0
Turn Type		<b>.</b>		Split	101					AR MINTER		<u> </u>
Protected Phases		4.1	a de la compa	1	1		1504 S				5	
Permitted Phases		Eace Water Sax		-		5-24	100 800 000 000		A 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Y201105440M
Detector Phases		1.73		<b>\$21</b>	1.1		1110		1 1 1	TE E	5	25 9
Minimum Initial (s)		mmmmmm <u>1</u>		8.0	8.0	E24.7142888688888888			(2.05) 2.6		5.0	2302004 209-28-204-14
Minimum Split (s)				13.0	13.0	MARKET STATE	1241			33 A	20.0	
Total Split (s)	0.0	0.0	0.0	52.0	52.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	52.0%	52.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.0%	0.0%
Maximum Green (s)				47.0	47.0						27.0	EMERGO XXX APPROXIMATION
Yellow Time (s)		15.51	144	3.0	3.0			1714			3.0	1147
All-Red Time (s)			a constructive strangering for (F.)	2.0	2.0				Southern of the State	:X	2.0	
Lead/Lag		155	44.6	Lead	Lead			1445			5000	<b>表表示</b>
Lead-Lag Optimize?	2015			0.0	0.0				T. COLAMO T. T. T. T.		0.0	
Vehicle Extension (s)	13.7	4551		2.0	2.0		17.5				2.0	
Recall Mode				C-Max	C-Max			5.04			Max	
Walk Time (s)			3.2.	1 544 4	4 1 1		415			1.80 %	54.5	
Flash Dont Walk (s)					5 E E St					12.75		
Pedestrian Calls (#/hr) Act Effct Green (s)	54 34	4455		48.0	48.0			5.55			28.0	10.22
Actuated g/C Ratio	20 20			0.48	0.48						0.28	1445
v/c Ratio				0.46	0.46						0.30	xxt asel
Control Delay				2.7	12.6					15 N 📲	18.0	
Queue Delay	7 5	15 B4 H		1.6	2.4			#450 KB KKT			0.0	- C.C. C. L. C.
Total Delay	3875	Wase		4.4	15.0					Na a 1	18.0	12.0
LOS			400000000000000000000000000000000000000	A	.о.о	(14 (14 (14 (14 (14 (14 (14 (14 (14 (14		nu decembro Bernardo P	undelling (VII)	padin NESS SESSION	В	CONTRACTOR STATE

Lane Group ***	$\infty$ 2	
Lane Configurations		closerr
Ideal Flow (vphpl) Total Lost Time (s)		
Leading Detector (ft)		
Trailing Detector (ft)		751203
Turning Speed (mph) Lane Util. Factor		
Ped Bike Factor		
Frt Flt Protected		254
Satd. Flow (prot)		<b>X</b> 1
Flt Permitted		
Satd. Flow (perm) Right Turn on Red		
Satd. Flow (RTOR)		
Headway Factor Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		orosa Orosa
Volume (vph) Confl. Peds. (#/hr)		74.3
Peak Hour Factor		
Adj. Flow (vph) Lane Group Flow (vph)		
Turn Type		
Protected Phases		
Permitted Phases  Detector Phases		
Minimum Initial (s)	7.0	1563
Minimum Split (s) Total Split (s)	16.0 16.0	
Total Split (%)	16%	
Maximum Green (s)	14.0	
Yellow Time (s) All-Red Time (s)	0.0	
Lead/Lag	Lag	
Lead-Lag Optimize? Vehicle Extension (s)	2.0	
Recall Mode	Ped	24
Walk Time (s) Flash Dont Walk (s)	7,0 7.0	
Pedestrian Calls (#/hr)	50	
Act Effct Green (s)		ere oros
Actuated g/C Ratio v/c Ratio		
Control Delay		
Queue Delay		33
Total Delay LOS		N
<del></del>		_



	<b>≯</b>	-	•	•	-	•	1	<b>†</b>	-	1	<b>↓</b>	4
Lane Group	EBL	EBT	EBR:	WBL	WBT	WBR	NBL	NBT:	NBR	SBL	/ SBT	SBR
Approach Delay		100	164	1111	11.3		<b>#</b> r			A4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18.0	100
Approach LOS			S. MAS. 7-14-0000000 GEOGRAPHICA		В				201240000000000000000000000000000000000		В	CONTRACTOR CONTRACTOR CONTRACTOR
Queue Length 50th (ft)				0	68						47	
Queue Length 95th (ft)				42	101				CONTRACTOR OF THE PROPERTY AND ADDRESS.		83	
Internal Link Dist (ft)		62			55			90			171	
Turn Bay Length (ft)												THE RESERVE OF THE PROPERTY OF
Base Capacity (vph)	3.23			910	1681		100				1012	
Starvation Cap Reductn			WITH STATE OF THE	507	1091	Fig. of Paris No. 9 4 Paris - Victorian concessor		24 (23) 47 (27)		ETWANT AND AN AND AN AND AN AND AND AND AND AN	0	
Spillback Cap Reductn		2.82	111	28	29						2	
Storage Cap Reductn				0	0				III SAIDTAN SAIRWAA A Yeeke		0	
Reduced v/c Ratio	2 356			0.58	0.74		#B /			46.6	0.30	
Intersection Summary		214					A G				<b>M</b>	
The state of the s	her		4411							grant or		
Cycle Length: 100									THE RESIDENCE OF STREET			
Actuated Cycle Length: 1			14.15	FAX:					EE W	1.790		
Offset: 36 (36%), Referer	nced to	phase 1	I:WBTL	., Start d	of Green	)						
Natural Cycle: 50			V E E	1.64		2533	14 I			書 建床		
Control Type: Actuated-C	oordina	ited	14 PMX 15 800 000 000 Abres	AND SOME REPORTED AND AND AND AND AND AND AND AND AND AN				-Toulogic more mecanical	######################################	77.4		
Maximum v/c Ratio: 0.30				885£								
Intersection Signal Delay:		· 4 - 502	all the second		tersecti						Section Service Company	
Intersection Capacity Utili	zation 3	51.7%	1000	IC	U Leve	of Serv	rice A	7. Hadib (2)		31 9 5	744	49, 5
Analysis Period (min) 15												

Splits and Phases: 65: Valenti Way & Beverly Street

<b>♦</b> ø1	<b>#k</b> ø2	<b>▼</b> ø5
5200 Alban Andrews Asia Marine Late Committee of the		926

Lane Group.
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 .

•	•	<b>†</b>	<b>/</b>	<b>/</b>	ļ
WBL 1	NBR.	NBT	NBR 1	SBL	SBT

Movement	WBL	WBR	NBT.	NBR	SBL	SBT			
Lane Configurations	<b>ት</b> ላቸ		<b>ት</b> ት			<b>个</b> 个	o menderar security o more management		
Sign Control	Stop	# 1 1#	Free	64		Free	7 F W		
Grade	0%		0%			0%			
Volume (veh/h)	1	45	470	0	0	1134			
Peak Hour Factor	0.25	0.75	0.85	0.92	0.92	0.92			
Hourly flow rate (vph)	4	60	553	0	0	1233			
Pedestrians									
Lane Width (ft)	AS 25	30.0				FARREI			
Walking Speed (ft/s)			arta o						
Percent Blockage Right turn flare (veh)					8 8/2/2	4.4	5 5 605		TABLE !
Median type	None	Maria de la compansión de	14577.5		S SE TELE		c Easter		42.5
Median storage veh)	INUITE	1.0		1 5 2	341 1272				
Upstream signal (ft)			495			111	5 安装金属	S. Meta. E	642.ES
pX, platoon unblocked	0.73		45 HA						
vC, conflicting volume	1169	276		1 5 69	553		6 <b>6</b> 9 9 1		
vC1, stage 1 conf vol						2535		A SALES AS	32000 840 2#27#8084 8**********
vC2, stage 2 conf vol		4 6 44		131					
vCu, unblocked vol	861	276		CONTRACTOR AND	553				
tC, single (s)	6.8	7.2		4.42	4.1		経復 また		11255
tC, 2 stage (s)	- Names and Associated Supplemental Workshop of					MACCON TO THE MACCON TO THE STATE OF THE STA			
tF (s)	3.5	3.5			2.2		37.86		1012
p0 queue free %	98	91			100				V-25545-1255015-1888
cM capacity (veh/h)	218	681			1027				
Direction, Lane#	WB 1	NB 1	NB 2	SB 1	SB 2	an de la company		dia	
Volume Total	64	276	276	616	616	9 7 8 8 8 8 E			
Volume Left	4	0	0	0	0				
Volume Right	60	0	0	0	0				14 [ 34 ]
cSH	601	1700	1700	1700	1700			a consensation to the consensation of the cons	
Volume to Capacity	0.11	0.16	0.16	0.36	0.36				15.41.5
Queue Length 95th (ft)	9	0	0	_ 0	0			WAR CARD A VIOLENCE CONTROL	
Control Delay (s)	11.7	0.0	0.0	0.0	0.0				
Lane LOS	В	0.0	194 /	0.0		22 300			6203856383635454
Approach Delay (s)	11.7	0.0		0,0	i Eti				
Approach LOS	В								
Intersection Summary				學 医圆	i jagi	er ei dinge	1.4.1		
Average Delay			0.4			By declarity to the colour New Management		88828888888888888888888888888888888888	
Intersection Capacity Ut	ilization		41.3%	IC	CU Leve	l of Service		* A ( ) + ( ) = ( )	15346
Analysis Period (min)			15	A. C.	100 C		W.C. 27.49-20.2.	**************************************	
		r bis		4 7 1 2			SEAL.		五名三年

8: North Washington Street & Medford Street

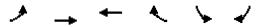
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NBL	NBT	:-SBT	SBR:	SEL	SER	
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(4 <b>.5</b> 0						
				100		85-04s
		- J.U				3
		h i i		None		
	109	497				
						MINERAL
1260	<b>基料水</b> 基			1516	630	
		1 2				201
1019				1359	184	69
4.1				6.8	6.9	
			- Francis		TABLE 100 (100 (100 (100 (100 (100 (100 (100	X832
	計/量數					
	1 E E					200
	- KIDIO -	on W	60.0		CINCLE CONTROL	
The second second second	1000		33,000,000	33.3		<u>24</u>
	A TENER OF STREET		200	CONTRACTOR SERVICE CONTRACTOR CON	The second secon	
Ō	0	Ö	0	13		<b>(3)</b>
1700	1700	1700	1700	158		200
	2 / A / A / A / A / A / A / A / A / A /			CONTROL OF THE PROPERTY OF THE		
					A Description of the second of	85 <u>8</u> 1
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0.0		0.0				
L-A-V-00000-DEEDBOOK-CL-FI				D		23
4.4	ALC:	la e		44.6		
		0.6				#
lization	- 4	20,70	IC	U Level	of Service A	
		15				Longer
	0 0.75 0 0.75 1260 1019 4.1 2.2 100 510 NB4 252 0 0 1700 0.15 0	109 0.75 1260  1019 4.1  2.2 100 510  NBM NB 2 252 252 0 0 0 0 1700 1700 0.15 0.15 0 0 0.0 0.0		Free Free 0% 0% 0% 0% 0 464 1134 0 0.75 0.92 0.90 0.63 0 504 1260 0 44 12.0 4.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Free Free Stop	Free Free Stop  0% 0% 0%  0 464 1134 0 19 12  0.75 0.92 0.90 0.63 0.92 0.92  0 504 1260 0 21 13  4  12.0  4.0  0 109 497  0.75 0.75 0.75 0.75 0.75  1260 1516 630  None  1019 1359 184  4.1 6.8 6.9  2.2 3.5 3.3  100 81 98  510 107 629  NBM NB/2 SB1 SB2 SE1  252 252 630 630 34  0 0 0 0 0 21  0 0 0 0 0 13  1700 1700 1700 1700 158  0.15 0.15 0.37 0.37 0.21  0 0 0 0 0 13  1700 1700 1700 1700 158  0.16 0.15 0.15 0.37 0.37 0.21  0 0 0 0 0 0 19  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0 0 0  0 0 0 0 0 0 0 0 0 0 0 0 0 0  0

	-	*	€	<b>←</b>	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<del>ሳ</del> ጉ			414	¥		3/12/12/12/12/12/12/12/12/12/12/12/12/12/
Sign Control	Free			Free	Stop		
Grade	0%		100 mar #100 mar 100 m	0%	0%		
Volume (veh/h)	637	43	50	840	1 + 6	47	
Peak Hour Factor	0.91	0.68	0.63	0.97	0.88	0.80	
Hourly flow rate (vph)	700	63	79	866	7	59	
Pedestrians					Marrows	AND HELD MUNICIPALITY CONTRACTORS AND ADMINISTRATION AND ADMINISTRATIO	
Lane Width (ft)			<b>高量主要</b>		417		
Walking Speed (ft/s)			7-18X/87-2-00-00-00-00-00-00-00-00-00-00-00-00-0	N 442-1 NO.			
Percent Blockage				化氢氯	16.8%	\$0.810	
Right turn flare (veh)					X.		
Median type	LAFI			7.3 E	None		
Median storage veh)	443		1000	204			
Upstream signal (ft) pX, platoon unblocked	.440	2.6 2.	0.88	204	0.92	0.88	
vC, conflicting volume			763		1323	382	
vC1, stage 1 conf vol			700		. 1020	JUL	
vC2, stage 2 conf vol			75 A A A D				
vCu, unblocked vol		K Dronii di	594	10.00	992	160	
tC, single (s)		1 5 5	4.2	4.5.5	7.0	7.3	
tC, 2 stage (s)		V04819842500000000			20,000	2000	
tF (s)			2.2	1. 摄 2.	3.6	3.5	
p0 queue free %			91	ALV SILV STANCES	96	92	200 2 to 100
cM capacity (veh/h)		复制体 3	854		193	709	,我们就是1000年的1000年,1000年,1000年,1000年,1000年,1000年
Direction, Lane # 14 14 14 14	EB 1	EB2	WB 1	WB2	NB1		
Volume Total	467	297	368	577	66		
Volume Left	0	0	79	0	7		
Volume Right	0	63	0	0	59		
cSH	1700	1700	854	1700	555		
Volume to Capacity	0.27	0.17	0.09	0.34	0.12		
Queue Length 95th (ft)	0	0	8	0	10		
Control Delay (s)	0.0	0.0	2.9	0.0	12.4		
Lane LOS			Α		В		
Approach Delay (s)	0.0	重要量:	1.1		12.4	2 新元星	
Approach LOS					В		
Intersection Summary			73.1				
Average Delay	gogowa argeniara con	UNIT SOME ALANDON	1.1	T. Commission			
Intersection Capacity Ut	ilization		57.0%	: 1 <b>- 1</b> (	U Leve	l of Serv	ice B
Analysis Period (min)			15				
	200				and i		

	<b>→</b>	*	€	-	7	7				
Movement	EBIT	EBR	WBL	WBT	NBL	NBR		AND THE STATE		
Lane Configurations	ተተጉ			414						
Sign Control	Free		100	Free	Stop					
Grade	0%			0%	0%	PPP100 111 - 11 - 14 - 14 - 14 - 14 - 14 -			A. I.I.	DE: 34 DOGE 20000
Volume (veh/h)	409	12	16	733	0	0	Fra Lieu			
Peak Hour Factor	0.83	0.92	0.92	0.78	0.70	0.89				
Hourly flow rate (vph)	493	13	17	940	0	0 4			8 2 E E P E	
Pedestrians		SERVICE A Mickey I have relaying a conserva-			324			MINISTER AND A COMPANY OF A COM		
Lane Width (ft)					0.0					
Walking Speed (ft/s)	COCTOS - No regular front ministratives		DORONOM BONZONANI TONANA	OFFICIALLY WAY STEED AN	4.0				THE PROPERTY COLUMN TO THE PARTY OF THE PART	~~~~
Percent Blockage		插手垫.	43.6	11 4	0			12225		
Right turn flare (veh)			77 83 <b>0 %</b> 12 77 83 8 8 8 8 8 8	No. 200					57738104 Cidae 4	
Median type	大人基金			17 % 7	None					
Median storage veh)								Contains the same and the same	VX.15.44.01.04.14	2007001.235
Upstream signal (ft)	387			309		ABAN:				
pX, platoon unblocked			000		4200	405		Parameter Company		
vC, conflicting volume vC1, stage 1 conf vol		3 E E.	830		1328	495				
vC1, stage 1 conf vol				120 200 200				20, 2		14 41-1
vCu, unblocked vol			830	W.E	1328	495				
tC, single (s)			4.1		6.8	7.1		· · · · · · · · · · · · · · · · · · ·		
tC, 2 stage (s)			T. I		0.0		E Port State			7.12
tF (s)			2.2		3.5	3.4				
p0 queue free %	10 mm		98	CARL SEARCH	100	100			1.63	
cM capacity (veh/h)			811	1.4	146	505	· Department	医水体乳毒		
Direction, Lane:#			EB.3	d	Action to talk one would be with the first of the					NG.
Volume Total	197	197	112	331	626					
Volume Left	0	0	0	17	0					
Volume Right	1700	0	13	0.44	0	a lakeling				
cSH	1700	1700	1700	811	1700					
Volume to Capacity  Queue Length 95th (ft)	0.12	0.12 0	0.07 0	0.02	0.37					31.4
Control Delay (s)	0.0	0.0	0:0	0.7	0.0				alia da sa	
Lane LOS	v.u	υ.υ	0.0	0.7 A	0.0		The second second			
Approach Delay (s)	0.0		4 E A E	0.3	5 V 1 3					
Approach LOS		B 10 / 10 / 10								
										entrikenen.
Intersection Summary		4.14.4								
Average Delay			0.2						COMPANY OF STREET	200000000000000000000000000000000000000
Intersection Capacity Ut	ilization	F 46 1	35.0%	· IC	CU Leve	of Service		A		1
Analysis Period (min)			15	2 3 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	MISS SHIPPERS AND INCOME SHOULD HAVE					

	۶	<b>→</b>	•	•	♣~-	•	4	<b>†</b>	<i>&gt;</i>	<b>/</b>	ļ	4
<b>Movement</b>	EBL.	EBT	EBR	WBL	WBT-	WBR	-NBL+	NBT	NBR	SBL	SBT	SBR
Lane Configurations					<b>↑</b> ↑		7	<b>†</b>				7
Sign Control	1 116	Stop			Stop	$b \in \mathcal{F}$		Stop		drift.	Stop	1/4
Volume (vph)	0	0	0	0	34	28	6	19	0	0	0	88
Peak Hour Factor	0.78	0.92	0.74	0.92	0.92	0.92	0.92	0.78	0.92	0.92	0.71	0.92
Hourly flow rate (vph)	0	0	0	0	37	30	7	24	0	0	0	96
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 114							
Volume Total (vph)	25	43	7	24	96							
Volume Left (vph)	0	0	7	0	0	33.5				表质量		1.59
Volume Right (vph)	0	30	0	0	96						CHARLES AND THE CONTROL OF THE PROPERTY OF	
Hadj (s)	0.00	-0.50	0.50	0.14	-0.60	P/4 /3 /		1826		3 16 2		
Departure Headway (s)	4.8	4.3	5.2	4.9	4.1	4,						
Degree Utilization, x	0.03	0.05	0.01	0.03	0.11	1453				1.685	植.	
Capacity (veh/h)	732	809	670	720	863							
Control Delay (s)	6.7	6.3	7.1	6.8	7.6							
Approach Delay (s)	6.5		6.9	AT AT A TANK A THE PARTY OF THE	7.6		CORP. HT THE PART AND THE CO.					THE PART OF PROPER VALUE OF
Approach LOS	Α	医多型素	7 A	155	Α		1.1.1.1			近 集装		
Intersection Summary			1				1000		. 5.4m	i di di		
Delay			7.1	1 45	113.	174						
HCM Level of Service			Α	Additional and Statement Street Work (A) Comment								
Intersection Capacity Uti	lization	48.64	40.0%	IC	CU Leve	l of Sen	vice		A	8829	44	
Analysis Period (min)			15									
		(ini. 253	:EEE	BAATA							FEE.	

	<b>-</b>	•	₩		7	7					
Vlovement	EBT	#EBR	WBL	WBT	NBL	NBR			44		
Lane Configurations	ተተጉ		ሻ	ተተ							
Sign Control	Free			Free	Stop						- 養養
Grade	0%			0%	0%		OL XIXILLI ZAKAL NYOS MES		**************************************		
Volume (veh/h)	410	297	16	739	0	. 0	最新的	55/L	<b>439</b> 4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	MARKET A. C. C. C. L. L. L. C. C. L. L. C.	nexxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			
Hourly flow rate (vph)	446	323	17	803	0	0	III a				-54.5
Pedestrians					330			TO PERSONAL PROPERTY AND ADDRESS OF THE PROPERTY AND ADDRESS OF THE PERSONAL PROPERTY		er a commencia de c	
Lane Width (ft)	<b>#</b> 1 ( ) (				0.0					AJJ.	1 4 2
Walking Speed (ft/s)					4.0						
Percent Blockage				1.00	0.	BAR FI	通過	3.5.5 PA	1485		
Right turn flare (veh)			- XIV-M GOT/GOTING			F12117387524-775		TROUTERS TO CONTROL OF THE STATE STA			
Median type				4.84:	None		404		1 14 2		111
Median storage veh)			779755780879379899						TOOLAGE NOODSTOODS TROU NO AMANGEMENT		
Upstream signal (ft)	132			564	7717						
pX, platoon unblocked			0.96	71.	0.96	0.96			·		
vC, conflicting volume	FEER		1098	113 3	1373	640	J. FB.		A 34 4	#44	
vC1, stage 1 conf vol	7.	in and the second									
vC2, stage 2 conf vol			4000		4000	F45					
vCu, unblocked vol			1022		1308	545				1/4	
tC, single (s) tC, 2 stage (s)	1825		4.1	1.31	6.8	6.9	\$ 37.37	Tara da	445	41.5	1000
tF (s)			2,2	19.52.1	2.5	3.3					
p0 queue free %			2.Z 97	C.B.M. i	3.5 100	ა.ა 100					7.2
cM capacity (veh/h)	403, 300		661		144	469					
•	5.3.3		Section Control Control			economic and the second	6 4 37	i da estado de			
Direction, Lane #	#EB 1	EB2	EBI3	WB 1	WB2	WB3		4,41			<b>h</b> it is
Volume Total	178	178	412	17	402	402	Kala		54.2		
Volume Left	0	0	0	17	0	0					
Volume Right	0	0	323	0	0	. 0	新規會				154
cSH	1700	1700	1700	661	1700	1700					
Volume to Capacity	0.10	0.10	0.24	0.03	0.24	0.24					
Queue Length 95th (ft)	0	0	0	2	0	0			. J. C. M.A. Harris construction and the second		
Control Delay (s)	0.0	0.0	0.0	10.6	0.0	0.0				Ned the	
Lane LOS		X 172		В	-//		X4Pc No Procedure programs				
Approach Delay (s)	0.0			0.2				5 5 7 20		2.000	
Approach LOS											
Intersection Summary		de ala	i ji s	17.35	14.0						
Average Delay			0.1								
Intersection Capacity Uti	lization	1 2	23.8%	IC	U Leve	l of Service		Α			5.4
Analysis Period (min)	217		15	oct Utilization	zonen (j. 176). (j. 176).	38.44 E k 8 5 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	40-65 W.M.				
				7 5 E i					5 <b>3</b> 5 5 5		



		-								
Movement	EBL <sub>2</sub>	EBT		*WBR	SBL	SBR				
Lane Configurations			<b>ተ</b> ጮ		SECTION STATES		ESERGE SECURITY SCREENS IN NOTICE SAN A ANTONIO STRONG SECURITY			
Sign Control		Free	Free		Stop			435		
Grade		0%	0%		0%	Harris and the second of the s	MINISTER MOVEMBER OF STREET	s la Professora a consessora menerale		
Volume (veh/h)	0	0	202	183	0	0				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		5972-4100-E888-000000-8888-000		
Hourly flow rate (vph)	0	0	220	199	0	0				
Pedestrians					310					
Lane Width (ft)	4.47.76.5		6.4448	支着数	0.0					
Walking Speed (ft/s) Percent Blockage				-0. TEX	4.0 0			1. X 2. 1		
Right turn flare (veh)			#455E".	BR D	U					1 355 5
Median type				- Apr - 35	None					
Median storage veh)	4.9	1 2 5 5	3 37 3		none			er falle tillet.		
Upstream signal (ft)			142							
pX, platoon unblocked	0.95		142	拉工 焦。	0.95	0.95				
vC, conflicting volume	728				629	519				
vC1, stage 1 conf vol	120		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ULU .	U I U - I - I - I				A BUSE
vC2, stage 2 conf vol					ter and the					
vCu, unblocked vol	660	A. 7. 2. 25 SE			555	440	51 E		No.	
tC, single (s)	4.1	6.4		7.7 % 8	6.8	6.9		1.54		+ Jacks
tC, 2 stage (s)		28.72.9							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
tF (s)	2.2	1111	465	清洁层	3.5	3.3				4.31
p0 queue free %	100				100	100	CONTRACTOR OF STATE O			
cM capacity (veh/h)	890				442	542		46767		5 5 4
Direction, Lane #	WB 10	W Pko								
Volume Total	146	272			4 4 4				47.44.05.36.94	
Volume Left	0	0	多级人能					146		
Volume Right	0	199								
cSH	1700	1700		117 15 1				1 2 4 12		
Volume to Capacity	0.09	0.16								
Queue Length 95th (ft)	0	0	andrest 25							
Control Delay (s)	0.0	0.0	121 15	8.6 E						
Lane LOS	•		8525 BV 1 050	// http://de				20 Sept. 18		
Approach Delay (s)	0.0				1365	Karati			757.56	
Approach LOS			Par Arraman de la Composition	Devisore appears	,			5,000		
	3,635									
Intersection Summary			0.0		( S. S. (S.				Marie Chen	
Average Delay Intersection Capacity Uti	lization		0.0	- 10	(1 1 1 ±≤)	of Comitati		۸		
Analysis Period (min)	nzadon		8.9% 15	ıC	U Leve	of Service	16	А		
Analysis Fellou (IIIIII)			10					. A 1 5 3 E		
N/GSCC-000			100		MISSOCIATE CONTRACTORS	73,240 Comment of the comment	species in Proceedings of the Control of the Contro	THE RESERVE OF THE PARTY OF THE	androver of the Propries in the UK	A CONTROL OF THE PARTY OF THE P



Movement	· WBL	WBR.	NBT.	NBR	√SBI =	SBT-	
Lane Configurations	ካ					414	
Sign Control	Stop	LEYE	Free			Free	
Grade	0%		0%			0%	
Volume (veh/h)	34	0	0	0	79	234	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	37	0	0	0	86	254	
Pedestrians			NAME OF THE PERSON OF THE PERS	CPST NCTT TO MAKE HER HOUSE			4379/3/4/414/7/2 (SIII) = 6777/77 1/2/2/2/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/
Lane Width (ft)	95£	3 L 6		1.5			
Walking Speed (ft/s)			5				
Percent Blockage Right turn flare (veh)	45	\$ ## S	ere e	file i			
Median type	None		and de				
Median storage veh)	INOHE	5.5					
Upstream signal (ft)			251				
pX, platoon unblocked							
vC, conflicting volume	299	-0		66 WB	0	1111	
vC1, stage 1 conf vol		Notes and the second			m magazine (person) (person) (person) (ber	NAMES OF THE PARTY	
vC2, stage 2 conf vol		5 15	FAE.				
vCu, unblocked vol	299	0			0	**************************************	
tC, single (s)	6.8	6.9	ar e	88.55	4.1		
tC, 2 stage (s)	9.5	0.0			0.0		
tF (s) p0 queue free %	3.5 94	3.3 100			2.2 95	F # 803 -	
cM capacity (veh/h)	639	1091		1	95 1636		
Wight to Court bein Autorite at 2021 and Autor Court being your and an account	A_A_A		HINESCOLUTION CONTRACTOR		1030	Fight Even is	
Direction, Lane#	WB 1	SB 1	THE PERSON NAMED IN COLUMN TWO	474-174	1344	0.00	and the second the second the second
Volume Total	37	171	170	交易基本		1 1 1 1 1	The second of th
Volume Left	37	86	0				
Volume Right	0	1000	4700				
cSH Volume to Capacity	639 0.06	1636 0.05	1700 0.10				
Queue Length 95th (ft)	9.00 5	4	0.10				
Control Delay (s)	11.0	3.9	0.0	55.66		<b>新工艺</b>	
Lane LOS	В	Ā	E 39.9	210 200		38 N. S. S. S. S. S.	
Approach Delay (s)	11.0	1.9			1886		
Approach LOS	В	Maria Cara Cara Cara Cara Cara Cara Cara	7 x 12 x 10	S-004-C-254-S-E-3-X-9-2003			
Intersection Summary							
Average Delay			2.8	ere carte dip Es			
Intersection Capacity Uti	lization	1 344	18.8%	- IC	U Level	of Service	ce
Analysis Period (min)			15		iles Vilsariinasiesi.		
			1 12			PERE	

		<b>→</b>	-	-	*	◀
Movement	W EBL	HEBI	WBT:	WBR	SBL	SBR
Lane Configurations			<b>ተ</b> ቀጉ			
Sign Control		Free	Free	organia.	Stop	
Grade	NOT THE RESIDENCE OF THE PARTY	0%	0%	,	0%	
Volume (veh/h)	0	0	580	69	0	4.
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	630	75	0	$m{A}_{i,j}$
Pedestrians	AND CALL OF THE RESERVE	2356 8260 X 17 X 18 X	7.5752 W. E598 W. E			
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh) Median type					None	
Median storage veh)					None	
Upstream signal (ft)		135	78			
pX, platoon unblocked	10 mm (1)	100				
vC, conflicting volume	705	1235			668	248
vC1, stage 1 conf vol			B #2 3			
vC2, stage 2 conf vol			连锁 并			
vCu, unblocked vol	705			DECEMBERS SERVICES OF S	668	248
tC, single (s)	4.1	104	Bay.		6.8	6.9
tC, 2 stage (s)				O. N. X. SERGO (MARIO DE SERVIZIONES DE X. SERVIZIONA DE SERVIZIONES DE X. SERVIZIONA DE SERVIZIONES DE X. SERVIZIONES D	PALON AND CHOICE BARROOM CONTRACTOR	
tF(s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	902				396	759
Direction, Lane#	WB1	WB2	WB 3	SBA		
Volume Total	252	252	201	4		
Volume Left	0	0	0	0		
Volume Right	0	0	75	4	4 5 14	
cSH	1700	1700	1700	759	ANGEL PLACE IN COMMEN	
Volume to Capacity	0.15	0.15	0.12	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	9.8		
Lane LOS			V.19442-504-1-104-1981	Α		
Approach Delay (s)	0.0	8 B 4 S	. +	9.8	i pai	
Approach LOS				Α		
Intersection Summary		1. 7. 2	Marks 74			
Average Delay			0.1			
Intersection Capacity Ut	ilization		22.7%	IC	U Leve	of Service A
Analysis Period (min)			15		ATTACHMENT ALTERNATIONS	
					STEEL SERVICE STATE	

0.77

1%

416

281

Split

2

2

25.3% 25.3%

8.0

32.0

38.0

34.0

3.0

1.0

Lag

3.0

Max

7.0

0

21.0

34.0

0.23

0.76

68.2

0.0

0.87

1%

162

297

8.0

32.0

38.0

34.0

3.0

1.0

Lag

3.0

Max

21.0

34.0

0.23

0.78

69.3

0.0

7.0

0

0.38

0%

16

16

2

2

8.0

32.0

38.0

34.0

3.0

1.0

Lag

3.0

Max

21.0

34.0

0.23

0.05

18.2

0.0

7.0

0

25.3%

Perm

0.89

0%

174

174

5

5

8.0

25.0

25.0

21.0

3.0

1.0

Lead

3.0

Max

14.0

21.0

0.14

1.14

172.2

0.0

7.0

0

16.7%

Perm

0.90

0%

187

187

5

5

8.0

25.0

25.0

16.7%

21.0

3.0

1.0

3.0

Max

7.0

0

56.0

0.37

1.41

0.0

226.9

14.0

21.0

0.14

0.73

78.7

0.0

Lead

0.70

1%

896

896

56

56

60.0

40.0%

pt+ov

0.84

0%

0

0

0.0

0.0% 34.7%

0.91

2%

720

890

8.0

25.0

52.0

48.0

3.0

1.0

Lead

3.0

7.0

0

14.0

48.0

0.32

0.84

54.6

0.6

C-Max

0.69

1%

170

0.0

0

0.90

1%

286

286

6

1

6

8.0

25.0

35.0

31.0

3.0

1.0

Lag

3.0

Max

7.0

0

14.0

79.0

0.53

0.71

44.1

0.0

0.0% 23.3% 58.0% 23.3%

D.P+P

0.79

1213

1213

16

16

87.0

1%

0.69

0%

483

483

6

8.0

25.0

35.0

31.0

3.0

1.0

Lag

3.0

Max

7.0

14.0

83.0

0.55

0.64

27.9

0.0

0

custom

Lanes,	Volumes,	Timings
HSH A	ssociates	

Heavy Vehicles (%)

Lane Group Flow (vph)

Adj. Flow (vph)

Protected Phases

**Permitted Phases** 

Detector Phases

Minimum Initial (s)

Minimum Split (s)

Maximum Green (s)

Lead-Lag Optimize? Vehicle Extension (s)

Flash Dont Walk (s)

Act Effct Green (s)

Actuated g/C Ratio

Pedestrian Calls (#/hr)

Total Split (s)

Total Split (%)

Yellow Time (s)

All-Red Time (s)

Lead/Lag

Recall Mode

v/c Ratio

Control Delay

Queue Delay

Walk Time (s)

Turn Type

Frt

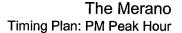
83.0

0.55

0.69

26.7

0.1



		<b>-</b>	•	1	7		7	ı		*	<b>\</b>	*
Lane Group	HEBU	<b>KEBT</b>	EBR	WBD	WBT	WBR	NBL	NBT#	NBR //	SBL	SBT	SBR
Total Delay	68.2	69.3	18.2	172.2	78.7	226.9	11.1	55.2		44.1	26.7	27.9
LOS	Е	E	В	F	Ε	F	220,4200,200,200,000,000	E	CONTRACTOR OF THE STATE OF THE	D	С	С
Approach Delay		67.4			197.3	74.07		55.2		4 # 100 1 * 1 = 1	29.5	
Approach LOS		E	1 11 11 11 11 11 11 11 11 11 11 11 11 1		F	TO STATE OF THE PARTY OF THE PA		E	AND STREET PAR 18-1-9-9 C. 14-304 CO.		С	#K************************************
Queue Length 50th (ft)	272	289	0	~199	178	~1138		418		195	454	347
Queue Length 95th (ft)	320	392	2	#351	#281	#932		506	and a company of the way of the w	305	435	317
Internal Link Dist (ft)	医环囊体	229			103			31		100	188	
Turn Bay Length (ft)												
Base Capacity (vph)	372	383	323	152	257	636		1062	4.5	405	1768	759
Starvation Cap Reductn	0	0	0	0	0	0		29	Annual Section Control of the Contro	0	0	0
Spillback Cap Reductn	0	0	2	0	0	0	1201	0		0	48	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.76	0.78	0.05	1.14	0.73	1.41		0.86		0.71	0.71	0.64
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							The second secon	

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 83.8

Intersection Capacity Utilization 94.4%

Intersection LOS: F
ICU Level of Service F

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

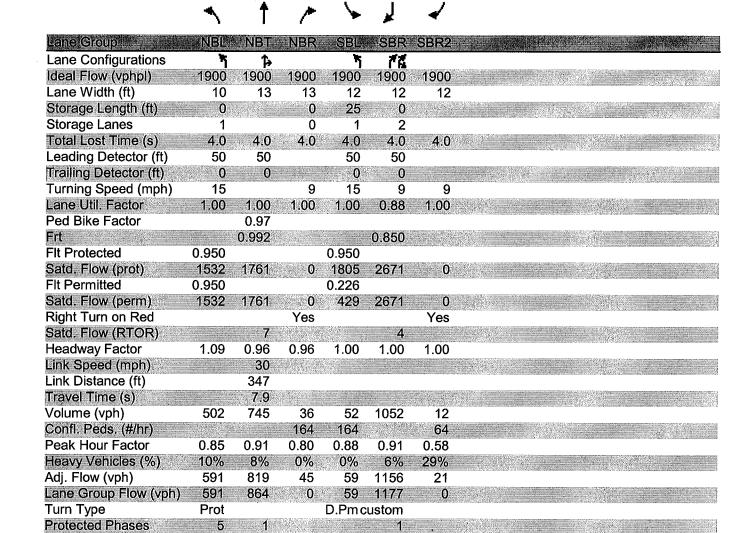
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 29: Causeway Street & North Washington Street

<b>1</b> ø1	<b>♣</b> ø2	<b>4</b> <b>Ø</b> 5	<b>№</b> ø6
52/3006/50/00/00/00/00 PER STORY OF STORY OF STORY		225 (c)	356



1

1

8.0

25.0

74.0

69.0

3.0

2.0

2.0

7.0

8.0

70.0

0.70

0.63

0

0.0

0.0%

8.0

25.0

74.0

0.0% 74.0% 74.0%

69.0

3.0

2.0

2.0

7.0

8.0

70.0

0.70

0.20

0

C-Max C-Max

0.0

Lanes, Volumes,	<b>Timings</b>
<b>HSH</b> Associates	

Permitted Phases

Detector Phases

Minimum Initial (s)

Minimum Split (s)

Maximum Green (s)

Lead-Lag Optimize? Vehicle Extension (s)

Flash Dont Walk (s)

Act Effct Green (s)

Actuated g/C Ratio

Pedestrian Calls (#/hr)

Total Split (s)

Total Split (%)

Yellow Time (s)

All-Red Time (s)

Lead/Lag

Recall Mode

v/c Ratio

Walk Time (s)

5

26.0% 74.0%

8.0

25.0

74.0

69.0

3.0

2.0

2.0

7.0

8.0

70.0

0.70

0.70

0

8.0

26.0

26.0

21.0

3.0

2.0

2.0

7.0

9.0

22.0

0.22

1.75

0

None C-Max



Lane Group 🖖 🙌 🔌	NBL	NBT	NBR' SBL	SBR	SBR2
Control Delay	374.8	13.5	7.1	9.9	
Queue Delay	9.5	2.1	0.0	147.7	
Total Delay	384.2	15.6	7.1	157.6	
LOS	F	В	Α	F	edecilida Markalaina diskinosan mon N.C.W.
Approach Delay	语 [2]	165.3		1111	BE TE
Approach LOS		F			
Queue Length 50th (ft)	~580	210	11	198	整 1 发 1
Queue Length 95th (ft)	#739	362	27	263	a
Internal Link Dist (ft)	2255	267	05	4	
Turn Bay Length (ft)	007	4005	25	4074	
Base Capacity (vph)	337	1235	300	1871	
Starvation Cap Reductn	U	229	0	188	
Spillback Cap Reductn	4	39	0	982	A WAR
Storage Cap Reductn	4 77	0.00	0.20	1 20	
Reduced v/c Ratio	1.77	0.86	0.20	1.32	

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 85 (85%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.75

Intersection Signal Delay: 158.5 Intersection LOS: F
Intersection Capacity Utilization 71.7% ICU Level of Service C

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 332: Valenti Way & North Washington Street



		1	•	,-		•	
Lame Group	NBL	NBT	SBT	SBR	SEL	SER	
Lane Configurations			ተተተ			<b>ተተተ</b>	
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	444	14 14	50			50	
Trailing Detector (ft)		Contract Contract	0			0	
Turning Speed (mph)	15			9	15	9	
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.76	
Frt		rd ag		300		0.850	
Flt Protected							
Satd. Flow (prot)	0	0	4893	0	0	3409	and the second s
Flt Permitted			Name of Street, Street				
Satd. Flow (perm)	0	0	4893	0	0	3409	
Right Turn on Red				Yes	N SV (College) Appendix	Yes	
Satd. Flow (RTOR)	4.00	4.00	4 00	4.00	4.00	71	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)		30	30		30 470		
Link Distance (ft) Travel Time (s)	- 7 7 1020	397	273 6.2		170	7 - 1 / E - 1	
	0	9.0 0	0.Z 1052		3.9	568	
Volume (vph) Peak Hour Factor	0 0.92	0.92	0.91	0 0.92	0 0.92	0.91	
Heavy Vehicles (%)	0.92	0.92	6%	0.92	0.92	8%	
Adj. Flow (vph)	0 /8	0 /0	1156	0 /8	0 %	624	
Lane Group Flow (vph)	0	0	1156	0	0	624	
Turn Type	ene w		1100			ustom	
Protected Phases		7-02	5	35.6E		1	
Permitted Phases		3.13 E	2 1 2			3 48 9	
Detector Phases			5			1	
Minimum Initial (s)			8.0	1 1		8.0	
Minimum Split (s)			20.0		-	20.0	
Total Split (s)	0.0	0.0	48.0	0.0	0.0	52.0	
Total Split (%)	0.0%	0.0%	48.0%	0.0%	0.0%	52.0%	
Maximum Green (s)	14.64		44.0		1/61	48.0	
Yellow Time (s)			3.0		2021-12 07 AAAAAA 1880 1880 1	3.0	200 April 200 Ap
All-Red Time (s)		1 84.	1.0		444	1.0	
Lead/Lag	1000 X 100 X		REF CANONIC WAYS TO STATE				7 3 N 7 1 1 min 4
Lead-Lag Optimize?				潜走。			
Vehicle Extension (s)	<del>.</del>	Energy and the state of the sta	2.0	description accounts to the end of the	47.00° 0.104.4 C.12.00 X.107.000 X.0000000	2.0	THE ATTEMPT AND A TO DATE AND A TOTAL PROPERTY.
Recall Mode	1554		Ped			C-Max	
Walk Time (s)	1.00		7.0	EPAGES LETENCTURE LE	XXX \$1-748 WARRING	****	
Flash Dont Walk (s)			1.0		) in the second		
Pedestrian Calls (#/hr)			0		TANK SERBERGAN	00.0	
Act Effet Green (s)	3 E # F		28.1			63.9	
Actuated g/C Ratio			0.28			0.64	
v/c Ratio			0.84	31/3		0.28	
Control Delay			53.6		10 CT 2 THE	3.0	
Queue Delay			1.1	trict of		0.4	
Total Delay LOS		(60.751/2513)K	54.7 D	e e e e e e e e e e e e e e e e e e e		3.4	
Approach Delay			ט 54.7			Α	
Approact Delay			J4.1				

The Merano



Lame Group		SBT	SBR SELINSER
Approach LOS		D	
Queue Length 50th (ft)		294	23
Queue Length 95th (ft)		341	29
Internal Link Dist (ft)	317	193	90
Turn Bay Length (ft)			
Base Capacity (vph)		2153	2205
Starvation Cap Reductn		702	1037
Spillback Cap Reductn		300	620
Storage Cap Reductn		0	0
Reduced v/c Ratio		0.80	0.53

Intersection Summary
Area Type: Other
Cycle Length: 100

Actuated Cycle Length: 100

Offset: 4 (4%), Referenced to phase 1:SER, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 36.7

Intersection Capacity Utilization 40.2%

Intersection LOS: D

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4120: North Washington Street & Beverly Street



	<b>y</b> -	4	*1	<b>†</b>	<i>&gt;</i>	-	ļ	لِر	<b>*</b>	/*	
Láne Group	WBL.	WBR	NBL.	NBT	NBR	SBL	M SBT	SBR	NEL	, NER	
Lane Configurations		7*		<b>ተ</b> ተ					ሻሻ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	TEAR
Leading Detector (ft)	OUROSENSATION NATIONAL PROPERTY OF A	50		50		INVESTIGATION A SELECT AN APPROXIMATION			50		
Trailing Detector (ft)		0	100	0		1 35	<b>北京</b> 王		0	<b>:4</b> 75	10 All 10
Turning Speed (mph)	15	9	15	200	9	15	A CONTROL MINISTER	9	15	9	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	Late Company
Frt		0.865				40************************************	15.75				150 A 1 4 7 7 5 5 5 5 5 5 6 6 6 7 5 6 6 6 7 5 6 6 6 7 5 6 6 6 7 5 6 6 7 5 6 6 7 5 6 6 7 5 6 7 6 7
Fit Protected	^	4750	0	2574	0			_	0.950		
Satd. Flow (prot) Fit Permitted	0	1753	0	3574	0	0	0	0	3400	0	
Satd. Flow (perm)	0	1753	0	3574	0	0	0	0	0.950 3400	0	
Right Turn on Red		Yes	U	3314	No:	U	U .	No	No	U	
Satd. Flow (RTOR)		107		2 /6 3	140	A 6 .E.		1110	· TINO	Sestron	
Headway Factor	1.00	0.92	1.00	1,00	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30	U.U_	,,,,,	30			30	1.00	30	1.00	- F. (19)
Link Distance (ft)	264			579			347		320	ar de	
Travel Time (s)	6.0		Property Control	13.2			7.9		7.3		
Volume (vph)	0	55	0	954	0	0	0	0	264	0	8
Peak Hour Factor	0.92	0.67	0.92	0.88	0.92	0.92	0.92	0.92	0.69	0.92	AND 4 - 94-245 4 To 10-10-10-10-10-10-10-10-10-10-10-10-10-1
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	0%	3%	0%	
Adj. Flow (vph)	0	82	0	1084	0	0	0	0	383	0	CONT. A DE CONTROL DE LA CONTROL DE LA CONTROL DE CONTR
Lane Group Flow (vph)	0	82	0	1084	0	0	0	0	383	0.4	101441
Turn Type	C	ustom		EVENT YOUR TON TON TO THE TANK		THE THE STORY STORY AND ADDRESS AND ADDRESS			Prot		
Protected Phases	100	5		1	12.24	1741			6		医乳头 白蓝
Permitted Phases			2X200000000000000000000000000000000000			SVVAE VALUE SEE					
Detector Phases		5		1		al E			6		1 7 32
Minimum Initial (s)		8.0 13.0	E21/12/10/10	8.0				100 N 200 N M 200	8.0		25.77.58 Sub-services 25.50
Minimum Split (s) Total Split (s)	0.0	14.0	0.0	13.0 53.0	0.0	0.0	0.0	0.0	13.0	0.0	114
Total Split (%)	0.0%		0.0%		0.0%	0.0%	0.0%	0.0%	33.0	0.0 0.0%	
Maximum Green (s)	0.070	9.0	U.U /0	48.0	0.076	U.U /6	U.U /0	U.U /6	28.0	0.070	
Yellow Time (s)	Taran da da san	3.0	LESK.	3.0				6.4.1	3.0		
All-Red Time (s)		2.0		2.0		The sale of the		AFRICA COLO	2.0		
Lead/Lag		Lead							Lag		CE MARIE
Lead-Lag Optimize?	Parallel of Control (Control	Yes		, and the second second	E 10 10 Y / 15 15 F 10 15				Yes		3.54
Vehicle Extension (s)	1111	2.0	7.4	2.0			<b>集集</b> (4)		2.0		
Recall Mode		None	(	C-Max	www.eecoegraphotologicals231326				None	enem summer at the PS 15 Test	e main of delicably position of the second
Act Effct Green (s)		9.0		65.8	<b>1</b> 4.63	不会最	M F	- 5 (1)	15.8		
Actuated g/C Ratio		0.09	M-10-10-10-10-10-10-10-10-10-10-10-10-10-	0.66	and the second second second	**************************************			0.16	(Fib.4. D. 19864233	
v/c Ratio		0.32	133	0.46					0.71		
Control Delay		8.4	2000 F-120-F-120-1-110-1-1	9.6	Deliver and the second		KERES VALIDSDANSSKORAV - P		47.3	.M.2007 .Whiteparameter 100	
Queue Delay		0.2	請責任	0.3	1888	<b>第1</b> 0	4.51	43.4	0.0		

Queue Length 50th (ft)

8.5

Α

0

10.0

10.0

234

Α

Α

Total Delay

Approach Delay

Approach LOS

LOS

D

D

47.3

47.3

120

The Merano

The Merano

<u>r</u>	1	*	<b>†</b>	<i>&gt;</i>	<b>\</b>	Ţ	لير	<b>*</b>	/
				•			-	*	

Intersection LOS: B

Earne Group	WBL WBR N	BL NBT NBR	SBL* SBT S	BR NEL N	ER FULL BY
Queue Length 95th (ft)	5	m218	AMERICAN STREET, STREE	118	
Internal Link Dist (ft)	184	499	267	240	
Turn Bay Length (ft)				小型 海 海鱼	
Base Capacity (vph)	272	2350		986	
Starvation Cap Reductn	0.0	590		0 20	
Spillback Cap Reductn	19	636		0	CAMEROCKIC PARAMETERS NOT CONTROL OF CONTROL
Storage Cap Reductn	0	0		0	
Reduced v/c Ratio	0.32	0.63		0.39	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 43 (43%), Referenced to phase 1:NBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 19.1

Intersection Capacity Utilization 40.6%

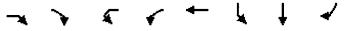
ICU Level of Service A

Analysis Period (min) 15

Volume for 95th percentile queue is metered by upstream signal.

34: Cooper Street & Sumner Tunnel Off-Ramp Splits and Phases:

<b>†</b>	<b>←</b>	<b>+</b>
	ø5	<b>∕</b> ø6
	10(0.000)	



Lane Group	· XEBR	EBR2	WBL2	WBL	- WBT	: SBL	SBT	SBR	1 + ø2	₩ #ø5°	Mar Ø6 1/2 2/2	
Lane Configurations	77	7"		ă	ተተ	ሻሻ	1→	7			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Ideal Flow (vphpl)	1900		1900	1900	1900	1900	1900	1900	7443	4555	6212 FE	
Lane Width (ft)	11	11	12	16	12	16	12	16	is continued in the	AND THE AMERICA		Sess
Storage Length (ft)	0	47.5	1 3	25		0		0	12.5	体质 長声	852 A 255	
Storage Lanes	3			1		2		1				3/22
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	SME SE			
Leading Detector (ft)	50	50	50	50	50	50	50	50				303
Trailing Detector (ft)	0	0	0	0	0	0	0	. 0				
Turning Speed (mph)	9	9	15	15		15	Yes	9	in the second		alles in the second	200
Lane Util. Factor	0.88	1.00	0.95	1.00	0.95	0.97	0.95	0.95				
Frt	0.850	0.850	10: 21-21			I Y Y E	0.977	0.850		F-90	egy veta	
Fit Protected	0.000	0.000		0.950		0.950	0.011	0.000	1.5.1			
Satd. Flow (prot)	1963	1546	0	2046	3610	3929	1408	1581				
Fit Permitted	1300	10-10		0.950	3010	0.950	1400	1001			\$ 60 E 40 E 50	
Satd. Flow (perm)	1963	1546	0	2046	3610	3929	1408	1581				
Right Turn on Red	1303	Yes	No.	2040	3010	3323	1700	No	1465			
Satd. Flow (RTOR)	2 2 2 5 6 6	34	INO					110		land de de	5.5.5.5.66	
Headway Factor	1.04	1.04	1.00	0.85	1.00	0.85	1.00	0.85	44-71			
Link Speed (mph)	1.04	1.04	1.00	0.00	30	0.05	30	0.00	E E E		100	
Link Distance (ft)					125		397					000 h
Travel Time (s)		4.			2.8		9.0					
Volume (vph)	1157	42	23	3	293	1057	231	332				Con
	0.75	0.95	0.68	0.34	0.83	0.88	0.92	0.88	55 and 55	5.6763		
Peak Hour Factor									- E	17 % an T	and the second	
Heavy Vehicles (%)	40%	1%	0%	0%	0%	1%	28%	10%				29
Adj. Flow (vph)	1543	44	34	9	353	1201	251	377				
Lane Group Flow (vph		44	0	43	353	1201	296	332				
Turn Type	custom	custom	Perm	Perm		Split	FO	Prot	•	-	0	MARKET THE REAL PROPERTY.
Protected Phases	The grade I			4		56	56	5 6	2	5	6 4 1	
Permitted Phases			1	1	5. E	F 0	F 0	F 0				
Detector Phases	1	1	1	1	1	5.6	56	56	7.0	0.0	4.0	
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		20140 4220		7.0	8.0	4.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0				20.0	24.0	8.0	
Total Split (s)	46.0	46.0	46.0	46.0	46.0	34.0	34.0	34.0	20.0	26.0	8.0	QUART.
Total Split (%)	THE CONTRACTOR STATES	46.0%				34.0%	34.0%	34.0%	20%	26%	8%	
Maximum Green (s)	40.0	40.0	40.0	40.0	40.0				16.0	19.0	4.0	335E
Yellow Time (s)		3.0	A NOT THE RESERVE AND ADDRESS OF THE PERSON	***************************************	3.0	护医使变		集業業	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				1.0	4.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lead	Lead			1 4 2 1	Lag	Lead	Lag	
Lead-Lag Optimize?											Yes	100074
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	LEX Fe		File i	2.0	2.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max				Ped	None	Min	77.7000
Walk Time (s)	F. F. L. L. S			2 8 8 1	- 5 62	44.63	J. A. F.		7.0			
Flash Dont Walk (s)			000 (CONTROL OF A STATE OF A STAT	go g eyyv epytystoch in norwe	r XII royaga, Egge sama kawana a - om	ologo, populació de vertena	and the second second second		9.0	A COMPANY OF THE PERSON OF THE	ONCOORS CARROLL VICE CO. I HANNING THE SEC. OF CO.	rgana -
Pedestrian Calls (#/hr)	CONTROL OFFICE PROPERTY SEEDINGS AND				3611				50			
Act Effct Green (s)	42.0	42.0		42.0	42.0	30.0	30.0	30.0				7000
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.30	0.30	0.30	refr		(A) 12 (A) (A) (A)	
v/c Ratio	1.87	0.07		0.05	0.23	1.02	0.70	0.70				
Control Delay	410.6	0.6		17.5	19.2	68.1	43.7	42.8			undi Aras	
Queue Delay	0.0	1.5		0.0	0.0	90.7	8.0	1.0				_



Lane Group	EBR	EBR2 V	VBL2 WBL	WBT.	SBL	SBT	I SBRI	**** ø2 **** *** ø6 · ·
Total Delay	410.6	2.1	17.5	19.2	158.8	51.7	43.7	
LOS	F	Α	В	В	F	D	D	
Approach Delay	1.0	· ar 委员	Figur PA	19.0		120.6		
Approach LOS				В		F		
Queue Length 50th (ft)	~846	0	16	74	~435	191	214	The state of the s
Queue Length 95th (ft)	m#736	m0	14	96	#528	m240	m265	
Internal Link Dist (ft)	<b>医表现</b> 体		量子是 经销售	45		317	7.485	MATERIAL CONTRACTOR
Turn Bay Length (ft)			25				•	
Base Capacity (vph)	824	669	859	1516	1179	422	474	r Talkeria karakaran barata da Kabu
Starvation Cap Reductn	0	521	0	0	209	0	32	The state of the s
Spillback Cap Reductn	0	2	0	0	0	90	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.87	0.30	0.05	0.23	1.24	0.89	0.75	

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 49 (49%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.87

Intersection Signal Delay: 226.1

Intersection Capacity Utilization 87.3%

Intersection LOS: F
ICU Level of Service E

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 1862: New Chardon Street & North Washington Street



Lane Configuration		•		7	•	<b>—</b>	•	1	<b>†</b>	-	-	<b>↓</b>	4
Lane Configurations	Lane Group	EBI	FBT	FBR	WRI	WRT	■WBR	NRI	NRT	WNRR	- SRI	SBT	SER
Recall Flow (phpl)		_			**************************************	A CONTRACTOR OF THE PARTY OF TH						A	
Total Lost Time (s)				1000	1000		1000			1000	1000		1000
Leading Detector (ff)		CANAL CANAL CONTRACTOR OF THE			And the second second	A STATE OF THE PARTY OF THE							655510556000000000000000000000000000000
Trailing Detector (ff)				4.0	7.0					4.0			
Turning Speed (mph)   15		Waster of the Control	Mackey Mackey (A)	A 4.6		TELESCO CASSACCIONALE		and the second second					
Lane Util. Factor				Ω	15		0	_	U		_	U	0
Fit   Frite					Control Contro	0.05	and the same of the		1.00	and the same of th	* 2 CS * C	1.00	
Fit Protected   0.950		1.00	0.91	1.00	1.00		0.90	1.00		1.00	1.00		1.00
Satid Flow (prot)   1787   5136   0   0   3571   0   1805   1615   0   0   1687   0   0.963	to a set of the first of the second of the s	0.050				0.555	3 3 3	0.050	0.000	FE.	7-1		
Filt Permitted			5126	n	n.	2571			1615	0	ń		0
Said. Flow (perm)   720   5136   0   0   3571   0   1417   1615   0   0   1625   0   181   13   14   14   16   15   13   14   14   16   15   15   15   15   14   15   15   15		AND THE RESERVE OF THE PARTY OF	0100	U	U	30/1	U.	A10 017 KI 1250 KI 125	เดเจ	The second	U	Committee of the second	U
Right Turn on Red   Yes			E490	<u> </u>	•	2574	Λ.		404E	^	^		0
Said, Flow (RTOR)		120	3130	2.00	-0	307.1		1417	1010	Account of the second	U	1020	
Headway Factor				162		- E E 4	168	/ 15 C	404	res		40	res
Link Speed (mph)         30         30         30         30           Link Distance (ft)         204         132         531         148           Travel Time (s)         4.6         3.0         12.1         3.4           Volume (vph)         14         738         0         0.502         3.188         0         22         4         0         12           Peak Hour Factor         0.92         0.78         0.92 <td></td> <td>1 00</td> <td>1 00</td> <td>4.00</td> <td>4.00</td> <td>1 00</td> <td>4 00</td> <td>1.00</td> <td>Contract Contract Contract</td> <td>4.00</td> <td>4 00</td> <td>ARREST ARRESTS</td> <td>4.00</td>		1 00	1 00	4.00	4.00	1 00	4 00	1.00	Contract Contract Contract	4.00	4 00	ARREST ARRESTS	4.00
Link Distance (ft)         204         132         531         148           Travel Time (s)         4.6         3.0         12.1         3.4           Volume (vph)         14         738         0         0.502         3         138         0         22         4         0         12           Peak Hour Factor         0.92         0.78         0.92		1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Travel Time (s)			and the same and						A			ARTHUR STATE STATE OF THE STATE	
Volume (vph)         14         738         0         0         502         3         138         0         22         4         0         12           Peak Hour Factor         0.92         0.78         0.92													
Peak Hour Factor   0.92   0.78   0.92   0.		4.4		^	^			420	A CONTRACTOR OF THE PROPERTY O	200	4	Co. Co. Co. Co.	40
Heavy Vehicles (%)	` · · · · · · · · · · · · · · · · · · ·											-	
Adj. Flow (vph)	transport of the control of the cont	ment of the second second second				Date of the Control o		Control of the contro				of the first transfer to the first transfer transfer to the first transfer trans	***************************************
Lane Group Flow (vph)													
Turn Type			NOTES TO SECURITION OF THE PARTY OF THE PART		2000	and the second s	AND AND THE PARTY OF	E. Company			and the second second	A STATE OF THE STA	
Protected Phases	- , , ,		946	U	U	664	U		24	0		17	0
Permitted Phases		Perm					n til	Perm			Perm		100
Detector Phases			1			1	and the second	-	5			5	X company
Minimum Initial (s)         8.0         0.0	Simple Make Pass April Simulation of All States and April 1997	1	15.2.74				8.85	Butter (2010) - 100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100			emman crimina de l'Auta Sakuk		
Minimum Split (s)         23.0         23.0         23.0         18.0         10.0         0.0         0.0         0.0%         25.0         25.0         25.0         20.0		•	-	S 100 To 10 To		•	W. Carlotte and The Co.						
Total Split (s)         75.0         75.0         0.0         0.0         75.0         25.0         25.0         25.0         25.0         25.0         25.0         25.0         0.0           Total Split (%)         75.0%         75.0%         0.0%         75.0%         0.0%         25.0%         25.0%         25.0%         25.0%         25.0%         25.0%         25.0%         25.0%         25.0%         0.0%           Maximum Green (s)         70.0         70.0         20.0<		to we can be seen and only only one	Commence of the Commence of th			200				新井 圭		ALL A LOCAL CONTRACTORS	
Total Split (%)         75.0%         75.0%         0.0%         0.0%         75.0%         0.0%         25.0%         25.0%         25.0%         0.0%           Maximum Green (s)         70.0         70.0         20.0	• • • • •			***************************************			I=						
Maximum Green (s)         70.0         70.0         20.0         20.0         20.0         20.0           Yellow Time (s)         3.0         2.0 <t< td=""><td></td><td>and the second of the second of the</td><td>Control of the Control of the Contro</td><td>30-10/2070/97/09-WEJW0000000000</td><td>Company of the Company</td><td></td><td></td><td>A CALL STREET, THE SECOND POR</td><td><ul> <li></li></ul></td><td></td><td>TOTAL SERVICE AND ADDRESS OF THE PARTY OF TH</td><td>and the second second second</td><td>Contract Contract</td></t<>		and the second of the second of the	Control of the Contro	30-10/2070/97/09-WEJW0000000000	Company of the Company			A CALL STREET, THE SECOND POR	<ul> <li></li></ul>		TOTAL SERVICE AND ADDRESS OF THE PARTY OF TH	and the second second second	Contract Contract
Yellow Time (s)         3.0         2.0				0.0%	0.0%		0.0%			0.0%			0.0%
All-Red Time (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Lead/Lag  Lead-Lag Optimize?  Vehicle Extension (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0  Recall Mode C-Max C-Max G-Max None None None None Walk Time (s) 10.0 10.0 12.0 12.0 12.0 12.0 12.0  Flash Dont Walk (s) 8.0 8.0 8.0 1.0 1.0 1.0 1.0 1.0 1.0  Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		CONTRACTOR	management of the party of the				Philips			885	The second secon		
Lead/Lag         Lead-Lag Optimize?         Vehicle Extension (s)       2.0       12.0       1	`												
Lead-Lag Optimize?         Vehicle Extension (s)         2.0         12.0         <	E ALEXANDER DE LA CONTRACTOR DE LA CONTR	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Vehicle Extension (s)         2.0		CONTRACTOR AND THE OTHER AND THE	wild v.V./ ob-olivobrom managements										
Recall Mode         C-Max         C-Max         None         None         None           Walk Time (s)         10.0         10.0         12.0         12.0         12.0         12.0           Flash Dont Walk (s)         8.0         8.0         8.0         1.0         1.0         1.0         1.0           Pedestrian Calls (#/hr)         0         0         0         0         0         0         0           Act Effet Green (s)         76.7         76.7         15.3         15.3         15.3           Actuated g/C Ratio         0.77         0.77         0.77         0.15         0.15           V/c Ratio         0.03         0.24         0.24         0.69         0.06         0.07           Control Delay         2.2         2.1         4.0         62.4         0.5         19.1           Queue Delay         0.0         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         A         E         A         B		\$4.40		<b>经营工</b> 商	基金金			7 5 25 3			· ###	ěrdí	
Walk Time (s)         10.0         10.0         10.0         12.0											2.0		
Flash Dont Walk (s)         8.0         8.0         8.0         1.0	PART CONTROL OF THE SECOND STATE OF THE SECOND		CONTRACTOR SERVICE CONTRACTOR SERVICES	Tå så	Pifiki			ECCUMENT MANAGEMENT			None		
Pedestrian Calls (#/hr)         0											12.0		
Act Effct Green (s)       76.7       76.7       76.7       15.3       15.3       15.3         Actuated g/C Ratio       0.77       0.77       0.15       0.15       0.15         V/c Ratio       0.03       0.24       0.24       0.69       0.06       0.07         Control Delay       2.2       2.1       4.0       62.4       0.5       19.1         Queue Delay       0.0       0.0       0.0       0.0       0.0       0.0         Total Delay       2.2       2.1       4.0       62.4       0.5       19.1         LOS       A       A       A       E       A       B		8.0	8.0	A A A A A		8.0		1.0	1.0		1.0	1.0	
Actuated g/C Ratio         0.77         0.77         0.15         0.15           v/c Ratio         0.03         0.24         0.24         0.69         0.06         0.07           Control Delay         2.2         2.1         4.0         62.4         0.5         19.1           Queue Delay         0.0         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         E         A         B	Pedestrian Calls (#/hr)					0		0	0		0	0	
v/c Ratio         0.03         0.24         0.24         0.69         0.06         0.07           Control Delay         2.2         2.1         4.0         62.4         0.5         19.1           Queue Delay         0.0         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         E         A         B	Act Effct Green (s)	76.7	76.7	ALKE	7 58	76.7		15.3	15.3			15.3	
Control Delay         2.2         2.1         4.0         62.4         0.5         19.1           Queue Delay         0.0         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         A         B	Actuated g/C Ratio	0.77	0.77			0.77		0.15	0.15	n commente de la companya de la comp		0.15	
Queue Delay         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         E         A         B	v/c Ratio	0.03	0.24			0.24	11111	0.69	0.06	1 至 首		0.07	4.6
Queue Delay         0.0         0.0         0.0         0.0         0.0           Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         E         A         B	Control Delay	2.2	2.1		om at more at 7.7779 a feet	4.0		62.4	0.5	.o. un 4. 100 <b>002.00000000000000000000000</b>		19.1	XX-ACTX NEWSPARE
Total Delay         2.2         2.1         4.0         62.4         0.5         19.1           LOS         A         A         A         E         A         B	Queue Delay	0.0	0.0	14		0.0	FFLA	0.0	0.0			0.0	441
LOS A A B B B	entry C / Cultillan (School) (Appl. 100 Cale (	esson esson en extenti e e en fere pe		serventententiet (KAZIII)			ungeri errordetti eri 2019.	22 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2		machentestatististististististististististististist		A his common production and the company of the	en-macconfidition (
		Α	Α	7117	# 84	A		E		医菌属	15.71		
	Approach Delay			an ermanilist vettil (1977)		Z456-110 365VA-07V4230484	center o stolic Albeill		0.0000000000000000000000000000000000000	c:: 70.2/3#VARESTE		19.1	EVENTERS OF

1

	-		▼	▼	•	•	ı	1	-	*	-
Lame Group	EBL	EBI	EBR =	MBL WBIL	-WBR	NBL	NBT#	NBR	- SBL .	SBT	SBR
Approach LOS		Α		Α			D			В	F 18 E
Queue Length 50th (ft)	1	27		51		97	0	or Ottober 2000 (2000)		2	PCTS CAROLINA AND AND AND AND AND AND AND AND AND A
Queue Length 95th (ft)	m4	34		73		156	2	418.5	4.0	20	
Internal Link Dist (ft)		124		52	- 1-1	PPOSENTAL TRACTOR SCHOOL SECURI	451	02112 TEC 211 O A 1236 A 32		68	1972116F26111642111686
Turn Bay Length (ft)					155						
Base Capacity (vph)	552	3939		2739		298	490			352	P
Starvation Cap Reductn	0+	0		0		0	0	5 5 5		0	
Spillback Cap Reductn	0	0		0		0	0		The state of the s	0	
Storage Cap Reductn	0	0	4452	0.		0	0		# 1	- 0	
Reduced v/c Ratio	0.03	0.24		0.24		0.50	0.05			0.05	HOLE OF THE PARTY

Intersection Summary

Area Type: Cycle Length: 100

Other

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 7.9

Intersection LOS: A

Intersection Capacity Utilization 35.2%

ICU Level of Service A

Analysis Period (min) 15

Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 506: Causeway Street & Haverhill Street



	۶	-	7	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	-	<b>↓</b>	4
Lane Group	EBL	EBT	EBR	-WBD	WBT.	WBR .	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<b>#13</b>	allella services		ች	414					1000	<b>ሳ</b> ጐ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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)			2.5	50	50		366		han i		50	
Trailing Detector (ft)	234.20.003Ruft + 6			0	0						0	///// *:Nextend
Turning Speed (mph)	15		9	15	事事 [] []	9	15		9	15	45,14	9
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ent		114	446			排傷 :				f 1 1	0.948	
Fit Protected	mere gererare administrative execu-	57.20 Page 100 Commission of Street Street 2000		0.950	0.977			50.003x=6.00;5;05.00;2;06000	TALES AND SET OF ENGLISHED IN	×		
Satd. Flow (prot)	0	0	0	1643	3378	0	0	0	0	0	3422	0
Flt Permitted				0.950	0.977						THE RESIDENCE OF THE PARTY OF T	THE PERSON NAMED IN COLUMN
Satd. Flow (perm)	0	0	0	1643	3378	0	0	0	0	0	3422	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)	1534	P.H.F.	145	181	169				1560	Prei	100	
Headway 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
Link Speed (mph)		30	F-12,010	425	30	100	美工技	30	LÉBE,		30	15
Link Distance (ft)		142			141	Marian Arman		170			265	
Travel Time (s)		3.2	0	200	3.2			3.9	^	^	6.0	400
Volume (vph) Peak Hour Factor	0 0.92	0 0.92	0 0.92	322 0.92	171 0.92	0 0.92	0 0.92	0	0	0	245	129
Adj. Flow (vph)	0.92	0.92	0.92	350	186	0.92	0.92	0.92	0.92 0	0.92 0	0.92 266	0.92 140
Lane Group Flow (vph)	0	0	0	181	355	0	0	0	0	. 0	406	140
Turn Type		- U	U	Split	- 333	U	U		U	U	400	y
Protected Phases				Opini 1	1.	5 J 25		S 2 2 3			5	
Permitted Phases		25. 15.068	ME 154501			ba os.		12 500				
Detector Phases		5.88		1	1						5	I Z E
Minimum Initial (s)	31 G G	100		8.0	8.0	2.2		2010.2010.2010	3 3 1		5.0	2.71
Minimum Split (s)	616. B.Jr.		E 1113 5	13.0	13.0		92.5				20.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%
Maximum Green (s)				43.0	43.0	u Year east					31.0	
Yellow Time (s)	1428	#45	483	3.0	3.0	10			1110	42 A	3.0	
All-Red Time (s)				2.0	2.0	A					2.0	
Lead/Lag				Lead	Lead	100		1.4				754
Lead-Lag Optimize?		V-804008-1119-100-10-10-10-10-10-10-10-10-10-10-10-10		··· / Wile W. V. B. W. Page Manager,								
Vehicle Extension (s)	\$44.2 F			2.0	2.0		营工基础	24.23			2.0	
Recall Mode			(	C-Max (	C-Max						Max	STEELSKIP OF STREET
Walk Time (s)									23.15		ABBA.	
Flash Dont Walk (s)					rest in Egypte and		N CONTRACTOR OF THE CONTRACTOR			- 10		25877.034656578
Pedestrian Calls (#/hr)			10 da 10 10 10 da 1	44.0	440	1.516	18E B		F. 14-11	1144	00.0	
Act Effct Green (s)		25 (15 (15)		44.0	44.0		(2 N 2 E 1 )				32.0	
Actuated g/C Ratio		red)		0.44 0.22	0.44	直直 第	3 BEF 1				0.32	AF FY H
v/c Ratio Control Delay				25.2	0.22 34.2				O BOOKE VALVA		0.35 26.6	
Queue Delay				6.1	34.2 4.6					SASE ET	0.0	5.4
Total Delay		·#12	5 . T	31.3	38.8		) ( <u>5.</u> / <u>5. /</u> 5. /6.				26.6	NAME :
LOS	10.8 日 10		10000000000000000000000000000000000000	31.3 C	-30.0 ·	A di di		ra Bir		rral I	C	
Approach Delay			Maria I		36.3	据	2012 2012 2012		Carlo C		26.6	
Approach LOS			#6X#KATE#		D	450.20.00			esiste XPV	e.javkevije	Z0.0	
											<u>~</u> _	

Lane Group	
Lane Configurations	
Ideal Flow (vphpl)	
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	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	$oldsymbol{2}$
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	110
Maximum Green (s) Yellow Time (s)	14.0 
All-Red Time (s)	0.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	Ped
Walk Time (s)	7.0
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay  Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

	•	-	•	1	*	•	1	Ť	<b>/</b>	-	<b>↓</b>	4
Lane Giloup	EBL	EBT	EBR	. WBL	WBT	WBR	NBL	NBT	NBR.	SBL	SBT	SBR
Queue Length 50th (ft)				89	101					5715	83	
Queue Length 95th (ft)			Chronic Williams	m40	m53				200 miles - 400 mi		120	
Internal Link Dist (ft)		62	History		61			90	70 71 77		185	8674F
Turn Bay Length (ft)												
Base Capacity (vph)	814	1.446	et bul	824	1581	4	5 6				1163	
Starvation Cap Reductn		one or other ways.	ranasanan mengenerakan	582	1138		MARINEN SECTION AND AND AND AND AND AND AND AND AND AN	4 V/V			0	
Spillback Cap Reductn				2	. 41.11.2	4.5		155	HIN		35	
Storage Cap Reductn	No. of Park Control of the Control of the		•	0	0	TY BANGSAN					0	S o Arth rot 2000 is venicus as
Reduced v/c Ratio	15			0.75	0.80		2.2 3		5.5		0.36	支養原"
Intersection Summary	11									V ( 4 )		
the state of the s	her		7.7			44		7 清澈			4411	
Cycle Length: 100												
Actuated Cycle Length: 1				4.6 [	755					17.00	fblit	
Offset: 22 (22%), Referen	ced to	phase 1	:WBTI	₋, Start o	of Green				Committee of the Commit			
Natural Cycle: 50	i de	W. Et.,			Y FEE	e del la la companya de la companya			4244	45.4	148	

Intersection LOS: C

ICU Level of Service A

Intersection Capacity Utilization 27.0%

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35
Intersection Signal Delay: 32.1

Analysis Period (min) 15 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 65: Valenti Way & Beverly Street



Lane Group 3. 22.
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

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					_

	T		,	•		•						
Moxement	WBL	WBR	NBT	NBR.	SBL	#SBT		<b>V</b>				
Lane Configurations	N/		<b>^</b>			<b>^</b>						
Sign Control	Stop		Free	BE	7.4	Free						
Grade	0%	VIX.N98.94 (000000000000000000000000000000000000	0%	at-1.		0%	77777408644					
Volume (veh/h)	5	9	764	0	0	1109		1 1 2		14		
Peak Hour Factor	0.42	0.75	0.88	0.92	0.92	0.78						
Hourly flow rate (vph)	12	12	868	0	0	1422				4943	365	
Pedestrians					**************************************	7.7.7.8.2.8.2.8.2.			WARRAN WARRANCE			emonerance contra
Lane Width (ft)	200		259									100
Walking Speed (ft/s) Percent Blockage		677.0									**:	
Right turn flare (veh)						6 5 8 5 5			5 375		anta.	
Median type	None									25 (4)		1 2 2
Median storage veh)				L E L E						16 16		
Upstream signal (ft)			495	8.60.2		111		15 W J	uni.	Pages	SET 4	
pX, platoon unblocked	0.73			T. Marin Person				24	F.24			7. 2.44
vC, conflicting volume	1579	434			868	344 <u>2</u> 44					5816	
vC1, stage 1 conf vol		7.7						DECEMBER 185				4.01E040868
vC2, stage 2 conf vol							CYCLE		7 523			
vCu, unblocked vol	1421	434			868			OCCUPANT A THE YEAR				MINN COTURNADO
tC, single (s)	6.8	6.9			4.1		11111		Hø		134	
tC, 2 stage (s)				60								
tF(s)	3.5	3.3		1423	2.2			Tadda		741		110
p0 queue free %	87	98			100			EK SATS SERVER				A messengan men
cM capacity (veh/h)	94	575	4.5.3		784			4 614				F.E
Direction, Lane#:	WB-1	NB 1	NB 2	SB 1	SB 2	A		- 10		5.0		
Volume Total	24	434	434	711	711				10 AS 65 AS		3444	
Volume Left	12	0	0	0	0					#WS.AL ***		W. O. H. Y. H.
Volume Right	12	0	0	0	0				145			
cSH	162	1700	1700	1700	1700							
Volume to Capacity	0.15	0.26	0.26	0.42	0.42			1 at 10 at			31基本 3	
Queue Length 95th (ft)	13	0	0	0	0		T1000 http://www.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.assac.as	HAVE OF THE PARTIES		SOURCE OF PARTY A STREET		MATERIAL CHICK SHOULD
Control Delay (s) Lane LOS	31.0	0.0	0.0	0.0	0.0	73161				盖 2.卷	1755	
Approach Delay (s)	D 31.0	0.0		0.0								
Approach LOS	D	0.0	KEE,	U.U			ABA S.	10000000000000000000000000000000000000		医悬线 症	125	37
• •	_		-									
Intersection Summary	推翻手				( # 4 E	12.46						
Average Delay			0.3		economics of a second		77.4					
Intersection Capacity Uti	ilization	1 4 7 7	12.0%	IC	U Leve	l of Service			Α		Marian	
Analysis Period (min)			15			100		Company of the state of the sta	SECURITION AND ARCHIVE			J. W. V. C.
	160							7 2	#			

	ı	J	*	~		*				
Movement	NBL	NBT	SBT	SBR	SEL	SER			<b>15</b> 15 15 15 15 15 15 15 15 15 15 15 15 15	
Lane Configurations		ተተ	<b>个</b> 个		¥γf					
Sign Control		Free	Free		Stop					
Grade		0%	0%		0%			and the second s	* M. 4 P. P. C.	ACCORDANGE STATE OF THE SECTION OF T
Volume (veh/h)	0	CONTRACTOR AND	1114	0	19	2				
Peak Hour Factor	0.80	0.91	0.94	0.53	0.92	0.92				
Hourly flow rate (vph)	0	819	1185	0	21	2	4555			
Pedestrians		4	5						TABLE OF THE OWNER	CARROLLO CONTRACTOR CO
Lane Width (ft)		12.0	12.0	1.54		超界器 并且				
Walking Speed (ft/s)		4.0	4.0						37,150	557845X 054000 Table 1000
Percent Blockage	43.4	- 0	0	5.52.43	1.5					
Right turn flare (veh)			A 1525		Nana		4 (1)			
Median type Median storage veh)			医耳片		None					15555
Upstream signal (ft)		109	497						1 10 1	
pX, platoon unblocked	0.75	103	731		0.75	0.75				
vC, conflicting volume	1185				1599	597		- E4 6 E		
vC1, stage 1 conf vol	1100		57 8 4							
vC2, stage 2 conf vol			r fed					17.253		
vCu, unblocked vol	918				1468	136			1.04	
tC, single (s)	4.2		Bat.	5 4 1.46	6.8	6.9	14			
tC, 2 stage (s)				ahmaganatur 17.2.7.	· S · · · · · · · · · · · · · ·					F 255-04 100
tF.(s)	2.2	) / <b>/</b>		7.7	3.5	3.3		37 25.		
p0 queue free %	100		***************************************	- N- 30-4 4" No. 11 A 11 GROUND CONTROL	77	100	CATALA CONTRACTOR INTERCONNECTION AND AND AND AND AND AND AND AND AND AN	ogfereralismi valar-ser florer i rivo combino o ago use dossa vivere		
cM capacity (veh/h)	547			1252	90	671	ESPER.		2 55	
Direction (Lame #	NB-1	NB 2	SB 1	SB 214	ISEM.		al dellas			
Volume Total	409	409	593	593	23	G CERTIFICATION		24 25 27		
Volume Left	0	0	0	0	21					
Volume Right	Ō	0	0	Ō	2			10000		
cSH	1700	1700	1700	1700	99		1.64			
Volume to Capacity	0.24	0.24	0.35	0.35	0.23			AR FE		TANK!
Queue Length 95th (ft)	0	0	0	0	21					
Control Delay (s)	0.0	0.0	0.0	0.0	52.2			47.41.0		
Lane LOS					F		***************************************		***************************************	- MH
Approach Delay (s)	0.0	14	0.0	f E Fd.	52.2	4. 人名西伊			光星星的	
Approach LOS					F					
Intersection Summary										
Average Delay			0.6							
Intersection Capacity Uti	lization	- 4	12.0%	IC	U Leve	of Service		Α		
Analysis Period (min)		2007 BIN / 9 P. D.	15	eres SACULES (TRESSEE	5.			T. S.		
	7.725 E ST				E COLDENSTI					

		•	1	*-	1	<i>&gt;</i>					
Movemment	EBT	EBR	WBL	WBT	× NBL	NBR -					
Lane Configurations	<b>ተ</b> ኈ			41	k <sub>i</sub> #						
Sign Control	Free			Free	Stop				1477		4章 7章
Grade Volume (veh/h)	0% 579	- 00	- 27	0%	0%						
Peak Hour Factor	0.96	80 0.86	27 0.73	615 0.95	4 0.56	145 0.66				F. 3. 4. 7	
Hourly flow rate (vph)	603	93	37	647	7.	220					
Pedestrians	11 × 14 × 14 × 1									, de	
Lane Width (ft)		1000	1407		434				唐子子。		
Walking Speed (ft/s)											2-4
Percent Blockage Right turn flare (veh)		12.4148			27			2000			
Median type					None						
Median storage veh)				. 7	110110			or Silver			
Upstream signal (ft)	443	9414	117	204					1155		
pX, platoon unblocked			0.95		0.97	0.95					
vC, conflicting volume		# JE25	696	1484	1047	348			1.5		
vC1, stage 1 conf vol	# 1 A							185			
vCu, unblocked vol		# W	622		892	254	<u> </u>	6.304.6			1 3 1 5
tC, single (s)			4.1		7.0	6.9					12 36
tC, 2 stage (s)				C 2000 O WAY AND ADDRESS OF THE							
tF(s)	1 8 35		2.2	化基格	3.6	3.3		A 1 HY			
p0 queue free % cM capacity (veh/h)			96 - 91 <b>7</b>	and the second	97	69 705				***	
			S. A side to select the second		250	705	hers.			EEE E	
Direction, Lane #	EB/I	EB 2	A SAMPLE OF THE	WB 2	NB 1		ART.	90			
Volume Total  Volume Left	402	294	253	432	227		E 4.5				1235
Volume Right	0 0	0 93	37 0	0	7 220						
cSH	1700	1700	917	1700	667		7.44				E EE
Volume to Capacity	0.24	0.17	0.04	0.25	0.34	4.58.6	9		BEG.		3.60
Queue Length 95th (ft)	0	0	3	0	38	X-2.					
Control Delay (s)	0.0	0.0	1.7	0.0	13.2	/ 7 / B A .			1148		-544
Lane LOS Approach Delay (s)	0.0		A 0,6		B 13.2		40 - 22 - 10 - 13		E Sexualita		
Approach LOS			0.0		13.Z B		2348				
Intersection Summany									7.00		
Average Delay			2.1								57.5
Intersection Capacity Ut	ilization	5	2.1	I C	U Leve	l of Service	er a	A			
Analysis Period (min)			15				70.75				water each
				4451					123		

	-	•	•	<b>—</b>	1	<b>/</b>				
Movement	EBI	EBR	WBL	WBT/	(FNBL	NBR		4 (14.1)	100 PM	<b>/</b>
Lane Configurations	ተተጉ	100		_4^	<u> </u>		THE STATE OF THE S		J-11	
Sign Control Grade	Free 0%			Free 0%	Stop 0%					
Volume (veh/h)	467	2	16	486	υ‰ 0	0				
Peak Hour Factor	0.78	0.92	0.92	0.76	0.77	0.52				
Hourly flow rate (vph)	599	12	17	639	0	0				
Pedestrians					212	action of the state of the stat	KAN SONEL SONE AND		And the second s	
Lane Width (ft)			ABET		0.0					
Walking Speed (ft/s) Percent Blockage		Si Si A			4.0 0	* N = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =		1975		
Right turn flare (veh)	246 .5 X				J. S. C.	15.31.5				1.3
Median type				112	None	distant.			En a	
Median storage veh)				0		Saustens v.				
Upstream signal (ft)	387			309		(AA)				
pX, platoon unblocked	and the same of th	SZFOLTS COMPANY		W. W. Stadenson	2 2 2 3 3 5 5					
vC, conflicting volume vC1, stage 1 conf vol	2020		813		1166	413				
vC1, stage 1 conf vol				. S (L. ≣8.0)				7 Temperat April	2.77	
vCu, unblocked vol	1,000	A PROPERTY	813		1166	413				A 医糖化
tC, single (s)	重量素	A EA	4.1		6.8	7.0				
tC, 2 stage (s)									, , , , , , , , , , , , , , , , , , ,	
tF(s)		議議	2.2		3.5	3.3				3451
p0 queue free %	1 Y		98		100	100				
cM capacity (veh/h)	5 5 34		823		183	580	BEFFE.			<b>多少点最</b>
Direction, Lane# /: #	EB 1	EB 2	A THE THE RESIDENCE AND ADDRESS OF THE PARTY A	WB1	WB 2		<b>从49</b>	- 188		
Volume Total	239	239	122	231	426	5.883				
Volume Left Volume Right	0	0 0	0 2	17 0	0 0					
cSH	1700	1700	1700	823	1700					
Volume to Capacity	0.14	0.14	0.07	0.02	0.25	8 4 8	11.84.64			
Queue Length 95th (ft)	0	0	0	2	0					
Control Delay (s)	0.0	0.0	0.0	0.9	0.0	7883				
Lane LOS	5.0			A	Personal and the second and the second	= ** OS PONE Y STORY		A.187.		WHEN PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRESS
Approach Delay (s) Approach LOS	0.0		FIFT S	0.3	, unabali			Έ, Δ.		
• •		400					****	CONTRACTOR OF THE PARTY OF THE		
Intersection Summary	A Bio			11.15				ia, iki	1 144	
Average Delay Intersection Capacity Uti	(i==#==		0.2 28.4%	16	U Level	-f O ·	<u></u>	·A	TO BE SEED OF THE SECOND	
intersection capacity of	2.100.004   1243.00	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	$\alpha \alpha \Delta \alpha		zwiekvei	2		The second secon	WINDOWS TO A TOTAL TO STATE OF THE PARTY OF	

	1		*	•	4	4	1	†	<i>*</i>	1	<del> </del>	4
Movement	EBL	EBE	EBR	WBL	WBT	WBR	NBL	NET	!NBR /-	SBL	SBIL	SBR
Lane Configurations					<b>ተ</b> ኈ		ሻ	ተ	mentale all the second	SEL PLAN ORGANIZATION STREET, AND		7
Sign Control		Stop	2.4		Stop	子提工家		Stop			Stop	
Volume (vph)	0	0	0	0	98	132	25	17	0	0	0	70
Peak Hour Factor	0.79	0.92	0.72	0.92	0.92	0.92	0.92	0.69	0.92	0.92	0.81	0.92
Hourly flow rate (vph)	0	0	0	0	107	143	27	25	0	0	0	76
Direction, Lane #	WB1H	WBI2	NB 1	NB 2	SB1		14					
Volume Total (vph)	71	179	27	25	76							
Volume Left (vph)	0	0	27	0	0		BK 1				94.7	
Volume Right (vph)	0	143	0	0	76							
Hadj (s)	0.00	-0.56	0.50	0.00	-0.60	化化学员	1550					4.72
Departure Headway (s)	4.8	4.3	5.6	5.1	4.5	ANAROS WAS BURNEY VALLEY CONFIDENCE				~~~ APP~ \$\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \		
Degree Utilization, x	0.09	0.21	0.04	0.04	0.10		145	i sta				
Capacity (veh/h)	730	820	608	664	750	TA TANGEN WAS THE TOTAL			***	NAMES OF THE PERSON OF THE PER		
Control Delay (s)	7.1	7.2	7.7	7.1	8.0		LG H				4 7 3 8	
Approach Delay (s)	7.2		7.4	er des le stelle Me a filosopie (Medilline E.)	8.0	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
Approach LOS	Α		Α		A			# # 2	4 7 44	23.2	7411	
Intersection Summary		<b>有</b> 题是:										
Delay	1033		7.4		114			(4)		NETS	1200	
HCM Level of Service			Α									
Intersection Capacity Util	ization	1114	39.9%	IC.	U Leve	l of Serv	rice	440	- A	1112	7.756	
Analysis Period (min)		VANDON BETTALLER	15				Service Control of Control	·			C C 1 (1 ) 1/2/00 C (27) (4 ) (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4	
	514 I											

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Movement	≓EBT.	EBR	-WBL	WBT	NBL	NBR #	
Lane Configurations	ተተ ን		ካ	<b></b>			
Sign Control	Free	4 5 1 1		Free	Stop	4747	
Grade	0%		A C - 1000-1-20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	0%	0%		The second secon
Volume (veh/h)	498	265	15	505	0	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	541	288	16	549	0	0	
Pedestrians			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		210	A FILE	
Lane Width (ft) Walking Speed (ft/s)			化集 团	高 農園	0.0 4.0	2.7.7.4	
Percent Blockage					4.0		
Right turn flare (veh)					·		The Control of the Co
Median type		1 - 21 - N	4 W 4		None		
Median storage veh)			<u> </u>	1885 SALS			
Upstream signal (ft)	132		Ba B	564		13 F 4 F	
pX, platoon unblocked		5.00 <b>1</b> 00 00 00 00 00 00 00 00 00 00 00 00 00	0.96		0.96	0.96	
vC, conflicting volume			1039	411	1202	534	
vC1, stage 1 conf vol							A SECOND
vC2, stage 2 conf vol			<b>教養者</b>	<b>算</b> 提系			
vCu, unblocked vol			952		1123	425	25VA25P24426.vvv
tC, single (s)		1344	4.1		6.8	6.9	
tC, 2 stage (s)		C. Alternati	2.0	and the second	0 F	0.0	
tF (s) p0 queue free %			2.2 98	3 5 5	3.5 100	3.3 100	
cM capacity (veh/h)			90 699		190	558	
Direction, Lane #	EBM	EB 2		<del>damanan</del> an erreteksi (e.a. wa. wa. m	WB 2		A CONTRACT CONTRACTOR
Volume Total	217	217	396	16	274	274	
Volume Left	0	0	0	16	0	0	\$1/25
Volume Right	1700	1700	288	0	4700	0	
cSH Volume to Capacity	1700 0.13	1700 0.13	1700 0.23	699 0.02	1700 0.16	1700 0.16	
Queue Length 95th (ft)	0.13	0.13	0.23	2	0.10	0.10	
Control Delay (s)	0.0	0.0	0.0	10.3	0.0	0.0	
Lane LOS		0.0	0.0	В	9.9		
Approach Delay (s)	0.0	7.5	545	0.3	80040		
Approach LOS		Australia, vici di K	467142				
Intersection Summary							
			0.4				k 4
Average Delay Intersection Capacity Uti	lization		0.1 21.6%	16	111000	l of Service	o i Santa de la companya de la comp
Analysis Period (min)	nzauuri		15		O EGAE	I OI OHIVICE	e
, maryora i oriod (mill)	12 12		13		355 376		
					ach ch		

	۶	-	-	•	-	4				
Movement	EBL	(EBT	WBT	WBR	SBL	SBR.		<b>人</b> 拉斯 泰里	Virgini, e	
Lane Configurations			<b>↑</b> ↑							
Sign Control		Free	Free	412	Stop	andrá Bra				
Grade		0%	0%		0%	,			** )	
Volume (veh/h)	0	0	115	168	0	0		17967	100	I La Art
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				
Hourly flow rate (vph)	0	0	125	183	0	0	10.00		17 F	
Pedestrians					250					
Lane Width (ft)			\$ <b>2</b>	差書表言	0.0					
Walking Speed (ft/s)				TO THE RESIDENCE THE SECOND CONTRACT OF THE S	4.0	***************************************				W.V. W. & D. O 1/2
Percent Blockage				$I I \in I$	0.4				設計が変	
Right turn flare (veh)				DOZZENA, MARKI STROMANA	7e2o-2 mai ir no ann ann an a	y. 3.				PPP IN CHIES S KARRITY (PUBLISHED) AND THE LIBRORY
Median type	er de	\$6£Z	1645		None		2.556			
Median storage veh)										
Upstream signal (ft)	300 33	<b>计量"信息</b>	142				92011	53000		
pX, platoon unblocked	FFO	Supplied to	6 F. 25 F.		460	101			AND TO BE SEED OF THE SEED OF	
vC, conflicting volume	558		8.5.5.		466	404	4 E53"			
vC1, stage 1 conf vol				- Sales ale						
vCu, unblocked vol	558			3.055	466	404	7-3/4/1	5000		
tC, single (s)	4.1	English St.			6.8	404			2 7 7	
tC, 2 stage (s)	7.1	5 S S S	1546		0.0	0.5	F 5 + 5			
tF (s)	2.2			S A P S	3.5	3.3			8 8 3 5	
p0 queue free %	100	E-S			100	100			Ber 2014 - 2/14	
cM capacity (veh/h)	1023	Walter State			530	602				
	CERTAIN PROPERTY OF THE CONTRACT OF THE			V	COC	<b>992</b>				- 10
Direction, Laine #	WB 1		å då tred						. Alektrica	- 5 ie 16 de l
Volume Total	83	224				F (F 1)			6111	
Volume Left	0	0			THEOLOGY IS RESENTED TO SHEET					MINISTER STATE OF THE STATE OF
Volume Right	0	183	£1.51	441			1.550	2 6 4 7 6		
cSH	1700	1700			PROCESUR PERCEMBALAN					
Volume to Capacity	0.05	0.13	11161	ASES			3327	95.55		
Queue Length 95th (ft)	0	0			TOUR COLUMN STORY	ASSESSMENT AND SECURITIONS				
Control Delay (s)	0,0	0.0		$E \in \mathbb{Z}$ is	3921					
Lane LOS					all of a Second of the			en som en		
Approach Delay (s)	0.0		\$ 6.2.4		Fall-di		#444			te s <i>e i</i> e.
Approach LOS										
Intersection Summary		Charles.	aran a			Marian da			Bearing 10	
Average Delay			0.0							
-	77.00	CONTROL AND		0.515642100 No.0000000			27.07.00	FT	SHINESING ACCUMULATION OF	BINGS SELECTION OF THE BOARD OF THE BOARD

ICU Level of Service

16.8%

15

Intersection Capacity Utilization

Analysis Period (min)

	1		Ţ		*	¥					
Movement	-WBL	WBR.	- NBT-	NBR+	#SBL	, SBT	<b>表示</b> 表示	南山	, ,,,,		
Lane Configurations	7					414					
Sign Control	Stop		Free	175		Free	<b>美国 影影</b>	# 4£.		£ £ £s	1444
Grade	0%		0%			0%	e Anne a del companyo del compa		messagen service	ZEC ATT CONTRACTOR AT	
Volume (veh/h)	120	0 00	0	0	43	237	82.35	file	EWE.	5.02	
Peak Hour Factor Hourly flow rate (vph)	0.92 130	0.92 0	0.92 0	0.92 0	0.92 47	0.92 258		- E E E E E E E E			
Pedestrians	100	U	U	U	41	200	5 St. A	R. K.			
Lane Width (ft)		4.4						W.	#27#X		14.600
Walking Speed (ft/s)				Substitution of the substi	DOMESTIC POST TIME			EE 75 23 5 3	Elizabeth a thair a th		
Percent Blockage	10 10	\$ Fak	En v	A BA	i u i A	å####	1411			The second	
Right turn flare (veh)											
Median type	None		7-31-2		重量量						
Median storage veh)			005					50)			
Upstream signal (ft) pX, platoon unblocked		1155	265		2:553	15 5 6 7 1	3 3 4	2.15	an Fills		
vC, conflicting volume	222	0		5.00	0						
vC1, stage 1 conf vol		<b>.</b>		5.5.5			51.00 St. 100				
vC2, stage 2 conf vol	15 68		12 22	1147	l fair	(A. A. E. E. E.	5484	ā die i		at the s	
vCu, unblocked vol	222	0			0			000000000000000000000000000000000000000			allian i sa
tC, single (s)	6.8	6.9	差 遺費	据证 有月	4.1						
tC, 2 stage (s)									XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
tF(s)	3.5 82	3.3 100	112		2.2			養具書	ALB L		
p0 queue free % cM capacity (veh/h)	730	1091			97 1636	46 ( 5 5 5 5	e e an e e	- 6 G			
		X.250X65-159-15			1030						
Direction, Lane#	WB 1	SB 1	SB 2							111 111	
Volume Total	130	133	172	425			<b>五直 4.2</b>				
Volume Left	130 0	47 0	0				4 T 1				
Volume Right cSH	730	1636	1700	是 装货机		1.540.7			\$4 \$ A		
Volume to Capacity	0.18	0.03	0.10		80.0	1011		F 82 4 4	18.8.5	1244	
Queue Length 95th (ft)	16	2	0								\$ 0.00 ARX 150 ARX
Control Delay (s)	11.0	2.7	0.0		134		ra de e				
Lane LOS	В	Α				THE RESERVE OF THE PARTY OF THE	and you will have been a second	2000 BELIAN PRO - 7-4 C	The state of the s	100000000000000000000000000000000000000	
Approach Delay (s)	11.0	1.2				and and	444	2 ( )	SARA I	1422	<b>建新基数</b>
Approach LOS	В										
Intersection Summary	. Vā ba	旋瓣道		e fi							1.3255
Average Delay			4.1								
Intersection Capacity Ut	ilization	<b>编数</b> 5	21.1%	IC	U Leve	of Servic	е		Α	<b>新作业</b> 抗	
Analysis Period (min)		1059T	15								

	<b>*</b>	<b>→</b>	+	4	<b>/</b>	4	
Movement	EBL	EBT	WBT.	WBR	SBL	SBR	
Lane Configurations Sign Control		Funn	ተ <b>ተ</b> ጉ		O.L.	7	
Grade		Free 0%	Free 0%		Stop 0%		
Volume (veh/h)	0	0	482	32	0 /0	22	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	AND
Hourly flow rate (vph) Pedestrians	0	0	524	35	.0	24	
Lane Width (ft)					r F		
Walking Speed (ft/s)							
Percent Blockage	1 4.3	47 BB					
Right turn flare (veh) Median type					None		
Median storage veh)						S. Simon S. Simon Service	
Upstream signal (ft)	21.11	141	72	0.0			
pX, platoon unblocked vC, conflicting volume	559				541	192	
vC1, stage 1 conf vol	999	¥7. ; , E Z.	ACT OF STATE OF		OT III	102	
vC2, stage 2 conf vol				liki:	1114		
vCu, unblocked vol tC, single (s)	559 4.1			3.64 4	541 6.8	192 6.9	
tC, 2 stage (s)	7.1				0.0	U. <del>S</del>	
tF (s)	2.2			TFA 6	3.5	3.3	
p0 queue free %	100				100	97	
cM capacity (veh/h)	1022		2.3 4	115	476	823	
Direction, Lane #2 1976	WB11			SB 1	11.00		principal principal control of the c
Volume Total Volume Left	210 0	210 0	140 0	24 0			
Volume Right	Ö	0	35	24			
cSH	1700	1700	1700	823			
Volume to Capacity  Queue Length 95th (ft)	0.12	0.12	0.08 0	0.03			
Control Delay (s)	0.0	0.0	0.0	9.5			
Lane LOS				Α			Syd Society 5 - 1995
Approach Delay (s)	0.0			9.5	1953		
Approach LOS				Α			
Intersection Summary					19		
Average Delay Intersection Capacity Uti	ilization		0.4 20.0%	ın	امريم ا ا ا	of Service	е
Analysis Period (min)	mzauvi i		40.076 15	<u>ال</u> ا	A FEAGI	OI OGIVICI	<b>-</b>

15

Analysis Period (min)

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee Please Note: Enter data in SHADED cells only	s Worksheet (HCN D cells only	1 2000)	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/10/2008 Project # 2005014	Site Information Intersection Condition Period	ation .	North Washington Street/Causeway Street EXISTING AM PEAK HOUR	y Street
Cycle length, C (sec.)  Cycle length, C (sec.)  Effective green Red phase Commercial Street  Causeway Street  N Washington Street  N Washington Street  N Washington Street	(ped/hour) (ped/sec.) 102 0.03 2 0.00 124 0.03 190 0.05	(ped/C) 4 0 5 8	Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk North Width, W <sub>n</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)  Crosswalk West Length, L <sub>w</sub> (ft.)  Crosswalk North Length, L <sub>w</sub> (ft.)  Crosswalk South Length, L <sub>n</sub> (ft.)	(ft.) 12 (ft.) 12 (ft.) 12 (s. (ft.) 12 (s. (ft.) 12 (ft.) 89 (ft.) 89 (ft.) 84 (ft.) 84 (ft.) 84 (ft.) 90
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 10.5 B	Crosswalk West 10.5 B	Crosswalk North 29.5 C	Crosswalk South 29.5
Number of peds arriving during Don't Walk, $N_{ped}$ (p) Average pedestrian walking speed, $S_p$ (ft/s) Total crossing time, $t$ (s) Total time-space, $TS$ (ft <sup>2</sup> -s) Total crosswalk occupancy time, $T$ (p-s) Number of conflicting right-turning vehicles, $N_{tv}$ (veh) Time-space of right-turning vehicles, $TS_{tv}$ (ft <sup>2</sup> -s) Effective time-space, $TS_E$ (ft <sup>2</sup> -s) Circulation area per pedestrian, $M$ (ft²/p)	0.793333333 4.0 25.6285 88510.5 109 11 5260 83250.5 764.3	0.015555566 4.0 22.9535 79750.5 2 4 1720 78030.5 40794.0	1.618888889 4.0 24.56425 45864 127 23 11040 34824 274.4	2.48055556 4.0 26.258125 48330 208 0 0 48330 232.5

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee	tersections V in SHADED	Vorksheet (HCN cells only	1 2000)	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/10/2008 Project # 2005014		Site Information Intersection Condition Period		N. Wahington & Thacher & Valenti EXISTING AM PEAK HOUR	
Inputs Cycle length, C (sec.)				Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	
Effective green Red phase Thacher Street 0	(bec	(ped/sec.)	(ped/C)	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>e</sub> (ft.)	N <sub>n</sub> (ft.) 12 0
0 000		0.01		Crosswalk East Length, Le (ft.)	
N. Washington 73		90.0	9	Crosswalk West Length, L <sub>w</sub> (ft.)	_
N. Washington 100		0.00	0	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	_
Crosswalk Time-Space Analysis					
Average delay d (c)	Cross	Crosswalk East	Crosswalk West	Crosswalk North	Crosswalk South
Pedestrian Delay LOS		} <b>4</b>	€ 4	ြို့ပ	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0	0	2.129166667	0.08333333
Average pedestrian walking speed, S <sub>p</sub> (ft/s)		4.0	4.0	4.0	4.0
Total crossing time, t (s)		9.45	16.2	21.1790625	3.2225
Total time-space, TS (ft²-s)	58	29062.5	58344	15330	0
Total crosswalk occupancy time, T (p-s)		24	15	124	·
Number of conflicting right-turning vehicles, N <sub>v</sub> (veh)		0	0 (	0 (	0 (
Time-space of right-turning vehicles, TStv (ft*-s)		0	0	0	0
Effective time-space, $TS_E$ (ff <sup>2</sup> -s)	 	29062.5	58344	15330	0
Circulation area per pedestrian, M (ft/p)		1230.2	3928.9	124.1	0.0
Pedestrian Circulation Area LOS	_	<b>4</b>	∢	<b>⋖</b>	No Crosswalk

,

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	alized Inte nter data i	rsections \ n SHADED	Norksheet (HCN cells only	И 2000)	
General Information		Site Information			
Analyst TK Company Howard/Stein-Hudson		Intersection Condition	North W	North Washington Street/Beverly Street EXISTING	Street
		Period	AM PEA	AM PEAK HOUR	
Project # 2005014					
Inputs				Geometric Inputs	
Cycle length, C (sec.)				Crosswalk East Width, W <sub>e</sub> (ft.)	/ <sub>e</sub> (ft.) 0
				Crosswalk West Width, W <sub>w</sub> (ft.)	
Effective green Red phase	(bed/hour)	(bed/sec.)	(bed/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
100 V <sub>e</sub>	0	0.00	0	Crosswalk South Width, W <sub>s</sub> (ft.)	
Beverly Street 38 42 V <sub>w</sub>	33	0.01	_	Crosswalk East Length, L <sub>e</sub> (ft.)	
N Washington Street	65	0.02	2	Crosswalk West Length, L <sub>w</sub> (ft.)	L <sub>w</sub> (ft.) 38
N Washington Street V <sub>s</sub>	<del>=</del>	00.00	0	Crosswalk North Length, L <sub>n</sub> (ft.)	
				Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>s</sub> (ft.) 0
Crosswalk Time-Space Analysis					
	The state of the s		<b>Crosswalk West</b>	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)			8.8	15.7	50.0
Pedestrian Delay LOS			A	В	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>eed</sub> (p)			0.1925	0.50555556	0.15277778
Average pedestrian walking speed, S <sub>p</sub> (ft/s)			4.0	4.0	4.0
Total crossing time, t (s)			12.7433125	17.56375	3.24125
Total time-space, TS (ft²-s)			24282	25222.5	0
Total crosswalk occupancy time, T (p-s)			12	32	<b>-</b> -
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)		·	<b>o</b>	0	0
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)			4453.333333	0	0
Effective time-space, TS <sub>E</sub> (ft²-s)			19828.66667	25222.5	0
Circulation area per pedestrian, M (ft²/p)			1697.5	795.4	0.0
Pedestrian Circulation Area LOS			∢	∢	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalized Intersec Enter data in SH	nalysis at Signalized Intersections Worksheet (He Please Note: Enter data in SHADED cells only	CM 2000)	
General Information	Site	Site Information		
Analyst MML/TK Company Howard/Stein-Hudson	Inter	Intersection N. Washin EXISTING	N. Washington & Cooper & Cross EXISTING	
• •	Period		AM PEAK HOUR	
Project # ZUU5U14				
Sinduj			Geometric Inputs	
Cycle length, C (sec.)			Crosswalk East Width, W <sub>e</sub> (ft.)	ļ
			Crosswalk West Width, W <sub>w</sub> (ft.)	
Effective green Red phase	(bed/hour) (bed	(bed/sec.) (bed/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
	81 0.	0.02 2	Crosswalk South Width, W <sub>s</sub> (ft.)	
29		03 3	Crosswalk East Length, L <sub>e</sub> (ft.)	(ft.) 26
shington 8 100			Crosswalk West Length, L <sub>w</sub> (ft.)	
Cross 57 V <sub>s</sub>			Crosswalk North Length, L <sub>n</sub> (ft.)	
			Crosswalk South Length, L <sub>s</sub> (ft.)	-s (ft.) 24
Crosswalk Time-Space Analysis				
	Crosswalk East	ast Crosswalk West	est Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	1.0	4.2	50.0	16.2
Pedestrian Delay LOS	A	A	No Crosswalk	В
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.1575	0.418888889	0	0.649166667
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	4.0	4.0
Total crossing time, t (s)	9.7354375		3.2	9.375275
Total time-space, TS (ft²-s)	25818	21138	0	0096
Total crosswalk occupancy time, T (p-s)	22	28	0	21
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)	0	0	0	0
Time-space of right-turning vehicles, TS <sub>v</sub> (ft <sup>2</sup> -s)	0	0	0	0
Effective time-space, TS <sub>E</sub> (ff <sup>2</sup> -s)	25818	21138	0	0096
Circulation area per pedestrian, M (ft²/p)	1178.6	747.1	0.0	449.5
Pedestrian Circulation Area LOS	∢	∢	No Crosswalk	∢

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	is at Signalized Intersections Workshee e Note: Enter data in SHADED cells only	ns Worksheet (HCN DED cells only	2000)	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/10/2008 Project # 2005014	Site Inform Intersection Condition Period	mation	N. Washington & New Chardon & Surface & Off-ramp EXISTING AM PEAK HOUR	. Off-ramp
Inputs Cycle length, C (sec.)			Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)	0 12
Effective green Red phase Off Ramps S8 42 V <sub>e</sub>	(ped/hour) (ped/sec.) 0 0.00	;) (ped/C) 0	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	0
42	_	4 (	Crosswalk East Length, L <sub>e</sub> (ft.)	0 2
N. Washington 38 V <sub>n</sub> Surface Artery 62 V <sub>s</sub>	87 0.02 0 0.00	N O	Crosswalk West Lengtn, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	84 0
Crosswalk Time-Space Analysis:		_		
Average delay, d <sub>n</sub> (s)	Crosswalk East	Crosswalk West	Crosswalk North Crossw 7.2	Crosswalk South
Pedestrian Delay LOS	No Crosswalk	A		No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0	0.7525	0.459166667	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	4.0	4.0
Total crossing time, t (s)	3.2	33.1193125		3.2
Total time-space, TS (ft <sup>2</sup> -s)	0	61582.5	32256	0
Total crosswalk occupancy time, T (p-s)  Number of conflicting right-furning vehicles   N. (veh)	0 0	119	37	0 0
Time-space of right-turning vehicles, TS <sub>Iv</sub> (ft <sup>2</sup> -s)		0	0	. 0
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> s)	0	61582.5	32256	0
Circulation area per pedestrian, M (ft²/p)	1	518.9	872.2	1
Pedestrian Circulation Area LOS	No Crosswalk	∢	No Cr	No Crosswalk

Red phase (ped 43 V <sub>e</sub> 143 V <sub>e</sub> 143 V <sub>e</sub> 143 V <sub>e</sub> 25 V <sub>e</sub> 1 V <sub>e</sub> 25 V <sub>e</sub> 1 V <sub>e</sub> 2 V <sub>e</sub> 1 V <sub>e</sub>	Site Information Intersection Condition Period Mhour) (ped/sec.) (period 136 0.04 382 0.25 2 239 0.07 0	d/C)	Causeway Street/Legends Way EXISTING AM PEAK HOUR  Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>n</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.) Crosswalk West Length, L <sub>e</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.)	V <sub>e</sub> (ft.) 10 N <sub>w</sub> (ft.) 10 N <sub>w</sub> (ft.) 10 W <sub>s</sub> (ft.) 0 L <sub>e</sub> (ft.) 80
Effective green Red phase (ped 43 Ve 1 65 25 Vn 2 25 Vs Ns Conting Don't Walk, Nped (p)	[編集]	(ped/C) 3 22 6 6	Geometric Inputs Crosswalk East Width, W Crosswalk West Width, V Crosswalk North Width, Crosswalk South Width, Crosswalk East Length, Crosswalk West Length, Crosswalk North Length,	
Effective green       Red phase       (ped         43       V <sub>e</sub> 1         65       25       V <sub>n</sub> 2         pace Analysis       X <sub>n</sub> X <sub>n</sub> 0         ng during Don't Walk, N <sub>ped</sub> (p)       (p)       (ped		(ped/C) 3 22 6	Crosswalk East Width, W Crosswalk West Width, V Crosswalk North Width, Crosswalk South Width, Crosswalk East Length, I Crosswalk West Length, I Crosswalk North Length,	
Effective green Red phase (ped 43 Ve 1 Ve 1 Ve 1 Ve 65 25 Vm 2 Ve 25 Vs Ve 25 Vs Ve 25 Vs Ve 25 Vs Ve 25 Ve 1 Ve 25 Ve 2		(ped/C) 3 22 6	Crosswalk North Width, Crosswalk East Length, Crosswalk West Length, Crosswalk Worth Length, Crosswalk North Length,	
43		22 9 0	Crosswalk South Width, Crosswalk East Length, I Crosswalk West Length, Crosswalk North Length,	
13		6 6	Crosswalk East Length, I Crosswalk West Length, Crosswalk North Length,	
65   25   V <sub>n</sub>   2   V <sub>s</sub>   25   V <sub>s</sub>   V <sub>s</sub>   V <sub>s</sub>   25   V <sub>s</sub>		9 0	Crosswalk West Length, Crosswalk North Length,	
pace Analysis  SS  ing during Don't Walk, N <sub>ped</sub> (p)			Crosswalk North Length,	
ing during Don't Walk, N <sub>ped</sub> (p)		<u> </u>		
ipace Analysis  Ss ing during Don't Walk, N <sub>ped</sub> (p)			Crosswalk South Length, L <sub>s</sub> (ft.)	, L <sub>s</sub> (ft.) 0
<b>)S</b> ing during Don't Walk, N <sub>ped</sub> (p)				
ing during Don't Walk, N <sub>ped</sub> (p)	Crosswalk East	Crosswalk West	Crossv	Crosswalk South
	10.3	10.3	3.5	•
	В	В	A	No Crosswalk
	0.81222222	5.32722222	0.829861111	,
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	4.0	4.0
	21.4193	24.63835	12.1740625	•
Total time-space, TS (ft <sup>-</sup> s)	27360	29600	21218.75	•
Total crosswalk occupancy time, T (p-s)	73	549	73	,
Naminal of community rights and remaining vertices, $N_{\rm V}$ (vertical space of right-turning vehicles, $T_{\rm S}$ , $(\#^2$ -s)	o <del>C</del>	<b>&gt;</b> C	o 6	
Effective time-space, TS= (tf²-s)	27350	29600	21208.75	•
Circulation area per pedestrian, M (ft²/p)	375.6	53.9	291.6	•
Pedestrian Circulation Area LOS	∢	Ø	∢	No Crosswalk

General Information								
CARACTERISTICS AND ALCOHOLOGIC TO A STATE OF THE PARTY OF				S	Site Information	lon		
Analyst MML/TK	T	opposed finisher er man spekkondokondit bentra reflere i Mandalakse filosofa da	mat de bereikken stocken versenderschilden sind Addissert (1947), bis hand den		Intersection	North Wa	shington Street/Er	dicott Street
	Howard/Stein-Hudson	u		Ö	Condition	EXISTIN	EXISTING	
Date 6/10/2008	800			ď	Period	AM PEAK HOUR	K HOUR	
Project # 2005014	14							
Inputs						Geometr	Geometric Inputs	
	Ped Volumes	nmes	Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, W <sub>w</sub> (ft.)	0
Endicott Street	10	0.00	46	0.01		Crosswalk	Crosswalk North Width, W <sub>n</sub> (ft.)	0
0	0	00.0	0	00.0		Crosswalk	Crosswalk South Width, W <sub>s</sub> (ft.)	
North Washington Stre	0	0.00	0	0.00		Crosswalk	Crosswalk East Length, L <sub>e</sub> (ft.)	29
North Washington Stre	0	00.00	0	0.00		Crosswalk	Crosswalk West Length, L <sub>w</sub> (ft.)	0
						Crosswalk Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	06 (
Crosswalk Time-Space Analysis	e Analysis							
A MARINANA MANAGAMAN	in a committee of the c	na Registratura in managan kanagan kan	Crosswalk East	lk East	<b>Crosswalk West</b>	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, $S_p$ (ft/s)	ng speed, $S_p$ (ft/	(9	4.0		4.0		4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)			29		0		06	06
Single pedestrian critical gap, $t_{\rm c}$ (s)	$Jap,t_c(s)$		10.25		3.00		25.50	25.50
Typical pedestrian number in crossing platoon,	er in crossing pla	toon, N <sub>c</sub>	1.00	0	00.00		0.00	0.00
Spatial pedestrian distribution, $N_{\text{p}}$	ıtion, N <sub>ρ</sub>		2	•	•		ı	•
Group critial gap,			11.65	35	1		1	1
Vehicular flow rate, V			0.01	_	0.00		0.00	0.00
Average pedestrian delay, D	, D		0.0	_	ı		,	•
Pedestrain Delay LOS			⋖		No Crosswalk	valk	No Crosswalk	No Crosswalk

	Crosswalk		t Unsignaliz Note: Enter	zed Inters data in SI	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst MML/TK Company Howard/S Date 6/10/2008 Project # 2005014	ation MML/TK Howard/Stein-Hudson 6/10/2008 2005014	ou			Site Information Intersection No EX Condition EX Period	<b>on</b> North Washington Street/Medford Street EXISTING AM PEAK HOUR	edford Street
Пррик					9	Geometric Inputs	
	Ped Volum	lumes	Traffic Volumes	olumes	Ö (	Crosswalk East Width, W <sub>e</sub> (ft.)	ŀ
	(ped/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	5 č	Crosswalk West Width, W <sub>w</sub> (ft.) Crosswalk North Width W (ft.)	12
Medford Street	56	0.01	98	0.02	· Ö	Crosswalk South Width, W <sub>s</sub> (ft.)	
N Washington Street	4	0.00	1889	0.52	ō 	Crosswalk East Length, Le (ft.)	1
N Washington Street	0	0.00	1935	0.54	Ö	Crosswalk West Length, L <sub>w</sub> (ft.)	46
					ö ö 	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	_
Crosswalk Time-Space Analysis	e Analysis						
		inningsstands Vijskillstakkanakai kati Adamin on ohologistandi 1903 ta	Crosswalk East	ik East	Crosswalk West	st Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ng speed, $S_p$ (fi	/s)	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	(s) :		3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)			0		46	80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	$Jap,t_c(s)$		3.00	0	14.50	23.00	23.00
Typical pedestrian number in crossing platoon, N <sub>c</sub>	r in crossing pl	atoon, N <sub>c</sub>	0.0	0	1.02	369.31	1.00
Spatial pedestrian distribution, N <sub>p</sub>	tion, N <sub>p</sub>		1		7	•	ı
Group critial gap,			ı		15.67	•	ı
Vehicular flow rate, V			0.00	0	0.02	0.52	0.54
Average pedestrian delay, D	۵		1		3.33	•	1
Pedestrain Delay LOS			No Crosswalk	swalk	∢	No Crosswalk	No Crosswalk

|--|

General Information	nation				Site Information	tion		
Analyst Company	MML/TK Howard/Stein-Hudson	UO UO	The state of the s	AND THE CONTRACTOR AND THE CONTR	Intersection Condition	Causewa	Causeway Street/Canal Street EXISTING	chen indensity de la company de la compa
Date	6/10/2008				Period	AM PEA	AM PEAK HOUR	
Project #	2005014							
Inputs						Geomet	Geometric Inputs	
	Ped Volum	olumes	Traffic Volumes	olumes		Crosswall	Crosswalk East Width, We (ft.)	12
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswall	Crosswalk West Width, Ww (ft.)	12
Causeway Street	115	0.03	1251	0.35		Crosswall	Crosswalk North Width, Wn (ft.)	12
Causeway Street	125	0.03	1214	0.34	-	Crosswall	Crosswalk South Width, W <sub>s</sub> (ft.)	10
Driveway	1212	0.34	25	0.01		Crosswall	Crosswalk East Length, Le (ft.)	84
Canal Street	866	0.28	202	90.0		Crosswall	Crosswalk West Length, L <sub>w</sub> (ft.)	
						Crosswall Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	12 22
Crosswalk Tin	Crosswalk Time-Space Analysis				_			
			Crosswalk East	ılk East	Crosswalk West	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestri	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	up time, t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	alk, L (ft)		84		77		12	22
Single pedestriar	Single pedestrian critical gap, t <sub>c</sub> (s)		24.00	8	22.2E		00.9	8.50
Typical pedestria	Typical pedestrian number in crossing platoon, $N_{\rm c}$	latoon, N <sub>c</sub>	353.	2	169.7	<u>۔۔۔</u>	1.02	1.36
Spatial pedestrian distribution, N <sub>p</sub>	n distribution, N <sub>p</sub>		236	တ	114		7	2
Group critial gap,			494.50	20	248.25	10	7.40	10.30
Vehicular flow rate, V	te, V		0.35	'n	0.34		0.28	90:0
Average pedestrian delay, D	ian delay, D		>45	φ.	>45		16.89	3.64
Pedestrain Delay LOS	y LOS		ıL		ш.		ပ	⋖

	Crosswalk		rt Unsignali: Note: Enter	zed Inters data in Sh	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst MML Company Howe Date 6/10/	<b>ation</b> MML/TK Howard/Stein-Hudson 6/10/2008 2005014	uc			Site Information Intersection Cau Condition EXI Period AM	on Causeway Street/Medford Street EXISTING AM PEAK HOUR	treet
sindul					ee.	Geometric Inputs	
<del>:</del>	Ped Volumes	lumes	Traffic Volumes	olumes	Cro	Crosswalk East Width, We (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	Crö	Crosswalk West Width, Ww (ft.)	0
Causeway Street	26	0.01	1100	0.31	Crò	Crosswalk North Width, Wn (ft.)	0
Causeway Street	34	0.01	1142	0.32	Crò	Crosswalk South Width, W <sub>s</sub> (ft.)	_
0	0	0.00	0	0.00	Crò	Crosswalk East Length, Le (ft.)	[
Medford Street	308	60.0	92	0.03	Cro	Crosswalk West Length, L <sub>w</sub> (ft.)	58
						Crosswalk North Length, $L_n$ (ft.) Crosswalk South Length, $L_s$ (ft.)	- 0
Crosswalk Time-Space Analysis	ace Analysis						
			Crosswalk East	ılk East	Crosswalk West	t Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	lking speed, S <sub>p</sub> (ft	(s)	4.0	0	4.0	4.0	0.4
Pedestrian start-up time, t (s)	e, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	(#)		58	~	58	0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, t <sub>c</sub> (s)		17.50	20	17.50	3.00	9.25
Typical pedestrian number in crossing platoo	ber in crossing pl	atoon, N <sub>c</sub>	5.71		8.27	0.00	1.08
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		1			•	2
Group critial gap,			1		ı	ı	10.65
Vehicular flow rate, V			0.31	Σ.	0.32	0.00	0.03
Average pedestrian delay, D	lay, D		1	**	•	1	1.59
Pedestrain Delay LOS	40		No Crosswalk	swalk	No Crosswalk	No Crosswalk	ď

	Crosswalk	alk Analysis a Please l	t Unsignaliz Note: Enter	zed Inters data in Sł	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	ksheet (I	HCM 2000)	
General Information Analyst MML Company How Date 6/10/ Project # 2005	ation MML/TK Howard/Stein-Hudson 6/10/2008 2005014	on on			Site Information Intersection Ca Condition EX Period AN	Canal Street/Vale EXISTING AM PEAK HOUR	ion Canal Street/Valenti Way EXISTING AM PEAK HOUR	
Inputs						Geometric Inputs	ic Inputs	
	Ped Volumes	olumes	Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	_	Crosswalk	Crosswalk West Width, Ww (ft.)	10
Driveway	0	0.00	0	00.00	_	Crosswalk	Crosswalk North Width, Wn (ft.)	10
Valenti Way	320	60.0	109	0.03	_	Crosswalk	Crosswalk South Width, Ws (ft.)	10
Canal Street	524	0.15	166	0.05	_	Crosswalk	Crosswalk East Length, Le (ft.)	0
Canal Street	91	0.03	157	0.04	_	Srosswalk	Crosswalk West Length, L <sub>w</sub> (ft.)	26
						Crosswalk Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	28
July Alemason	Space Analiteic							
Closswain IIII	G OSSWAIN IIIIE-Space Allarysis		Crosewalk East	IV Eact	Crosewalk West		Topografic North	Crosomally Counth
Average pedestrial	Average pedestrian walking speed (S. (#/s)	(s)		ווי רמזו	Giosswain v		Closswalk Nottil	Closswain South
Pedestrian start-up time, t (s)	time, t (s)	(	3.0		3.0		3.0	3. S
Length of crosswalk, L (ft)	'k, L (ft)		0		26		28	23
Single pedestrian critical gap, t <sub>c</sub> (s)	ritical gap, $t_c$ (s)		3.00	0	9.50		10.00	8.75
Typical pedestrian	Typical pedestrian number in crossing platoo	latoon, N <sub>c</sub>	0.0	0	1.10		1.26	1.04
Spatial pedestrian distribution, N <sub>p</sub>	distribution, N <sub>p</sub>		1		2		7	2
Group critial gap,			1		10.90		11.80	10.15
Vehicular flow rate, V	>,		00:0	0	0.03		0.05	0.04
Average pedestrian delay, D	n delay, D		ı	•	2.01		3.88	2.62
Pedestrain Delay LOS	SOT		No Crosswalk	swaik	٧		∢	∢

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	Inalized Interse Enter data in SI	rsis at Signalized Intersections Worksheet se Note: Enter data in SHADED cells only	(HCM 2000	((	
General Information	Sife	Site Information			
Analyst MML/TK Company Howard/Stein-Hudson	Inter	Intersection No Condition E	orth Washingt XISTING	North Washington Street/Causeway Street EXISTING	Street
1 - 1 - 1	Period		PM PEAK HOUR	R	
luputs			999	Geometric Inouts	
Cycle length, C (sec.)			Cros	Crosswalk East Width, W <sub>e</sub> (ft.)	ft.) 12
			Cros	Crosswalk West Width, Ww (ft.)	(ft.) 12
Effective green Red phase	(bed/hour) (pec	(bed/sec.) (bed/C)	Cros	Crosswalk North Width, W <sub>n</sub> (ft.)	
Commercial Street 77 63 V <sub>e</sub>		0.01	Cros	Crosswalk South Width, W <sub>s</sub> (ft.)	
Causeway Street 8/7 8/7 63 V <sub>w</sub>	13 0		Cros	Crosswalk East Length, Le (ft.)	
N Washington Street SS 7 V <sub>n</sub>		0.00	Cros	Crosswalk West Length, L <sub>w</sub> (ft.)	(ft.) 79
N Washington Street 87 V <sub>s</sub>	84 0	.02 4	Cros	Crosswalk North Length, L <sub>n</sub> (ft.)	
			Cros	Crosswalk South Length, L <sub>s</sub> (ft.)	s (ft.) 90
Crosswalk Time-Space Analysis			-		
	Crosswalk East	Cross		Crosswalk North	Crosswalk South
Average delay, $d_p$ (s)	13.2	13.2		25.2	25.2
Pedestrian Delay LOS	В	В		S	ပ
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.27125	0.11375		0.084583333	1.015
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0		4.0	4.0
Total crossing time, t (s)	25.51103125	- 22	9375	24.21903125	25.928375
Total time-space, TS (ft²-s)	81034.5	73	1.5	52920	55890
Total crosswalk occupancy time, T (p-s)	33	12		7	91
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)	19	က		12	0
Time-space of right-turning vehicles, TS $_{ m v}$ (ft <sup>2</sup> -s)	0868			2700	0
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)	72054.5		1.5	47220	55890
Circulation area per pedestrian, M (ft²/p)	2186.7	5741.6	9.	6684.7	615.9
Pedestrian Circulation Area LOS	∢	∢		∢	∢

General Information           Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/11/2008           Project #         2005014			Site Information Intersection Condition Period		North Washington Street/Thacher Street/Valenti Way EXISTING PM PEAK HOUR	r Street/Valenti Way
					Geometric Inputs Crosswalk East Width, We (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	N <sub>e</sub> (ft.) 12 W <sub>w</sub> (ft.) 12
Effective green Red phase Thacher Street 0	>	(ped/hour) 139	(ped/sec.) 0.04	(ped/C) 4	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	1
Valenti Way 0	` <b>&gt;</b> *	61	0.02	2	Crosswalk East Length, Le (ft.)	
27	> :	251	0.07	7	Crosswalk West Length, L <sub>w</sub> (ft.)	, L <sub>w</sub> (ft.) 52
N. Wasnington 100	>°	0	0.00	5	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis		Crossw	Crosswalk East	Crosswalk West	Crosswalk North	Grosswalk South
Average delay, d <sub>p</sub> (s)			0.0	0.0		50.0
Pedestrian Delay LOS			A	A	O	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)			0	0	2.544861111	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)		4	4.0	4.0	4.0	4.0
Total crossing time, t (s)		o o	9.45	16.2	21.27259375	3.2
Total time-space, TS (ft²-s)		290	29062.5	58344	15330	0
Total crosswalk occupancy time, T (p-s)			36	27	148	0
Number of conflicting right-turning vehicles, N <sub>W</sub> (veh)			0	0	0	0
Time-space of right-turning vehicles, TS <sub>w</sub> (ft²-s)			0	0	0	0
Effective time-space, TS <sub>E</sub> (ft²-s)		290	29062.5	58344	15330	0
Circulation area per pedestrian, M (ft²/p)		3/	796.5	2125.5	103.4	•
Pedestrian Circulation Area LOS			∢	∢	∢	No Crosswalk

General Information		Site Information	ntion		
Analyst         TK           Company         Howard/Stein-Hudson           Date         6/18/2008           Project #         2005014		Intersection Condition Period		North Washington Street/Beverly Street EXISTING PM PEAK HOUR	<u>Yreet</u>
Inputs Cycle length, C (sec.) 100				Geometric Inputs Crosswalk East Width, We (ft.) Crosswalk West Width, Ww, (ft.)	
Effective green Red phase	(ped/hour)	ur) (ped/sec.)	(bed/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
(a)		0.02	» «	Crosswalk East Length, Le (ft.)	
<u> </u>		0.03	e .	Crosswalk West Length, L <sub>w</sub> (ft.)	-w (ft.) 38
N Washington Street	V <sub>s</sub> 17	0.00	0	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis					
Average delav. d. (s)			Crosswalk West	Crosswalk North	Crosswalk South 50.0
Pedestrian Delay LOS			В	В	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)			0.48875	0.64625	0.236111111
Average pedestrian walking speed, S <sub>p</sub> (ft/s)			4.0	4.0	4.0
Total crossing time, t (s)			12.80996875	17.59540625	3.26375
Total time-space, TS (ft²-s)	<del></del>		20178	31378.5	0
Total crosswalk occupancy time, T (p-s)	···		25	48	2
Number of conflicting right-turning vehicles, $N_{ m lv}$ (veh)	<u></u>		∞	0	0
Time-space of right-turning vehicles, $TS_{\mathrm{tv}}$ (ff <sup>2</sup> -s)			3840	0	0
Effective time-space, $TS_E$ (ff <sup>2</sup> -s)			16338	31378.5	0
Circulation area per pedestrian, M (ft²/p)	-		665.4	648.5	0.0
Pedestrian Circulation Area LOS			⋖	4	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	gnalized Inte Enter data ir	rsections V	Vorksheet (HCIV	1 2000)	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/11/2008		Sife Information Intersection Condition Period		N. Washington & Cooper & Cross EXISTING PM PEAK HOUR	
Project # 2005014					
Cycle length, C (sec.)				Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	(ft.) 12 (ft.) 12
Effective green Red phase	(ped/hour)	(ped/sec.)	(ped/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
Sumner Tunnel 33 V.	175	0.05	າເດ	Crosswalk South Wildut, Ws (It.) Crosswalk East Length, Le (ft.)	vs (ft.) 26
		0.00	0	Crosswalk West Length, L <sub>w</sub> (ft.)	
Cross 53 V <sub>s</sub>		0.03	m	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>s</sub> (ft.) 0
Crosswalk Time-Space Analysis	Crocewalk Fact	alk East	Crosewalk West	Grosswalk North	Crosewalk South
Average delay, d <sub>p</sub> (s)	1.0	0 0	5.4	50.0	14.0
Pedestrian Delay LOS	4		A	No Crosswalk	В
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.235277778	77778	0.802083333	0	0.772916667
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	0	4.0	4.0	4.0
Total crossing time, t (s)	9.7529375	9375	9.88046875	3.2	9.4086875
Total time-space, TS (ft²-s)	25818	318	19890	0	10560
Total crosswalk occupancy time, T (p-s)	33	e .	48	0 (	27
Number of conflicting right-turning vehicles, $N_{\rm V}$ (Veh.) [Time-space of right-turning vehicles, TS., (#-s.)	o c		o c	<b>o</b> C	o c
Effective time-space, TS <sub>E</sub> (ft²-s)	25818	318	19890	0	10560
Circulation area per pedestrian, M (ft²/p)	787.6	9.7	414.1	•	384.8
Pedestrian Circulation Area LOS	∢		∢	No Crosswalk	∢

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only	nalized Inte Enter data ir	rsections W n SHADED c	orksheet (HCM ells only	<b>Z000)</b>	
General Information           Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/11/2008           Project #         2005014		Site Information Intersection Condition Period		North Washington Street/New Chardon/Sufrace/Off-ramp EXISTING PM PEAK HOUR	rdon/Sufrace/Off-ramp
Cycle length, C (sec.)  Cycle length, C (sec.)  Effective green Red phase  Off Ramps  New Chardon  N. Washington  Surface Artery  Surface Artery  Cycle length, C (sec.)  Effective green  A 6 Ve  Ve  Vo  Surface Artery  Ve  Vo  Surface Artery  Ve  Ve  Vo  Surface Artery  Ve  Ve  Vo  Surface Artery	(ped/hour) 0 162 25 0	(ped/sec.) ( 0.00 0.05 0.01 0.00	(ped/C) 0 5 1	Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk North Width, W <sub>n</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)  Crosswalk West Length, L <sub>w</sub> (ft.)  Crosswalk North Length, L <sub>w</sub> (ft.)  Crosswalk South Length, L <sub>r</sub> (ft.)	(ft.) 0 (ft.) 0 (v, (ft.) 12 (v, (ft.) 0 (ft.) 0 (ft.) 0 (ft.) 119 (ft.) 48 (ft.) 0 (ft.) 48
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 10.6 No Crosswalk	alk East .6 sswalk	Crosswalk West 10.6 B	Crosswalk North 5.8 A	Crosswalk South 5.8 No Crosswalk
Number of peds arriving during Don't Walk, $N_{ped}$ (p) Average pedestrian walking speed, $S_p$ (ft/s) Total crossing time, $t$ (s) Total time-space, TS (ft²-s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, $N_{tv}$ (veh) Time-space of right-turning vehicles, $TS_{tv}$ (ft²-s) Effective time-space, $TS_E$ (ft²-s) Circulation area per pedestrian, $M$ (ft²/p) Pedestrian Circulation Area LOS	0 4.0 3.2 0 0 0 0 0 0	0 2 sswalk	1.035 4.0 33.182875 55870.5 149 0 0 55870.5 374.2	0.118055556 4.0 15.2265625 34560 11 0 0 34560 3268.4	0 4.0 3.2 0 0 0 0 0 0

Plea		nter data i	Please Note: Enter data in SHADED cells only	cells only	Please Note: Enter data in SHADED cells only	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/11/2008 Project # 2005014			<i>Site Information</i> Intersection Condition Period		Causeway Street/Haverhill Street/Legends Way EXISTING PM PEAK HOUR	Legends Way
Inputs Cycle length, C (sec.)					Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.)	
Effective green Red phase		(bed/hour)	(bed/sec.)	(bed/C)	Crosswalk West Width, W <sub>w</sub> (ft.) Crosswalk North Width, W <sub>n</sub> (ft.)	
7.2	>°	232	90.0	9	Crosswalk South Width, W <sub>s</sub> (ft.)	
Causeway Street 53	>* >	93	0.03	<sub>د</sub>	Crosswalk East Length, L <sub>e</sub> (ft.)	İ
et (1)	- > <sup>~</sup>	247	0.07	2 ~	Crosswalk North Length, L., (ft.)	L, (ft.) 35
					Crosswalk South Length, L <sub>s</sub> (ft.)	_
Crosswalk Time-Space Analysis			X			
		Crossw	Crosswalk East	Crosswalk West	Crosswalk North	Crosswalk South
Average delay, d <sub>p.</sub> (s) Pedestrian Delay LOS		7	14.0 <b>B</b>	14.0 <b>B</b>	3.1 <b>A</b>	3.1 No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		1.707.1	1.70777778	0.684583333	1.302083333	0.857638889
Average pedestrian walking speed, S <sub>p</sub> (ft/s)		4	4.0	4.0	4.0	4.0
Total crossing time, t (s)		21.6	21.6611	23.3848375	12.3015625	9.6815625
Total time-space, TS (ft²-s)		27.	27360	29600	24718.75	17968.75
Total crosswalk occupancy time, T (p-s)		<del>Č</del>	140	09 6	128	99
Time-space of right-turning vehicles, 14th (veh)		11 11	11 11111111	o c	11 1111111	o c
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)		27348	27348.88889	29600	24707.63889	17968.75
Circulation area per pedestrian, M (ft²/p)		19	195.9	490.0	192.8	270.5
Pedestrian Circulation Area LOS		•	<b>⋖</b>	4	∢	No Crosswalk

	Crosswalk		t Unsignali Note: Enter	ized Inters data in SI	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	rksheet s only	(HCM 2000)	
General Information Analyst MML/TK Company Howard// Date 6/11/200 Project # 2005014	ation MML/TK Howard/Stein-Hudson 6/11/2008 2005014	uo			Site Information Intersection No EX Condition EX Period AM	Vorh Washington EXISTING AM PEAK HOUR	on North Washington Street/Endicott Street EXISTING AM PEAK HOUR	dicott Street
Inputs						Geomet	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes,	And the first of the field of t	Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, Ww (ft.)	0
Endicott Street	4	0.00	14	0.00		Crosswalk	Crosswalk North Width, Wn (ft.)	0
0	0	0.00	0	00.0		Crosswalk	Crosswalk South Width, Ws (ft.)	
North Washington Str∉	0	0.00	0	0.00		Crosswalk	Crosswalk East Length, Le (ft.)	29
North Washington Stre	0	0.00	0	0.00		Crosswalk	Crosswalk West Length, $L_{\rm w}$ (ft.)	
						Crosswall Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	06
Crosswalk Time-Space Analysis	e Analysis							
			Crosswalk East	alk East	<b>Crosswalk West</b>	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	g speed, S <sub>p</sub> (ft	(s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	(s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			29	o	0		06	06
Single pedestrian critical gap, t <sub>c</sub> (s)	ap, t <sub>c</sub> (s)		10.25	25	3.00		25.50	25.50
Typical pedestrian number in crossing platoo	in crossing pl	atoon, N <sub>c</sub>	1.0	00	0.00		0.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ion, N <sub>p</sub>		2	~.	ı		ı	i
Group critial gap,			1.	65	ı		1	1
Vehicular flow rate, V			0.0	00	00.00		0.00	0.00
Average pedestrian delay, D	۵		0.5	27	ı		1	•
Pedestrain Delay LOS			∢		No Crosswalk	valk	No Crosswalk	No Crosswalk

	Crosswalk		alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	zed Inters data in SI	ections Wo	rksheet s only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst MML/TK Company Howard/Si Date 6/11/2008 Project # 2005014	<b>ation</b> MML/TK Howard/Stein-Hudson 6/11/2008 2005014	oo			Site Information Intersection No EX Condition EX Period	tion North Was EXISTING PM PEAK	on North Washington Street/Medford Street EXISTING PM PEAK HOUR	odford Street
[Inputs	Ped Volumes	semile	Traffic Volumes	semilo		Geome	Geometric Inputs Crosswalk East Width W (# )	U
	(bed/hour)	(ped/sec.)	(veh/hour)	(veh/sec.)		Crosswal	Grosswalk West Width, W <sub>w</sub> (ft.)	12
0	0	0.00	0	0.00		Crosswal	Crosswalk North Width, Wn (ft.)	0
Medford Street	49	0.01	29	0.02		Crosswal	Crosswalk South Width, W <sub>s</sub> (ft.)	0
N Washington Street	5	0.00	1643	0.46		Crosswal	Crosswalk East Length, L <sub>e</sub> (ft.)	0
N Washington Street	4	0.00	1664	0.46		Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.)	1
May:						Crosswal	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	08
Crosswalk Time-Space Analysis	e Analysis				_			
			Crosswalk East	alk East	<b>Crosswalk West</b>	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ng speed, $S_p$ (fi	t/s)	4.0	0	4.0	·-·	4.0	4.0
Pedestrian start-up time, t (s)	(s) :		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			0		46		80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	$Jap,t_c(s)$		3.00	0	14.50		23.00	23.00
Typical pedestrian number in crossing platoo	r in crossing pl	atoon, N <sub>c</sub>	0.0	0	1.02		110.81	100.26
Spatial pedestrian distribution, N <sub>p</sub>	tion, N <sub>p</sub>		1		2		ı	ı
Group critial gap,			•		15.67			•
Vehicular flow rate, V			00:0	8	0.02		0.46	0.46
Average pedestrian delay, D	ٔ ۵		1		2.20		1	ı
Pedestrain Delay LOS			No Crosswalk	sswalk	¥		No Crosswalk	No Crosswalk

	Crosswa	alk Analysis a Please №	t Unsignali: Note: Enter	zed Inters data in Sł	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	(0	
General Information	u .				Site Information	<b>16</b>		
Analyst MMI	MML/TK	ender de la company de la comp	A TO STANDING AND THE CONTROL OF THE	errorden i kaj transasti salistika (* 1940). i salisti kantas kilajak	Intersection	Sauseway Street/Ca	anal Stree	alate i ideorar inaçendi ila bando avado il fattici a utobalo imperio i considenti de esperazioni de esperazioni Y
pany	Howard/Stein-Hudson	on			 6	EXISTING		
Project # 2000	2005014				reriod -	PINI PEAN HOUR		
Inputs			_			Geometric Inputs		
der der Verfalle der Verfalle der Verfalle der Verfalle der Verfalle der Verfalle der Verfalle der Verfalle der	Ped Vo	Ped Volumes	Traffic Volumes	olumes	Andrew Other Statement and Andrew Statement of the Statem	Crosswalk East Width, W <sub>e</sub> (ft.)	W <sub>e</sub> (ff.)	12
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	_	Crosswalk West Width, W <sub>w</sub> (ft.)	, W <sub>w</sub> (ft.)	12
Causeway Street	985	0.27	945	0.26	_	Crosswalk North Width, Wn (ft.)	1, W <sub>n</sub> (ft.)	12
Causeway Street	399	0.11	951	0.26		Crosswalk South Width, W <sub>s</sub> (ft.)	n, W <sub>s</sub> (ft.)	10
Driveway	1903	0.53	25	0.01	_	Crosswalk East Length, Le (ft.)	, L <sub>e</sub> (ff.)	84
Canal Street	890	0.25	215	90:0	_	Crosswalk West Length, L <sub>w</sub> (ft.)	h, L <sub>w</sub> (ft.)	7.7
						Crosswalk North Length, Ln (ft.)	th, L, (ft.)	12
						Crosswalk South Length, L <sub>s</sub> (ft.)	th, L <sub>s</sub> (ft.)	22
Grosswalk Time-Space Analysis	pace Analysis							
			Crosswalk East	ılk East	<b>Crosswalk West</b>	Vest Crosswalk North	North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ılking speed, S <sub>p</sub> (fi	t/s)	4.0		4.0	4.0		4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0		3.0	3.0		3.0
Length of crosswalk, L (ft)	(#)		84		7.7	12		22
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, $\mathbf{t_c}$ (s)		24.00	8	22.25	00.9		8.50
$\ Typical\ pedestrian\ number\ in\ crossing\ platoon,\ N_{\mathrm{c}}$	nber in crossing pl	latoon, N <sub>c</sub>	277.93	93	105.57	1.03		1.36
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		186	9	71	2		2
Group critial gap,			394.33	33	162.75	7.17		10.30
Vehicular flow rate, V			0.26	 9	0.26	0.01		90.0
Average pedestrian delay, D	lay, D		>45	5	>45	0.18		3.93
Pedestrain Delay LOS	<b>6</b> 0		ш		ш	∢		∢

	Crosswalk A	nalysis at Please No	Unsignaliz ote: Enter	zed Inters data in SI	k Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	rksheet ( s only	HCM 2000)	
General Information					Site Information	ion		
Analyst MML/		is destinated dudicumski is discussibilit. In destinated expenses ex-	Annal James III. a chall d'Anlier con l'act a challachtaige general	an constabilitation of the constability of the	Intersection	Causewa	Causeway Street/Medford Street	ediotection construction in reduction of respective constructions and the construction of the construction
Company Howa	Howard/Stein-Hudson				Condition	EXISTING	.0	
	2008				Period	PM PEAK HOUR	K HOUR	
Project # 2005014	014							
<u>Inputs</u>						Geometr	Geometric Inputs	
i Makada - Padalaya wa Makada i Adalaya wa waka kata maka a dalaya wa aka a dalaya da akada ka akada ka akada k I Adalaya ka akada k	Ped Volumes		Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour) (pec	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, Ww (ft.)	0
Causeway Street		0.01	1049	0.29		Crosswalk	Crosswalk North Width, Wn (ft.)	0
Causeway Street	30 00	0.01	1071	0.30		Crosswalk	Crosswalk South Width, W <sub>s</sub> (ft.)	10
0		0.00	0	0.00		Crosswalk	Crosswalk East Length, Le (ft.)	58
Medford Street	202 0	90.0	28	0.02		Crosswalk	Crosswalk West Length, L <sub>w</sub> (ft.)	28
						Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.)	0
						Crosswalk	Crosswalk South Length, L <sub>s</sub> (ft.)	25
Grosswalk Time-Space Analysis	ce Analysis				_			
			Crosswalk East	lk East	Crosswalk West	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ing speed, S <sub>p</sub> (ft/s)		4.0		4.0		4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)	t)		58		58		0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	gap, t <sub>c</sub> (s)		17.50	.00	17.50		3.00	9.25
Typical pedestrian number in crossing platoon, N <sub>c</sub>	er in crossing platoon,	z̈́	3.96	ω	5.81		0.00	1.03
Spatial pedestrian distribution, N <sub>p</sub>	ution, N <sub>p</sub>		1	E C Top Place	1		•	2
Group critial gap,			1	and a second	ı		1	10.65
Vehicular flow rate, V			0.29	တ	0:30		0.00	0.05
Average pedestrian delay, D	y, D		1		1		r	0.97
Pedestrain Delay LOS			No Crosswalk	swalk	No Crosswalk	walk	No Crosswalk	∢

	Crosswalk		t Unsignaliz Note: Enter	zed Inters data in Sł	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst MIMIL Company Howe Date 6/11/ Project # 2005	ation MML/TK Howard/Stein-Hudson 6/11/2008 2005014	uo			Site Information Intersection Ca Condition EX Period PM	on Canal Street/Valenti Way EXISTING PM PEAK HOUR	
Inputs					(G	Geometric Inputs	
	Ped Volum	olumes	Traffic Volumes	olumes	5	Crosswalk East Width, W <sub>e</sub> (ft.)	
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	ວົ	Crosswalk West Width, Ww (ft.)	10
Driveway	0	00.00	0	0.00	ວົ	Crosswalk North Width, Wn (ft.)	1
Valenti Way	219	90.0	40	0.01	ວັ	Crosswalk South Width, W <sub>s</sub> (ft.)	l _
Canal Street	360	0.10	152	0.04	ວົ	Crosswalk East Length, Le (ft.)	0
Canal Street	96	0.03	132	0.04	ວົ	Crosswalk West Length, L <sub>w</sub> (ft.)	
					<b>δ</b> (	Crosswalk North Length, L <sub>n</sub> (ft.)	58 28
					5	Crosswalk South Length, L <sub>s</sub> (ft.	
Crosswalk Time-Space Analysis	oace Analysis						
			Crosswalk East	lk East	<b>Crosswalk West</b>	Crossv	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	alking speed, S <sub>p</sub> (f.	t/s)	4.0		4.0	0.4	4.0
Pedestrian start-up time, t (s)	ie, t (s)		3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)	(ft)		0		56	28	23
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, ${\sf t_c}$ (s)		3.00	0	9.50	10.00	8.75
Typical pedestrian number in crossing platoon, N <sub>c</sub>	nber in crossing pl	latoon, N <sub>c</sub>	0.0	0	1.03	1.18	1.04
Spatial pedestrian distribution, N <sub>p</sub>	ribution, N <sub>p</sub>		Ì	-	2	2	2
Group critial gap,			1		10.90	11.60	10.15
Vehicular flow rate, V			0.00	0	0.01	0.04	0.04
Average pedestrian delay, D	lay, D		ľ		69.0	3.37	2.15
Pedestrain Delay LOS	Ø		No Crosswalk	swalk	۷	∢	4

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalized Interse Enter data in S	nalysis at Signalized Intersections Worksheet ( Please Note: Enter data in SHADED cells only	<b>ЧСМ 2000)</b>	
General Information	Site	Site Information		
Analyst MML/TK Company Howard/Stein-Hudson	Inte		North Washington Street/Causeway Street	eet
•	Period		AM PEAK HOUR	
Project # 2005014				
Inputs			Geometric Inputs	
Cycle length, C (sec.)			Crosswalk East Width, W <sub>e</sub> (ft.)	
			Crosswalk West Width, W <sub>w</sub> (ft.)	12
Effective green Red phase	(bed/hour) (pe	(ped/sec.) (ped/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
56		0.03 4	Crosswalk South Width, W <sub>s</sub> (ft.)	
§ <u>4</u>	7		Crosswalk East Length, Le (ft.)	68
56 94			Crosswalk West Length, L <sub>w</sub> (ft.)	
N Washington Street Se 94 Vs	200	0.06 8	Crosswalk North Length, L <sub>n</sub> (ft.)	
			Crosswalk South Length, L <sub>s</sub> (ft.)	06 (
Crosswalk Time-Space Analysis				
	Crosswalk East	Cross	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	10.5	10.5	29.5	29.5
Pedestrian Delay LOS	В	Δ	S	U
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.83222222	22 0.01555556	56 1.69722222	2.611111111
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	4.0	4.0
Total crossing time, t (s)	25.63725	5 22.9535	24.581875	26.2875
Total time-space, TS (ft²-s)	88510.5	79750.5	4	48330
Total crosswalk occupancy time, T (p-s)	114	2	133	219
Number of conflicting right-turning vehicles, N <sub>v</sub> (veh)	10	0	26	0
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)	4640	0	12340	0
Effective time-space, TS <sub>E</sub> (ff <sup>2</sup> -s)	83870.5			48330
Circulation area per pedestrian, M (ft²/p)	733.8	41693.2	251.8	220.6
Pedestrian Circulation Area LOS	∢	∢	∢	⋖

Concession   Con	Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee Please Note: Enter data in SHADED cells only	rsections V n SHADED	Vorksheet (HCN cells only	1 2000)	
party         Effective green         Red place         Condition         NO BUILD           fs         2005014         AM PEAK HOUR           length. C (sec.)         Effective green         Red phase         (Ve. 95 0.03 3 0.01 1 0.005 walk West Width, We, (ff. Crosswalk North Width, We, (ff. Crosswalk North Width, We, (ff. Sabington ashington and west width, Walk, (ff. Sabington ashington and west width, Walk, (ff. Sabington ashington and west width)         Crosswalk West Length, Le, (ff. Sawalk Time-Space Analysis         Crosswalk West Length, Le, (ff. Sawalk North Length, Le, (ff. Sawalk Time-Space Analysis         A A A A A A A A A A A A A A A A A A A	il Information MMLTK		Site Informa Intersection		ington Street/Thacher Str	<u>eet√a</u> lenti Way
Cecometric lipputs   Cecometric lipputs	pany		Condition Period	NO BUIL AM PEA	D K HOUR	
Effective green   Red phase   (ped/hour) (ped/sec.)   (ped/C)   Crosswalk Nest Width, We, (Crosswalk North Worth, We, (Crosswalk North Worth, We, (Crosswalk North Worth, We, (Crosswalk North Worth, Le, (Crosswalk North Length, Le, (Crosswalk North North Length, Le, (Crosswalk North Length, Le, (Crosswalk North						
Effective green   Red phase   (ped/hour) (ped/sec.)   (ped/c)   Crosswalk West Width, W <sub>i</sub> (freeding Don't Walf, N <sub>ped</sub> (p)   V <sub>s</sub>   S   0.03   3   Crosswalk South Width, W <sub>i</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   S   0.01   1   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Crosswalk East   Crosswalk South Length, L <sub>o</sub> (freeding Don't Walk, N <sub>ped</sub> (p)   V <sub>s</sub>   Inputs				Geometric Inputs		
Effective green   Red phase   (ped/hour) (ped/sec.)   (ped/C)   Crosswalk West Width, W., (ped/C)   Crosswalk North Width, W., (ped/C)   Crosswalk North Width, W., (ped/C)   Crosswalk North Width, W., (ped/C)   Crosswalk South Width, W., (ped/C)   Crosswalk North Length, L., (ped/C)   Crosswalk West Length, L., (ped/C)   Crosswalk West Length, L., (ped/C)   Crosswalk North	Cycle length, C (sec.)				Crosswalk East Width, W.	
Crosswalk North Width, We   Crosswalk North Health, We   Crosswalk North Health, We   Crosswalk North Health, We   Crosswalk North Length, Le   Crosswalk North Length, Leng					Crosswalk West Width, M	}
Crosswalk South Width, W, 21	Effective green Red phase	(ped/hour)	(bed/sec.)	(bed/C)	Crosswalk North Width, V	}
Crosswalk East Length, Le, fractional Crosswalk West Crosswalk West Length, Le, fractional Crosswalk West Crosswalk West Length, Le, fractional Crosswalk West Crosswalk West Length, Le, fractional Crosswalk West Crosswalk West Crosswalk West Crosswalk West Crosswalk West Length, Le, fractional Crosswalk West Crosswalk West Logs (#-s)	eet (1896) 0		0.03	ლ .	Crosswalk South Width, V	
Crosswark North Length, L.     Crosswark North Length, L.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.01	<del>-</del> «	Crosswalk East Length, L	1
Crosswark North Length, Leg			0.00	<b>.</b>	Closswalk West Length, 1	ŀ
Crosswalk East   Crosswalk West   Crosswalk North   Cosswalk Sec   Crosswalk North   Cosswalk North   Cos	001		0.00	<b>-</b>	Crosswalk North Length, Crosswalk South Length,	
Crosswalk East   Crosswalk North   Cosswalk North   Cos	Crosswalk Time Share Analysis					
OSS         O.0         26.6           A         A         C           ing during Don't Walk, N <sub>ped</sub> (p) valking speed, S <sub>p</sub> (ft/s)         0         0         2.24069444           valking speed, S <sub>p</sub> (ft/s)         0         0         2.24069444           valking speed, S <sub>p</sub> (ft/s)         4.0         4.0         4.0         4.0           (s)         9.45         16.2         21.20415625         21.20415625         21.20415625         220415625         22062.5         58344         15330         <		Crosswa	alk East	Crosswalk West	Crosswalk North	Crosswalk South
A         A         C           0         0         2.240694444           4.0         4.0         4.0           4.0         4.0         4.0           9.45         16.2         21.20415625           29062.5         58344         15330           0         0         0           0         0         0           29062.5         58344         15330           1165.4         3704.4         177.8           A         A         A	Average delay, d <sub>p</sub> (s)	0.0	0	0.0	26.6	20.0
0 0 2.24069444 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Pedestrian Delay LOS	Α		۷	၁	No Crosswalk
4.0 4.0 4.0 4.0 4.0 4.0 9.45 16.2 21.20415625 29062.5 58344 15330 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Number of peds arriving during Don't Walk, Named (p)	0		0	2.240694444	0.08333333
9.45 16.2 21.20415625 29062.5 58344 15330 25 16 130 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4	0	4.0	4.0	4.0
(p-s)     25     58344     15330       vehicles, N <sub>tv</sub> (veh)     25     16     130       s, TS <sub>tv</sub> (ff²-s)     0     0     0       s, TS <sub>tv</sub> (ff²-s)     29062.5     58344     15330       (ff²/p)     1165.4     3704.4     117.8       A     A	Total crossing time, t (s)	9.6	55	16.2	21.20415625	3.2225
(p-s)     25     16     130       vehicles, N <sub>tv</sub> (veh)     0     0     0       s, TS <sub>tv</sub> (ft²-s)     0     0     0       s, TS <sub>tv</sub> (ft²-s)     29062.5     58344     15330       (ft²/p)     1165.4     3704.4     117.8       A     A     A	Total time-space, TS (ft²-s)	2906	32.5	58344	15330	0
vehicles, N <sub>V</sub> (veh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total crosswalk occupancy time, T (p-s)	- 5	2	16	130	τ-
S, TS <sub>IV</sub> (ff'-s) 0 0 0 29062.5 58344 15330 (ff²/p) A A 117.8 A A A	Number of conflicting right-turning vehicles, $N_{v}$ (veh)	0	_	0	0	0
(ft²/p) 29062.5 58344 15330 1165.4 3704.4 117.8 A A A	Time-space of right-turning vehicles, TS <sub><math>v</math></sub> (ff <sup>2</sup> -s)			0	0	0
(ff²/p) 1165.4 3704.4 117.8 <b>A A A</b>	Effective time-space, TS <sub>E</sub> (ff²-s)	2906	32.5	58344	15330	0
A A	Circulation area per pedestrian, M (ft²/p)	116	5.4	3704.4	117.8	0.0
	Pedestrian Circulation Area LOS	∢		۷	∢	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Worksheel Please Note: Enter data in SHADED cells only	Worksheet (HCM ) cells only	2000)	
General Information           Analyst         TK           Company         Howard/Stein-Hudson           Date         6/18/2008           Project #         2005014	Site Information Intersection Condition Period		North Washington Street/Beverly Street NO BUILD AM PEAK HOUR	treet —
Cycle length, C (sec.)  Effective green Red phase  0 Beverly Street North Washington Street  North Washington Street	(ped/hour) (ped/sec.) 0 0.00 34.6833317 0.01 68.3156533 0.02 12 0.00	(ped/C) 0 1 2 0	Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk North Width, W <sub>n</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)  Crosswalk West Length, L <sub>w</sub> (ft.)  Crosswalk North Length, L <sub>w</sub> (ft.)  Crosswalk South Length, L <sub>n</sub> (ft.)	e, (ft.) 0 Nn, (ft.) 12 Nn, (ft.) 12 Ns, (ft.) 0 e, (ft.) 0 e, (ft.) 0 L, (ft.) 38 L, (ft.) 57 L, (ft.) 57
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 50.0 No Crosswalk	Crosswalk West 8.8 A	Crosswalk North 15.7 B	Crosswalk South 50.0 No Crosswalk
Number of peds arriving during Don't Walk, $N_{ped}$ (p) Average pedestrian walking speed, $S_p$ (ft/s) Total crossing time, t (s) Total time-space, TS (ft^2-s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, $N_{tv}$ (veh) Time-space of right-turning vehicles, $TS_{tv}$ (ft^2-s) Effective time-space, $TS_E$ (ft^2-s) Circulation area per pedestrian, $M$ (ft/p) Pedestrian Circulation Area LOS	0 4.0 3.2 0 0 0 0 0	0.202319435 4.0 12.74552187 24282 12 0 0 0 24282 1977.5 <b>A</b>	0.53134397 4.0 4.0 17.56955239 25222.5 33 0 0 25222.5 >60	0.16666667 4.0 3.245 0 0 0 0 0

Crosswalk Analysis Please General Information	s at Sign Note: E	sis at Signalized Intersections Worksheel se Note: Enter data in SHADED cells only Site Information	rsections Worln SHADED cell	sis at Signalized Intersections Worksheet (HCM 2000) se Note: Enter data in SHADED cells only Site Information	A 2000)	
Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/18/2008           Project #         2005014			Intersection Condition Period		North Washington Street/Cross Street/Cooper Street  NO BUILD  AM PEAK HOUR	treet/Cooper Street
<i>Inputs</i> . Cycle length, C (sec.) (1600)	-				Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	V <sub>e</sub> (ft.) 12 N., (ft.) 12
Effective green Red	> :	Ē.	(ped/sec.) 0.02	(ped/C) 2	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	_
Sumner Tunnel  N. Washington  Cross	> > >	109 0 8	0.03	m 0 r	Crosswalk East Length, Le (ft.) Crosswalk West Length, Lw (ft.)	
	vs •	3		<b>1</b>	Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis			Ily Floor			- T
Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS		Closswain Edst 1.0 A	III Edst	Crosswaik West 4.2 A	Crosswaik north 50.0 No Crosswaik	Crosswaik South 16.2 B
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0.165277778	87777	0.439027778	0 ;	0.680833333
reciage perestrial waiking speed, 5 <sub>0</sub> (10 <i>s)</i>  Total crossing time, t (s)	-	4.0 9.7371875	1875	4.0 9.79878125	3.2	4.0 9.383825
Total time-space, TS (ft²-s)		258	18	21138	0	0096
i lotal crosswalk occupancy time, il (p-s) Number of conflicting right-turning vehicles, N <sub>V</sub> (veh)		0 23	m	0 o	0 0	22 0
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)		0		0	0	0
Effective time-space, $TS_E$ (ff <sup>2</sup> -s) Circulation area per pedestrian M (ff <sup>2</sup> /n)	-	25818	18	21138	0 0	9600
Pedestrian Circulation Area LOS		í <b>V</b>	<u> </u>	<b>A</b>	No Crosswalk	<b>A</b>
					TOTAL CONTROL OF THE	

Crosswalk Analysis at Signalized Intersections Worksneet (HCM 2000)  Please Note: Enter data in SHADED cells only  General Information Site Information	gnalized Inte : Enter data i	ersections Worl n SHADED cell Site Information	Vorksheet (HCN cells only ffon	1 2000)	
Analyst MML/TK Company Howard/Stein-Hudson Date 6/18/2008 Project # 2005014		Intersection Condition Period		New Chardon Street/Surface Artery/Off-Ramps NO BUILD AM PEAK HOUR	
Inputs Cycle length, C (sec.)				Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	, (ft.) 0 , (ft.) 12
Off Ramps Effective green Red phase Ve	(ped/hour) 0	(ped/sec.) 0.00	(ped/C) 0	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	-
		0.03	1 M O	Crosswark East Length, Le (It.) Crosswark West Length, L <sub>w</sub> (ft.) Crosswark North Length, L <sub>n</sub> (ft.) Crosswark South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crossw 8 No Cro	Crosswalk East 8.8 No Crosswalk	Crosswalk West 8.8 A	Crosswalk North 7.2 A	Crosswalk South 7.2 No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ft <sup>2</sup> -s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)	4 w 0 0 0	0 4.0 3.2 0 0	0.79333333 4.0 33.1285 61582.5 125 0	0.480277778 4.0 15.3080625 32256 39 0	0 4.0 3.2 0 0
Time-space of right-turning vehicles, $TS_{tv}$ (ft <sup>2</sup> -s) Effective time-space, $TS_E$ (ft <sup>2</sup> -s) Circulation area per pedestrian, $M$ (ft <sup>2</sup> /p) <b>Pedestrian Circulation Area LOS</b>	No Cro	0 0 - No Crosswalk	0 61582.5 492.1 <b>A</b>	0 32256 833.6 <b>A</b>	0 0 - No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	gnalized Inte Enter data i	rsections V n SHADED	Vorksheet (HCN cells only	1 2000)	
I Info		Site Information			
Analyst MML/TK Company Howard/Stein-Hudson		Intersection Condition	Causeway NO BUILD	Causeway Street/Haverhill Street/Legends Way NO BUILD	Legends Way
Date 6/18/2008		Period	AM PEA	AM PEAK HOUR	
Inputs				Geometric Inputs	
Cycle length, C (sec.)				Crosswalk East Width, W <sub>e</sub> (ft.)	l
	(1) (1) (1)		(C) P ( 2 )	Crosswalk West Wildth, Ww (T.)	ν <sub>w</sub> (π.) 10
Cancamay Street ATT ATT AT A	(ped/libdi)	(ped/sec.)	(hear)	Crosswalk South Width W. (#.)	  -
45		0.26	23	Crosswalk East Length, Le (ft.)	1
Legends Way 25 V <sub>n</sub>		0.07	9	Crosswalk West Length, L <sub>w</sub> (ft.)	
Haverhill Street Vs		0.16	15	Crosswalk North Length, L <sub>n</sub> (ft.)	L, (ft.) 35
				Crosswalk South Length, L <sub>s</sub> (ft.)	-
Crosswalk Time-Space Analysis					
	Crossw	Crosswalk East	Crosswalk West	Crossv	Crosswalk South
Average delay, d <sub>p</sub> (s)		10.3	10.3	3.5	3.5
Pedestrian Delay LOS		В	ω	4	4
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.8540	0.854027778	5.601944444	0.871527778	2.013888889
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4	4.0	4.0	4.0	4.0
Total crossing time, t (s)	21.43	21.4305875	24.712525	12.1853125	9.99375
Total time-space, TS (ft²-s)	273	360	29600	21218.75	15468.75
Total crosswalk occupancy time, T (p-s)	_		280	92	145
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)		0	0	0	-
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)		30	0	80	270
Effective time-space, TS <sub>E</sub> (ft²-s)	27.2	27230	29600	21138.75	15198.75
Circulation area per pedestrian, M $(\mathrm{ft}^2/\mathrm{p})$	35	355.4	51.1	276.5	104.9
Pedestrian Circulation Area LOS		4	മ	∢	∢

Analysta         MMILTIK         Condition         Eleventy Street/Valenti Way         MMILTIK         Project # Period         Condition         Beventy Street/Valenti Way         MMILTIK         Project # Period         Condition         Condition         MO BUILD         Project # Period         AM PEAK HOUR         17           Project # # 2005014         2005014         Am PEAK HOUR         Crosswalk East Width, W <sub>a</sub> (ft.)         17           Cycle length, C (sec.)         Effective green         Red phase         V <sub>a</sub> 50         0.02         2         Crosswalk West Width, W <sub>a</sub> (ft.)         17           Valent Way         Effective green         84         V <sub>a</sub> 50         0.01         1         Crosswalk West Length, L <sub>a</sub> (ft.)         36           Beventy Street         Effective green         84         V <sub>a</sub> 50         0.01         1         Crosswalk West Length, L <sub>a</sub> (ft.)         17           Beventy Street         Effective green         84         V <sub>a</sub> 100         0.03         3         Crosswalk West Length, L <sub>a</sub> (ft.)         36           Beventy Street         Effective firethe green         84         V <sub>a</sub> 100         0.03         3         Crosswalk West Length, L <sub>a</sub> (ft.)         40           Average pedestrian walking speed S <sub>a</sub> (fts.)         14         0         0	MMLTIK   House   Hou	Please Note	Please Note: Enter data in SHADED cells only Site Information	n SHADED cell Site Information	ilis only n		
Red phase	Red phase	rst oany ct#		Intersection Condition Period		street/Valenti Way D < HOUR	
Red phase	Red phase	Inputs Cycle length, C (sec.)				Geometric Inputs Crosswalk East Width, W <sub>e</sub>	
S2    V <sub>e</sub>   60    0.02	See See See See See See See See See Se	Effective green Red phase	(bed/hour)		(2/pə	Crosswalk West Width, W Crosswalk North Width, V	_
32    V <sub>n</sub>   200   0.06   6    Crosswalk West Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Arg)   Arg (Drosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Arg)   Arg (Drosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Arg)   Arg (Drosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Arg)   Arg (Drosswalk North Length, L <sub>n</sub> (Crosswalk North Length, L <sub>n</sub> (Arg)   Arg (Drosswalk North Length, L <sub>n</sub> (Arg (Drosswalk North Length)   Arg (Drosswalk North Length, L <sub>n</sub> (Arg (Drosswalk North Length)   Arg (Drosswalk North Length)   Ar	3	48 52 48 52		0.02 0.01	2 -	Crosswalk South Width, V Crosswalk East Length, L	
Crosswalk South Length, Let	Crosswalk South Length, Late   Crosswalk West   Crosswalk North   Late	32 76 84		0.06	ဖက	Crosswalk West Length, I Crosswalk North Length, I	
Crosswalk East 13.5         Crosswalk West 13.5         Crosswalk North 13.5         Crosswalk North 13.5         Crosswalk North 13.5         A.           alk, Nped (p)         0.433333333         0.361111111         0.88888889         A.           **L\$         4.0         4.0         4.0         4.0           **L\$         12.80636364         10.78125         12.15         68           **L*         18078.5         15930         26722.5         68           **L*         0         0         1240         1240           **V* (rt²-s)         18078.5         15930         25482.5           **A         *A         *A         *A	Crosswalk East   Crosswalk West   Crosswalk North   13.5   B   B   A					Crosswalk South Length,	
alk, N <sub>ped</sub> (p) 0.43333333 0.36111111 0.88888889 4.0 4.0 4.0 4.0 4.0 12.15 12.80636364 10.78125 12.15 68 68 0 0 1240 1240 1260 0 0 1240 1260 1260 1260 1260 1260 1260 1260 126	13.5   13.5   5.1     B	Crosswalk Time-Space Analysis	Crossw		Crosswalk West	Crosswalk North	Crosswalk South
B     B     A       alk, N <sub>ped</sub> (p)     0.433333333     0.36111111     0.88888889       4.0     4.0     4.0       4.0     4.0     4.0       12.80636364     10.78125     12.15       18078.5     15930     26722.5       18078.5     15930     25482.5       18078.5     16930     25482.5       847.0     A     A	B B A A	Average delay, d <sub>p</sub> (s)	13		13.5	5.1	35.3
alk, N <sub>ped</sub> (p) 0.433333333 0.361111111 0.88888889 4.0 4.0 4.0 4.0 4.0 12.80636364 10.78125 12.15 12.15 18078.5 15930 26722.5 68 3 0 0 1240 1240 18078.5 15930 25482.5 847.0 1063.8 377.5 A	alk, N <sub>ped</sub> (p) 0.43333333 0.361111111 0.88888889 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Pedestrian Delay LOS		_	۵	4	٥
les, N <sub>V</sub> (veh) 0 18078.5 15080 0 0 1240 0 0 1240 0 0 1240 0 0 1240 0 12	Hes, N <sub>V</sub> (veh)  (12.80636364 10.78125 12.15 12.15 18078.5 15930 25722.5 2722.5 21 15930 25722.5 21 18078.5 15930 25482.5 847.0 1063.8 377.5 A	Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.4333	3333	0.361111111	0.88888889	1.166666667
les, N <sub>v</sub> (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup> -s) (rt <sup>2</sup>	les, N <sub>v</sub> (veh) 0 0 1240 12.15	Average pedestrian walking speed, $S_p$ ( $\pi / S$ )	4. 000	0	4.0	0.4	40.4001
les, N <sub>V</sub> (veh)  (refs)	les, N <sub>v</sub> (veh) 0 0 3 3 3 4 47.0 18078.5 1663.8 377.5 <b>A</b> A A	l otal crossing time, t (s) Total time-space. TS (ff <sup>2</sup> s)	12.806	36364	10.78125 15930	12.15	13.4625 5280
0 0 3 0 0 1240 18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A</b> A	0 0 3 0 0 1240 18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A</b> A A	Total crosswalk occupancy time, T (p-s)	2	-	15	89	37
ν (ff'-s) 0 0 1240 18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A</b> A	ν (ff'-s) 0 0 1240 18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A A A</b>	Number of conflicting right-turning vehicles, $N_{\rm tv}$ (veh)			0	m	0
18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A</b> A A	18078.5 15930 25482.5 847.0 1063.8 377.5 <b>A A A</b>	Time-space of right-turning vehicles, $TS_{tv}$ (ft <sup>2</sup> -s)			0	1240	0
847.0 1063.8 377.5 <b>A A A</b>	A A A A A A A A A A A A A A A A A A A	Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)	180	78.5	15930	25482.5	5280
		Pedestrian Circulation Area LOS	4	2	0.5001 <b>A</b>	S.7.5 <b>A</b>	4. 4.

Crosswalk A
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					Site Information	tion		
Analyst MML/TK	Y				Intersection	North W	North Washington Street/Endicott Street	dicott Street
Company   Howard/Si   Date   6/18/2008	Howard/Stein-Hudson 6/18/2008	on			Condition Period	NO BUILD AM PEAK	NO BUILD AM PEAK HOUR	
Project # 2005014	4							
<u>  Inputs</u>			- N			Geome	Geometric Inputs	
	Ped Volum	olumes	Traffic Volumes	olumes		Crosswal	Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswal	Crosswalk West Width, Ww (ft.)	0
Endicott Street	1	0.00	46	0.01		Crosswal	Crosswalk North Width, Wn (ft.)	0
0	0	0.00	0	0.00		Crosswal	Crosswalk South Width, Ws (ft.)	0
North Washington Stre	0	0.00	0	0.00		Crosswal	Crosswalk East Length, Le (ft.)	29
North Washington Stre	0	0.00	0	0.00		Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.)	0
						Crosswal	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>n</sub> (ft.)	06
Grosswall Time-Share Analysis	- Analysis							
			Crosswalk East	alk East	Crosswalk West	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	g speed, S <sub>p</sub> (f	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	(s)		ю́ ю	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			56	0	0		06	06
Single pedestrian critical gap, t <sub>c</sub> (s)	ap, $t_c$ (s)		10.25	25	3.00		25.50	25.50
Typical pedestrian number in crossing platoon, N <sub>c</sub>	in crossing p	latoon, N <sub>c</sub>	1.0	8	0.00		0.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ion, N <sub>p</sub>				1	•	ı	
Group critial gap,			11.	65	•		•	•
Vehicular flow rate, V			0.01	=	00.00		0.00	0.00
Average pedestrian delay, D	۵		0.91	71	ı		•	•
Pedestrain Delay LOS			∢		No Crosswalk	walk	No Crosswalk	No Crosswalk

General Information	uo				Site Information	tion		
Analyst	MML/TK			=	ntersection	North W	ashington Street/Med	dford Street
ک	Howard/Stein-Hudson	on		_	Condition	NO BUIL	NO BUILD	
•	6/18/2008			ŭ.	Period	AM PEA	K HOUR	
Project # 20	05014							
Inputs						Geomet	Geometric Inputs	9
	Ped Volum	olumes	Traffic Volumes	olumes		Crosswal	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswal	Crosswalk West Width, Ww (ft.)	12
0	0	00.00	0	0.00		Crosswal	Crosswalk North Width, Wn (ft.)	0
Medford Street	27	0.01	31	0.01		Crosswal	Crosswalk South Width, W <sub>s</sub> (ft.)	0
N Washington Street	et 4	0.00	1694	0.47		Crosswal	Crosswalk East Length, Le (ft.)	0
N Washington Street	et 0	0.00	1687	0.47		Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.)	46
						Crosswal	Crosswalk North Length, L <sub>n</sub> (ft.)	80
-						Crosswal	Crosswalk South Length, L <sub>s</sub> (ft.)	80
Grosswalk Time-Space Analysis	Space Analysis							
			Crosswalk East	alk East	<b>Crosswalk West</b>	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	valking speed, S <sub>p</sub> (f	(s/t	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	me, t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L. (ft)	L (ft)		0	_	46		80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	ical gap, $ m t_c$ (s)		3.00	0	14.50		23.00	23.00
Typical pedestrian number in crossing platoon, No	imber in crossing p	latoon, N <sub>c</sub>	0.0	0	1.01		119.11	1.00
Spatial pedestrian distribution, N <sub>p</sub>	stribution, $N_p$		1		7		ı	•
Group critial gap,			' 		15.67		1	•
Vehicular flow rate, V			00.00	8	0.01		0.47	0.47
Average pedestrian delay, D	ielay, D				1.11			•
Pedestrain Delay LOS	SC		No Crosswalk	sswalk	∢		No Crosswalk	No Crosswalk

	Crosswalk		t Unsignaliz Note: Enter	zed Interse data in SH	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	rksheet s only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst MML Company Howe Date 6/18/2	ation MML/TK Howard/Stein-Hudson 6/18/2008 2005014	u			Site Information Intersection Ca Condition NC	Causewa NO BUIL AM PEA	ion Causeway Street/Canal Street NO BUILD AM PEAK HOUR	set .
sjnduj						Geomet	Geometric Inputs	
	Ped Volumes	umes (ned/sec.)	Traffic Volumes	olumes (yeh/sec.)		Crosswall	Crosswalk East Width, W <sub>e</sub> (ft.)	12
Causeway Street	121	0.03	1452	0.40		Crosswall	Crosswalk North Width, W <sub>n</sub> (ft.)	0
Causeway Street	131	0.04	1426	0.40		Crosswall	Crosswalk South Width, W <sub>s</sub> (ft.)	l _
0	0	0.00	0	0.00		Crosswall	Crosswalk East Length, Le (ft.)	
Canal Street	1044	0.29	124	0.03		Crosswall	Crosswalk West Length, Lw (ft.)	_
						Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	22
Grosswalk Time-Space Analysis	ace Analysis							
			Crosswalk East	ik East	Crosswalk West	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ılking speed, S <sub>p</sub> (ft/₃	(s	4.0		4.0		4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0	_	3.0		3.0	3.0
Length of crosswalk, L (ft)	(ft)		84		77		0	22
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, t <sub>c</sub> (s)		24.00	00	22.25		3.00	8.50
Typical pedestrian number in crossing platoo	ber in crossing pla	toon, N <sub>c</sub>	1230	.76	566.16	··	0.00	1.21
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		821	_	378		•	2
Group critial gap,			1664.83	.83	776.92	•	1	10.10
Vehicular flow rate, V			0.40	0	0.40	•	0.00	0.03
Average pedestrian delay, D	lay, D		>45		>45		t	1.98
Pedestrain Delay LOS	<b>.</b>		ц,		Ľ.		No Crosswalk	∢

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only
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General Information Analyst MML/⊤K	л /ТК				Site Information Intersection Ca	tion Causewa	on Causeway Street/Medford Street	treet
Company   How:	Howard/Stein-Hudson 6/18/2008	on			Condition Period	NO BUILD AM PEAK	NO BUILD AM PEAK HOUR	
Project # 2005014	5014							
Inputs						Geomet	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswal	Crosswalk East Width, We (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswall	Crosswalk West Width, Ww (ft.)	0
Causeway Street	27	0.01	1235	0.34		Crosswal	Crosswalk North Width, Wn (ft.)	0
Causeway Street	36	0.01	1231	0.34		Crosswall	Crosswalk South Width, Ws (ft.)	10
0	0	00.00	0	0.00		Crosswall	Crosswalk East Length, Le (ft.)	58
Medford Street	324	0.09	28	0.01		Crosswall	Crosswalk West Length, L <sub>w</sub> (ft.)	l _
						Crosswal Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	0 0
Crosswalk Time-Space Analysis	ace Analysis							
			Crosswalk East	alk East	Crosswalk West	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	king speed, S <sub>p</sub> (fi	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	( <del>f</del> )		28	80	58		0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	ષ gap, t <sub>c</sub> (s)		17.50	20	17.50	_	3.00	9.25
$\ Typical$ pedestrian number in crossing platoon, $N_c$	ber in crossing pl	atoon, N <sub>c</sub>	9.52	25	12.10	_	0.00	1.02
Spatial pedestrian distribution, N <sub>p</sub>	bution, $N_p$		1		1		ı	7
Group critial gap,					•		•	10.65
Vehicular flow rate, V			0.34	*	0.34		0.00	0.01
Average pedestrian delay, D	ау, D		ı		,		1	0.45
Pedestrain Delay LOS			No Crosswalk	sswalk	No Crosswalk	walk	No Crosswalk	4

	Crosswalk		ıt Unsignaliz Note: Enter	zed Interse data in SH	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information	ation			S	Site Information		
Analyst	MML/TK	e distributemente sierre sais en Josephille kansaltskyweren en 'n Arbite's iske in de	the fifth over containing in the containing and the fifth over the		Intersection Ca	Canal Street/Valenti Way	
Company	Howard/Stein-Hudson	on		O		) BUILD	
Date	6/18/2008			₾.		A PEAK HOUR	
Project #	2005014						
Sindhi	TITON PAG	semile	Traffic Volumes	Jumes	<b>5</b>  2	Geometric/Inputs Crosswalk East Width W (# )	10
	(ned/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk West Width W (#)	ı
Valenti Wav	131	0.04		0.02		Crosswalk North Width W- (ff.)	1
Valenti Wav	168	0.05	149	0.04		Crosswalk South Width, W. (ft.)	I _
Canal Street	551	0.15	113	0.03	¯ δ	Crosswalk East Length, Le (ft.)	32
Canal Street	96	0.03	25	0.01	ັ້ວ	Crosswalk West Length, L <sub>w</sub> (ft.)	İ
					້ ວັ	Crosswalk North Length, L <sub>n</sub> (ft.)	i _
					້	Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Tim	Crosswalk Time-Space Analysis				-		
			Crosswalk East	lk East	<b>Crosswalk West</b>	st Crosswalk North	Crosswalk South
Average pedestria	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	Vs)	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	p time, t (s)		3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)	ılk, L (ft)		32		26	28	23
Single pedestrian critical gap, t <sub>c</sub> (s)	critical gap, $t_{c}$ (s)		11.00	00	9.50	10.00	8.75
Typical pedestrian	Typical pedestrian number in crossing plato	atoon, N <sub>c</sub>	1.0	က	1.09	1.17	1.01
Spatial pedestrian distribution, N <sub>p</sub>	distribution, N <sub>p</sub>		2		7	2	2
Group critial gap,			12.4	0	10.90	11.60	10.15
Vehicular flow rate, V	> 6		0.0	7	0.04	0.03	0.01
Average pedestrian delay, D	ın delay, D		1.40		2.87	2.39	0.37
Pedestrain Delay LOS	.TOS		⋖		∢	<b>d</b>	∢

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only
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Company Howard/Stein-Hudson Date 6/18/2008 Project # 2005014  Imputs Ped Volumes (ped/hour) (ped/sec.) Causeway Street 32 0.01 Causeway Street 16 0.00 Beverly Street 330 0.09 Reverly Street 330 0.09 Reverly Street 330 0.09 Reverly Street 16 0.00 Beverly Street 16 0.00 Longth of crosswalk Time-Space Analysis Length of crosswalk, L (ft)	Traffic Vo (veh/hour) 1236 1435 0 0 233	Condition Period Pulmes (veh/sec.) 0.34 0.40 0.00 0.00	uo	NO BUILD  AM PEAK HOUR  Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk South Width, W <sub>n</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)  Crosswalk West Length, L <sub>w</sub> (ft.)  Crosswalk South Length, L <sub>w</sub> (ft.)  Crosswalk South Length, L <sub>n</sub> (ft.)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ed Volun (I) (Sis	Traffic Vo (veh/hour) 1236 1435 0 233	lumes (veh/sec.) 0.34 0.40 0.00 0.00	Geome Crosswa Crosswa Crosswa Crosswa Crosswa Crosswa Crosswa Crosswa Crosswa	ik East Width, W <sub>e</sub> (ft.) Ik West Width, W <sub>w</sub> (ft.) Ik North Width, W <sub>w</sub> (ft.) Ik South Width, W <sub>s</sub> (ft.) Ik East Length, L <sub>e</sub> (ft.) Ik West Length, L <sub>w</sub> (ft.) Ik North Length, L <sub>w</sub> (ft.)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ur) (l S <sub>p</sub> (ft/s)	Traffic Vo (veh/hour) 1236 1435 0 233	lumes (veh/sec.) 0.34 0.40 0.00 0.06	Crosswa Crosswa Crosswa Crosswa Crosswa Crosswa	Ik East Width, W <sub>e</sub> (ft.) Ik West Width, W <sub>w</sub> (ft.) Ik North Width, W <sub>n</sub> (ft.) Ik South Width, W <sub>s</sub> (ft.) Ik East Length, L <sub>e</sub> (ft.) Ik West Length, L <sub>w</sub> (ft.) Ik North Length, L <sub>n</sub> (ft.) Ik South Length, L <sub>n</sub> (ft.)	0 0 0 0 0 0 0 30
ur) (() <b>Sis</b> S <sub>p</sub> (ft/s)	(veh/hour) 1236 1435 0 233	(veh/sec.) 0.34 0.40 0.00 0.06	Crosswe Crosswe Crosswe Crosswe Crosswe Crosswe	Ik West Width, W <sub>w</sub> (ft.) Ik North Width, W <sub>n</sub> (ft.) Ik South Width, W <sub>s</sub> (ft.) Ik East Length, L <sub>e</sub> (ft.) Ik West Length, L <sub>w</sub> (ft.) Ik North Length, L <sub>n</sub> (ft.) Ik South Length, L <sub>s</sub> (ft.)	30 68 88 0 0
<b>Sis</b> S <sub>p</sub> (ft/s)		0.34 0.40 0.00 0.06	Crosswa Crosswa Crosswa Crosswa Crosswa	Ik North Width, W <sub>n</sub> (ft.) Ik South Width, W <sub>s</sub> (ft.) Ik East Length, L <sub>e</sub> (ft.) Ik West Length, L <sub>w</sub> (ft.) Ik North Length, L <sub>n</sub> (ft.) Ik South Length, L <sub>s</sub> (ft.)	30 0 88 89 0
<b>sis</b> S <sub>p</sub> (ft/s)	1435 0 233	0.40 0.00 0.06	Crosswe Crosswe Crosswe Crosswe	lk South Width, W <sub>s</sub> (ft.) lk East Length, L <sub>e</sub> (ft.) lk West Length, L <sub>w</sub> (ft.) lk North Length, L <sub>n</sub> (ft.) lk South Length, L <sub>s</sub> (ft.)	30 0 88 30
<b>SiS</b> S <sub>p</sub> (ft/s)	233	0.00	Crosswa Crosswa Crosswa Crosswa	ik East Length, L <sub>e</sub> (ft.) ik West Length, L <sub>w</sub> (ft.) ik North Length, L <sub>n</sub> (ft.) ik South Length, L <sub>s</sub> (ft.)	30 0 88
Sis S <sub>p</sub> (ft/s)	233	0.06	Crosswa Crosswa Crosswa	Ik West Length, L <sub>w</sub> (ft.) Ik North Length, L <sub>n</sub> (ft.) Ik South Length, L <sub>s</sub> (ft.)	68 0 30
Crosswalk Time-Space Analysis  Average pedestrian walking speed, S <sub>p</sub> (ft/s)  Pedestrian start-up time, t (s)  Length of crosswalk, L (ft)			Crosswa	Ik North Length, L <sub>n</sub> (ft.) Ik South Length, L <sub>s</sub> (ft.)	30
<b>Crosswalk Time-Space Analysis</b> Average pedestrian walking speed, S <sub>p</sub> (ft/s) Pedestrian start-up time, t (s) Length of crosswalk, L (ft)					
Average pedestrian walking speed, S <sub>p</sub> (ft/s) Pedestrian start-up time, t (s) Length of crosswalk, L (ft)					
Average pedestrian walking speed, S <sub>p</sub> (ft/s) Pedestrian start-up time, t (s) Length of crosswalk, L (ft)	Crosswalk East		Crosswalk West	Crosswalk North	Crosswalk South
Pedestrian start-up time, t (s) Length of crosswalk, L (ft)	4.0		4.0	4.0	4.0
Length of crosswalk, L (ft)	3.0		3.0	3.0	3.0
Home to appoint orition to (a)	89		89	0	30
onigle pedestrian critical gap, t <sub>c</sub> (s)	20.00		20.00	3.00	10.50
Typical pedestrian number in crossing platoon, N <sub>c</sub>	25.04	<u></u>	32.88	0.00	1.31
Spatial pedestrian distribution, N <sub>p</sub>	-		t	ı	2
Group critial gap,	1		1		12.30
Vehicular flow rate, V	0.34		0.40	0.00	90.0
Average pedestrian delay, D			ı	•	6.50
Pedestrain Delay LOS	No Crosswalk		No Crosswalk	No Crosswalk	8

Crosswalk Analysis at Unsignalized Intersections Work Please Note: Enter data in SHADED cells o	nalysis at Unsig	Please Note: Enter data in SHADED cells only
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pany					Intersection	Valenti V	Vay/Haverhill Street	
•	Howard/Stein-Hudson 6/18/2008	     			Condition Period	NO BUIL AM PEA	NO BUILD AM PEAK HOUR	
Project # 2005014	-							
Inputs						Geometi	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, We (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswall	Crosswalk West Width, Ww (ft.)	0
Valenti Way	0	0.00	281	0.08		Crosswall	Crosswalk North Width, Wn (ft.)	10
Valenti Way	0	0.00	189	0.05		Crosswall	Crosswalk South Width, Ws (ft.)	0
Haverhill Street	310	60.0	92	0.03		Crosswalk	Crosswalk East Length, Le (ft.)	0
0	0	0.00	0	0.00		Crosswall	Crosswalk West Length, L <sub>w</sub> (ft.)	0
					<u> </u>	Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.)	58
Crosswalk Time-Space Analysis	Analysis							
			Crosswalk East	ılk East	Crosswalk West	West	<b>Crosswalk North</b>	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	speed, S <sub>p</sub> (ft	(s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	s)		3.(	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			0		0		28	0
Single pedestrian critical gap, t <sub>c</sub> (s)	p, t <sub>c</sub> (s)		3.00	9	3.00		10.00	3.00
Typical pedestrian number in crossing platoon, N <sub>c</sub>	in crossing pla	atoon, N <sub>c</sub>	1.0	9	1.00		1.09	0.00
Spatial pedestrian distribution, N <sub>p</sub>	on, N <sub>p</sub>				t		2	•
Group critial gap,			ı				11.40	•
Vehicular flow rate, V			0.08	80	0.05		0.03	0.00
Average pedestrian delay, D	0		1		ı		1.83	•
Pedestrain Delay LOS			No Crosswalk	sswalk	No Crosswalk	walk	∢	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only General Information	nalized Interson Enter data in S	sis at Signalized Intersections Workshee se Note: Enter data in SHADED cells only Site Information	et (HCM 20 ly	(000	
Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/20/2008           Project #         2005014	Inte		North Washington NO BUILD PM PEAK HOUR	North Washington Street/Causeway NO BUILD PM PEAK HOUR	<u>v Str</u> eet 
Cycle length, C (sec.)  Effective green Red phase  Commercial Street  Causeway Street  N Washington Street  Cycle length, C (sec.)  Effective green  Effective green  Effective green  Effective green  Effective green  Effective green  Causeway Street  Effective green  Effective green  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway Street  Causeway S	(ped/hour) (pe 33 14 7	(ped/sec.) (ped/C) 0.01 1 0.00 1 0.00 0		Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk North Width, W <sub>n</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)	(ft.) 12 "(ft.) 12 "(ft.) 12 's, (ft.) 12 's, (ft.) 89 (ft.) 89
pace Analysis	Crosswalk East 13.2 B		Crosswalk West 13.2	Crosswalk South Length, L <sub>s</sub> (ft.)  Crosswalk North  Cro	
Number of peds arriving during Don't Walk, $N_{ped}$ (p) Average pedestrian walking speed, $S_p$ (ft/s) Total crossing time, $t$ (s) Total time-space, TS (ft <sup>2</sup> -s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, $N_v$ (veh) Time-space of right-turning vehicles, $TS_v$ (ft <sup>2</sup> -s) Effective time-space, $TS_E$ (ft <sup>2</sup> -s) Circulation area per pedestrian, $M$ (ft²/p) <b>Pedestrian Circulation Area LOS</b>	0.28875 4.0 25.51496875 81034.5 35 35 26 12500 68534.5 1953.5		0.1225 4.0 4.0 22.9775625 73114.5 13 0 120 72994.5 5445.9	0.084583333 4.0 24.21903125 52920 7 14 6640 46280 6551.6	1.063333333 4.0 25.93925 55890 95 0 0 55890 587.6

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee Please Note: Enter data in SHADED cells only	rsections W n SHADED c	orksheet (HCN ells only	1 2000)	
General Information		Site Information	uo		
•	V DE LE LES LES LES LES LES LES LES LES LES	Intersection	-	North Washington Street/Thacher Street/Valenti Way	Street/Valenti Way
pany		Condition	NO BUIL	ر. ا	
Date 6/20/2008		Period	PM PEA	PM PEAK HOUR	
Inputs				Geometric Inputs	
Cycle length, C (sec.)				Crosswalk East Width, We (ft.)	
				Crosswalk West Width, W <sub>w</sub> (ft.)	'w (ft.) 12
Effective green Red phase	(bed/hour)	(bed/sec.)	(bed/C)	Crosswalk North Width, Wn (ft.)	
0		0.04	4	Crosswalk South Width, W <sub>s</sub> (ft.)	
Valenti Way 0 V <sub>w</sub>		0.02	2	Crosswalk East Length, Le (ft.)	e (ft.) 25
2元 73	264	0.07	7	Crosswalk West Length, L <sub>w</sub> (ft.)	
N. Washington V <sub>s</sub>		0.00	0	Crosswalk North Length, L <sub>n</sub> (ft.)	
				Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>s</sub> (ff.) 0
Crosswalk Time-Space Analysis					
	Crossw	Crosswalk East	<b>Crosswalk West</b>	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	<u> </u>	0.0	0.0	26.6	20.0
Pedestrian Delay LOS		A	<b>A</b>	O	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0	0	2.67666667	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4	4.0	4.0	4.0	4.0
Total crossing time, t (s)	တ်	9.45	16.2	21.30225	3.2
Total time-space, TS (ft²-s)	290	29062.5	58344	15330	0
Total crosswalk occupancy time, T (p-s)	<u>ო</u>	œ	29	156	0
Number of conflicting right-turning vehicles, $N_{N}$ (veh)		0	0	0	0
Time-space of right-turning vehicles, ${\sf TS}_{\scriptscriptstyle  m tv}$ (ft <sup>2</sup> -s)		0	0	0	0
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)	290	29062.5	58344	15330	0
Circulation area per pedestrian, M (ft²/p)	75	8.3	2025.8	98.1	ı
Pedestrian Circulation Area LOS		-	∢	∢	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee Please Note: Enter data in SHADED cells only	Worksheet (HCM) cells only	2000)	
General Information	Site Information			
Analyst TK Company Howard/Stein-Hudson	Intersection Condition	North Was	North Washington Street/Beverly Street	<u>street</u>
1-1-	Period	PM PEAK HOUR	( HOUR	
Project # ZUUSU 14				
Synduj.			Geometric Inputs	
Cycle length, C (sec.)			Crosswalk East Width, W <sub>e</sub> (ft.)	_
			Crosswalk West Width, W <sub>w</sub> (ft.)	", (ft.) 12
Effective green Red phase	(bed/hour) (bed/sec.)	(bed/C)	Crosswalk North Width, Wn (ft.)	
0 100 V <sub>e</sub>		0	Crosswalk South Width, W <sub>s</sub> (ft.)	
Beverly Street 48 V <sub>w</sub>		2	Crosswalk East Length, Le (ft.)	
North Washington Street Section 47	104.049995 0.03	က	Crosswalk West Length, L <sub>w</sub> (ft.)	-w (ft.) 38
North Washington Street 6 Vs	00.00	0	Crosswalk North Length, L <sub>n</sub> (ft.)	
			Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>s</sub> (ft.) 0
Crosswalk Time-Space Analysis		_		
	Crosswalk East	<b>Crosswalk West</b>	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	20.0	13.0	11.0	20.0
Pedestrian Delay LOS	No Crosswalk	В	В	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0	0.513681162	0.679215245	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	4.0	4.0
Total crossing time, t (s)	3.2	12.81557826	17.60282343	3.2
Total time-space, TS (ft²-s)	0	20178	31378.5	0
Total crosswalk occupancy time, T (p-s)	0	56	51	0
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)	0	0	0	0
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)	0	0	0	0
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)	0	20178	31378.5	0
Circulation area per pedestrian, M (ft²/p)	ı	781.6	09<	,
Pedestrian Circulation Area LOS	No Crosswalk	∢	4	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalysis at Signalized Intersections Workshee	rsections V n SHADED	Vorksheet (HCN cells only	1 2000)	
General Information           Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/20/2008           Project #         2005014		Site Information Intersection Condition Period		N. Washington & Cooper & Cross NO BUILD PM PEAK HOUR	
Cycle length, C (sec.) Effective green Red phase Cooper Sumner Tunnel Si 33 Vw N. Washington Cross 53 Vs	(ped/hour) 127 127 0 0	(ped/sec.) 0.04 0.05 0.00 0.00	(ped/C) 4 5 0 3	Geometric Inputs  Crosswalk East Width, W <sub>e</sub> (ft.)  Crosswalk West Width, W <sub>w</sub> (ft.)  Crosswalk North Width, W <sub>s</sub> (ft.)  Crosswalk South Width, W <sub>s</sub> (ft.)  Crosswalk East Length, L <sub>e</sub> (ft.)  Crosswalk West Length, L <sub>w</sub> (ft.)  Crosswalk North Length, L <sub>r</sub> (ft.)  Crosswalk South Length, L <sub>r</sub> (ft.)	(ft.) 12 ""(ft.) 12 ""(ft.) 0 ", (ft.) 0 's, (ft.) 26 ", (ft.) 26
<i>Crosswalk Time-Space Analysis</i> Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 1.0 A	valk East 1.0 <b>A</b>	Crosswalk West 5.4 A	Crosswalk North 50.0 No Crosswalk	Crosswalk South 14.0 B
Number of peds arriving during Don't Walk, $N_{ped}$ (p) Average pedestrian walking speed, $S_p$ (ft/s) Total crossing time, t (s) Total time-space, TS (ft <sup>2</sup> -s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, $N_v$ (veh) Time-space of right-turning vehicles, $TS_v$ (ft <sup>2</sup> -s) Effective time-space, $TS_E$ (ft <sup>2</sup> -s) Circulation area per pedestrian, $M$ (ft²/p) Pedestrian Circulation Area LOS	0.246944444 4.0 9.7555625 25818 34 0 0 25818 750.2	5944444 4.0 555625 5818 34 0 0 0 5818 50.2	0.843333333 4.0 9.88975 19890 51 0 0 19890 393.5	0 4.0 3.2 0 0 0 #DIV/0! No Crosswalk	0.80972222 4.0 4.0 9.418625 10560 29 0 0 10560 366.9

and Scholers and the state of the Scholers and Scholers and Scholers and the Scholers and Add Scholers and A	Piease Note: Enter data in SHADED cells only	e al de lege a consequence de la consequence del la consequence del la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence de la consequence d	en Ordenstellendere de entreplacere en propos (dell'acció) en Chappini Departe o Se	Scopes wedgestyd it stilly ynn ei Berlinssskeiten it Britisheit Di somet Andri od perfloatfis blyn stoadfille fan mys y	y po de dispresse plant, que en empresa pres dissessió del mes en esta Prot a delaboración del del deliberación especial.
General Information           Analyst         MIMIL/TK           Company         Howard/Stein-Hudson           Date         10/6/2006           Project #         2006040		Site Information Intersection Condition Period		New Chardon Street/Surface Artery/Off-Ramps NO BUILD PM PEAK HOUR	<u>y/Off</u> -Ramps 
<i>Inpurts</i> Cycle length, C (sec.) <u>(</u> ®				Geometric Inputs  Crosswalk East Width, We (ft.)	e (ft.) 0
Off Ramps Effective green Red phase Ve	(ped/hour) 0 170	(ped/sec.) 0.00 0.05	(ped/C) 0 5	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>o</sub> (ft.)	
<u>36</u>	0 0	0.00	- 0	Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Grosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 10.6 No Crosswalk	alk East .6 sswalk	Crosswalk West 10.6 B	Crosswalk North 5.8 A	Crosswalk South 5.8 No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ft <sup>2</sup> -s) Total time-space, TS (ft <sup>2</sup> -s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, N <sub>bv</sub> (veh) Time-space of right-turning vehicles, TS <sub>tv</sub> (ft <sup>2</sup> -s) Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s) Circulation area per pedestrian, M (ft²/p) Pedestrian Circulation Area LOS	0 4.0 3.2 0 0 0 0 0 0 0 0 0 No Crosswalk	0 2 2 //0!	1.086111111 4.0 33.194375 55870.5 157 0 0 55870.5 356.4	0.122777778 4.0 4.0 15.227625 34560 11 0 0 34560 3142.5	0 4.0 3.2 0 0 0 0 0 #DIV/0! No Crosswalk

Company         MML/TK           Company         Howard/Stein-Hudson           Date         6/20/2008           Project #         2005014		Site Information Intersection Condition Period		Causeway Street/Haverhill Street/Legends Way NO BUILD PM PEAK HOUR	/Legends Way
Inputs Cycle length, C (sec.)				Geometric Inputs Crosswalk East Width, W <sub>o</sub> (ft.)	/ <sub>e</sub> (ft.) 10
	;			Crosswalk West Width, Ww (ft.)	
Causeway Street Effective green Red phase	(ped/hour) V <sub>e</sub> 244	<u>a</u>	(ped/C) 7	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	
Causeway Street 53		3 0.03	က	Crosswalk East Length, Le (ft.)	L <sub>e</sub> (ft.) 72
물건.	V <sub>n</sub> 394		+	Crosswalk West Length, L <sub>w</sub> (ft.)	
Haverhill Street	V <sub>s</sub> 430	0 0.12	12	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>n</sub> (ft.) 35 , L <sub>s</sub> (ft.) 25
Crosswalk Time-Space Analysis					
	_	Crosswalk East	Crosswalk West	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)		14.0	14.0	3.1	3.1
Pedestrian Delay LOS		В	a	A	A
Number of peds arriving during Don't Walk, N <sub>bed</sub> (p)		1.796111111	0.721388889	1.368055556	1.493055556
Average pedestrian walking speed, S <sub>p</sub> (ft/s)		4.0	4.0	4.0	4.0
Total crossing time, t (s)		21.68495	23.394775	12.319375	9.853125
Total time-space, TS (ft²-s)		27360	29600	24718.75	17968.75
Total crosswalk occupancy time, T (p-s)		147	64	135	118
Number of conflicting right-turning vehicles, N <sub>tv</sub> (veh)		0	0	0	_
Time-space of right-turning vehicles, ${\sf TS}_{\sf tv}$ (ft²-s)		33.3333333	0	133.333333	300
Effective time-space, $TS_E$ (ft <sup>2</sup> -s)		27326.66667	29600	24585.41667	17668.75
Circulation area per pedestrian, M (ft²/p)		185.9	464.8	182.3	150.1
Pedestrian Circulation Area LOS		⋖	4	4	4

Please		iici data		riease Note: Eillei data III STADED Cells Olliy		
General Information           Analyst         MML/TK           Company         Howard/Stein-Hudson           Date         6/20/2008           Project #         2005014			Site Information Intersection Condition Period		Beverly Street/Valenti Way NO BUILD PM PEAK HOUR	
Inputs	_				Geometric Inputs	
Cycle length, C (sec.)					Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	l
Effective green Red	;	our)	(bed/sec.)	(bed/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	
Valenti Way 62 48 Valenti Way 62 48	>° >³	9 9 9	0.0 0.01		Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.)	N <sub>s</sub> (ft.) 12
	<b>,</b>	200	90.0	9	Crosswalk West Length, L <sub>w</sub> (ft.)	
Beverly Street 84	>°	75	0.02	7	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	L <sub>s</sub> (ft.) 35 L <sub>s</sub> (ft.) 40
Crosswalk Time-Space Analysis						
		Crossw	Crosswalk East	<b>Crosswalk West</b>	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)		11	11.5	11.5		35.3
Pedestrian Delay LOS			В	В	A	O
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0.3333	0.33333333	0.2	-	0.875
Average pedestrian walking speed, S <sub>p</sub> (fVs)		4	4.0	4.0	4.0	4.0
Total crossing time, t (s)		12.781	12.781818	10.745	12.175	13.396875
Total time-space, TS (ft²-s)		197	50.5	17370	25042.5	5280
Total crosswalk occupancy time, T (p-s)		<b>←</b> `	18	တပ	89 (	28
Number of conflicting right-furning vehicles, N <sub>V</sub> (ver)			<b>.</b>	o c	55555550	<b>.</b>
Effective time-space, TS <sub>F</sub> (ff <sup>2</sup> -s)		197	19750.5	17370	24109.16667	5280
Circulation area per pedestrian, M (ft²/p)		111	1112.5	1939.9	356.4	189.2
Pedestrian Circulation Area LOS			<	∢	∢	4

	Crosswa	Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	zed Interse data in SH	ctions Wol	ksheet (HCM only	1 2000)	
General Information					Site Information	ion		
Analyst MML/TK	X	entrofficiologistal/Professe afficial/successibility and manifold frainfile of the frequency	A politicione employment designation of the Political States (Company).		Intersection	North Washing	ton Street/En	dicott Street
Company Howard	Howard/Stein-Hudson	uc		J	Condition	NO BUILD		
•	800				Period	PM PEAK HOUR	UR	
Project # 2005014	14							
<u>  Inputs</u>			_			Geometric Inputs	sinc	
ender von de de la companya de la co	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswalk East Width, We (ft.)	Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk West Width, Ww (ft.)	Width, Ww (ft.)	0
Endicott Street	4	0.00	14	0.00		Crosswalk North Width, Wn (ft.)	Width, W <sub>n</sub> (ft.)	0
0	0	0.00	0	00.0		Crosswalk South Width, W <sub>s</sub> (ft.)	י Width, $W_{\rm s}$ (ft.)	
North Washington Stre	0	0.00	0	0.00		Crosswalk East Length, Le (ft.)	Length, Le (ft.)	29
North Washington Stre	0	0.00	0	00.00		Crosswalk West Length, L <sub>w</sub> (ft.)	Length, Lw (ft.)	0
						Crosswalk North Length, Ln (ft.)	ı Length, Lո (ft.)	06
-						Crosswalk South Length, L <sub>s</sub> (ft.	ո Length, L <sub>s</sub> (ft.)	06
Crosswalk Time-Space Analysis	e Analysis							
			Crosswalk East	lk East	<b>Crosswalk West</b>		Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ng speed, S <sub>p</sub> (ft	(s)	4.0		4.0	*******	4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)			29		0		06	06
Single pedestrian critical gap, t <sub>c</sub> (s)	Jap, t <sub>c</sub> (s)		10.25	35	3.00		25.50	25.50
Typical pedestrian number in crossing platoon, No	r in crossing pla	atoon, N <sub>c</sub>	1.00	0	0.00	<u> </u>	0.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ıtion, N <sub>p</sub>		2		1		1	,
Group critial gap,			11.65	35	ı		ı	ı
Vehicular flow rate, V			0.00	0	0.00		0.00	0.00
Average pedestrian delay, D	ٔ ۵		0.27		1		ı	1
Pedestrain Delay LOS			⋖		No Crosswalk		No Crosswalk	No Crosswalk

General Information     Analyst   MML/TK     Company   Howard/S     Date   6/20/2008     Project #   2005014	ation MML/TK Howard/Stein-Hudson 6/20/2008 2005014	uos			Site Information Intersection No Condition NC Period PV	North W NO BUII PM PEA	Vorth Washington Street/Medford Street  NO BUILD PM PEAK HOUR	dford Street
<u>Inputs</u>						Geomei	Geometric Inputs	
		olumes (204/202)	I ramic volumes	olumes (b./ee)	<del></del>	Crosswal	Crosswalk East Wigth, We (It.)	9
c	(pea/nour)	(bed/sec.)	(ven/nour)	(ven/sec.)		Crosswal	Crosswalk West Width, W <sub>w</sub> (ft.)	2
Medford Street	5. 5	0.01	2 <	0.01		Crosswal	Crosswalk South Width, W <sub>s</sub> (ft.)	0
N Washington Street	5	0.00	1900	0.53		Crosswal	Crosswalk East Length, L <sub>e</sub> (ft.)	0
N Washington Street	4	0.00	1883	0.52		Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.)	46
						Crosswal Crosswal	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	08
Crosswalk Time-Space Analysis	e Analysis							
-	-		Crosswalk East	ilk East	Crosswalk West	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (π/s)	ng speed, S <sub>p</sub> (1	rvs)	 0.4	<b>5</b>	D.4		0.4	4.0
Pedestrian start-up time, t (s)	t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			_		46		80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	gap, t <sub>c</sub> (s)		3.0	9	14.50		23.00	23.00
Typical pedestrian number in crossing platoon, N <sub>c</sub>	er in crossing p	latoon, N <sub>c</sub>	00:00	0	1.01		491.79	356.58
Spatial pedestrian distribution, N <sub>p</sub>	ution, <b>N</b> <sub>p</sub>				7		1	1
Group critial gap,			1		15.67		ı	ı
Vehicular flow rate, V			0.0	0	0.01		0.53	0.52
Average pedestrian delay, D	'.		1		0.74		•	1
Pedestrain Delay LOS			No Crosswalk	sswalk	∢		No Crosswalk	No Crosswalk
			-			-	-	

General Information Analyst MML Company Howe Date 6/20/ Project # 2005	ation MML/TK Howard/Stein-Hudson 6/20/2008 2005014	uo			Site Information Intersection Cal	tion Causeway NO BUILD PM PEAK	on Causeway Street/Canal Street NO BUILD PM PEAK HOUR	set	
Inputs						Geomet	Geometric Inputs		
	Ped Volum	olumes	\$	lumes		Crosswall	Crosswalk East Width, W <sub>e</sub> (ft.)	ı	
	(bed/hour)	(bed/sec.)	<del>(</del>	(veh/sec.)		Crosswal	Crosswalk West Width, W <sub>w</sub> (ft.)	i	
Causeway Street	1035	0.29	1155	0.32		Crosswall	Crosswalk North Width, W <sub>n</sub> (ft.)	ļ	
Causeway Street	419	0.12	1193	0.33		Crosswal	Crosswalk South Width, W <sub>s</sub> (ft.)	ı	
Canal Stroot	038	900	60	5		Crosswal	Crosswalk East Length, L <sub>e</sub> (ft.)	1	
	9	) ! !	3	5		Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>r</sub> (ft.)		
							e		
Crosswalk Time-Space Analysis	Space Analysis								
			Crosswalk East	k East	Crosswalk West	West	Crosswalk North	Crosswalk South	£
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	valking speed, $S_p$ (ft	t/s)	4.0	***********	4.0		0.4	4.0	
Pedestrian start-up time, t (s)	me, t (s)		3.0		3.0		3.0	3.0	
Length of crosswalk, L (ft)	L (ft)		84	-	77		0	22	
Single pedestrian critical gap, t <sub>c</sub> (s)	ical gap, t <sub>c</sub> (s)		24.00	0	22.25		3.00	8.50	
Typical pedestrian number in crossing platoon, N <sub>c</sub>	imber in crossing pla	atoon, N <sub>c</sub>	1043.6	29	414.1	<del>د</del>	0.00	1.21	
Spatial pedestrian distribution, N <sub>p</sub>	stribution, N <sub>p</sub>		269		277		1	2	
Group critial gap,			1415.33	33	574.25	ω.	•	10.10	
Vehicular flow rate, V	,		0.32	٥.	0.33		0.00	0.04	
Average pedestrian delay, D	lelay, D		>45		>45		•	2.09	
Pedestrain Delay LOS	90		L		u		Ale Careers III.		

	Crosswalk		t Unsignaliz Vote: Enter	zed Inters data in SI	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	ksheet ( only	HCM 2000)	
General Information Analyst MML Company Hows Date 6/20/ Project # 2005	ation MML/TK Howard/Stein-Hudson 6/20/2008 2005014	oo			Site Information Intersection Ca Condition NC Period PN	Causeway Street NO BUILD PM PEAK HOUR	on Causeway Street/Medford Street NO BUILD PM PEAK HOUR	treet
Inputs			-		, R	Geometr	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, Ww (ft.)	0
Causeway Street	21	0.01	992	0.28		Crosswalk	Crosswalk North Width, Wn (ft.)	0
Causeway Street	32	0.01	978	0.27		Crosswalk	Crosswalk South Width, W <sub>s</sub> (ft.)	10
0	0	0.00	0	0.00		Crosswalk	Crosswalk East Length, Le (ft.)	58
Medford Street	212	90.0	18	0.01		Crosswalk	Crosswalk West Length, L <sub>w</sub> (ft.)	58
					<del>.</del>	Crosswalk Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	25
Crosswalk Tim	Crosswalk Time-Space Analysis							
			Crosswalk East	ılk East	<b>Crosswalk West</b>	Nest	Crosswalk North	Crosswalk South
Average pedestria	Average pedestrian walking speed, $S_{ m p}$ (ft/s)	t/s)	4.0	0	4.0		4.0	0.4
Pedestrian start-up time, t (s)	p time, t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	ılk, L (ft)		58	~	58		0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	critical gap, t <sub>c</sub> (s)		17.50	20	17.50		3.00	9.25
Typical pedestrian	Typical pedestrian number in crossing platoo	latoon, N <sub>c</sub>	3.46	မှ	4.51	<u> </u>	0.00	1.01
Spatial pedestrian distribution, N <sub>p</sub>	distribution, N <sub>p</sub>		'		•		ı	2
Group critial gap,			•		•		•	10.65
Vehicular flow rate, V	>, <		0.28	œ.	0.27		0.00	0.01
Average pedestrian delay, D	ın delay, D		1					0.29
Pedestrain Delay LOS	, Los		No Crosswalk	swalk	No Crosswalk	/alk	No Crosswalk	∢
						_		

	Crosswalk		Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	zed Inters data in SH	ections Wor IADED cells	ksheet (HC only	CM 2000)	
General Information Analyst MML Company Howe Date 6/20/	ation MML/TK Howard/Stein-Hudson 6/20/2008 2005014	oo			Site Information Intersection Ca Condition NC Period PN	tion Canal Street/Valer NO BUILD PM PEAK HOUR	on Canal Street/Valenti Way NO BUILD PM PEAK HOUR	
Inputs			•			Geometric Inputs	Inputs	
	Ped Volumes	olumes	Traffic Volumes	olumes	The first fi	Crosswalk Ea	Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk W	Crosswalk West Width, W <sub>w</sub> (ft.)	10
Valenti Way	116	0.03	17	00:00		Crosswalk No	Crosswalk North Width, Wn (ft.)	10
Valenti Way	115	0.03	106	0.03		Crosswalk Sc	Crosswalk South Width, Ws (ft.)	10
Canal Street	378	0.11	93	0.03		Crosswalk Ea	Crosswalk East Length, Le (ft.)	32
Canal Street	101	0.03	42	0.01		Crosswalk W	Crosswalk West Length, L <sub>w</sub> (ft.)	<u> </u>
						Crosswalk No	Crosswalk North Length, Ln (ft.)	28
						Crosswalk Sc	Crosswalk South Length, $L_{\rm s}$ (ft.)	23
Crosswalk Tim	Crosswalk Time-Space Analysis							
			Crosswalk East	ılk East	<b>Crosswalk West</b>		Crosswalk North	<b>Crosswalk South</b>
Average pedestrit	Average pedestrian walking speed, $S_{p}$ (ft/s)	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	p time, t (s)		3.0	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	alk, L (ft)		32	01	26		28	23
Single pedestrian	Single pedestrian critical gap, t <sub>c</sub> (s)		11.0	00	9.50		10.00	8.75
Typical pedestriar	Typical pedestrian number in crossing platoon, $N_{\rm c}$	latoon, N <sub>c</sub>	1.0		1.04		1.11	1.01
Spatial pedestrian distribution, N <sub>p</sub>	n distribution, $N_{ m p}$		7		7		2	2
Group critial gap,			12.4	40	10.90		11.40	10.15
Vehicular flow rate, V	> <b>.</b> e		0.0	0	0.03		0.03	0.01
Average pedestrian delay, D	an delay, D		0.3		1.95		1.86	0.63
Pedestrain Delay LOS	SOT/		⋖		∢		4	∢

Crosswalk Analysis Pleas	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	ed Intersection data in SHADE	ns Worksheel D cells only	(HCM 2000)	
General Information Analyst MML/TK Company Howard/Stein-Hudson Date 6/20/2008 Project # 2005014		Site Inform Intersection Condition Period	formati	on Causeway Street/Beverly Streel NO BUILD PM PEAK HOUR	eet .
Inputs Pad Volumes	semilo/(office)	III	Geome	Geometric Inputs	O
(ped/hour) (ped/sec.)	(veh/hour)	(veh/sec.)	Crosswa	Crosswalk West Width, W <sub>w</sub> (ft.)	
Causeway Street 39 0.01		0.29	Crosswa	Crosswalk North Width, W <sub>n</sub> (ft.)	0
Causeway Street 26 0.01	1134	0.32	Crosswa	Crosswalk South Width, W <sub>s</sub> (ft.)	10
00.0 0 0.00	0	0.00	Crosswa	Crosswalk East Length, Le (ft.)	89
Beverly Street 210 0.06	126	0.04	Crosswa	Crosswalk West Length, L <sub>w</sub> (ft.)	89
			Crosswa	Crosswalk North Length, L <sub>n</sub> (ft.)	0
			Crosswa	Crosswalk South Length, L <sub>s</sub> (ft.)	30
Crosswalk Time-Space Analysis					
	Crosswalk East	_	Crosswalk West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)	89		89	0	30
Single pedestrian critical gap, $t_c$ (s)	20.00		20.00	3.00	10.50
Typical pedestrian number in crossing platoon, N <sub>c</sub>	12.45	10	13.05	0.00	1.11
Spatial pedestrian distribution, N <sub>p</sub>	ī			•	2
Group critial gap,	1		•	1	11.90
Vehicular flow rate, V	0.29		0.32	00:00	0.04
Average pedestrian delay, D	ī		•	•	2.86
Pedestrain Delay LOS	No Crosswalk		No Crosswalk	No Crosswalk	∢

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only
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General Information	nation			Sit	Site Information			
Analyst	MML/TK			Inte	Intersection	Valenti Way/Haverhill Street	erhill Street	
Company	Howard/Stein-Hudson	son		ō		NO BUILD		
Date Project #	6/20/2008			Per	Period	PM PEAK HOUR		
,								
Imputs					Cu	Geometric Inputs	S	
	Ped Volur	olumes,	Traffic Volumes	nmes		Crosswalk East Width, W <sub>e</sub> (ft.)	Jth, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	ď.)	(veh/sec.)	_	Crosswalk West Width, W <sub>w</sub> (ft.)	dth, W <sub>w</sub> (ft.)	0
Valenti Way	0	0.00	104	0.03	_	Crosswalk North Width, Wn (ft.)	idth, W <sub>n</sub> (ft.)	10
Valenti Way		0.00	110	0.03		Crosswalk South Width, W <sub>s</sub> (ft.)	idth, W <sub>s</sub> (ft.)	0
Haverhill Street	t 250	0.07	94	0.03		Crosswalk East Length, Le (ft.)	ngth, L <sub>e</sub> (ft.)	0
0		0.00	0	0.00		Crosswalk West Length, L <sub>w</sub> (ft.)	ngth, L <sub>w</sub> (ft.)	0
						Crosswalk North Length, L <sub>n</sub> (ft.)	ingth, L <sub>n</sub> (ft.)	28
						Crosswalk South Length, L <sub>s</sub> (ft.)	əngth, L <sub>s</sub> (ft.)	0
Crosswalk Tin	Grosswalk Time-Space Analysis							
			Crosswalk East		<b>Crosswalk West</b>		Crosswalk North	Crosswalk South
Average pedestri	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	(£/s)	4.0		4.0	4	4.0	4.0
Pedestrian start-up time, t (s)	up time, t (s)		3.0	-	3.0	<i>е</i>	 O	3.0
Length of crosswalk, L (ft)	alk, L (ft)				0	2	28	0
Single pedestriar	Single pedestrian critical gap, $t_{\rm c}\left(s\right)$		3.00		3.00	10	00.	3.00
Typical pedestria	Typical pedestrian number in crossing platoon, $N_{\mbox{\scriptsize c}}$	olatoon, N <sub>c</sub>	1.00		1.00		80	0.00
Spatial pedestrian distribution, N <sub>p</sub>	n distribution, N <sub>p</sub>		•		•		01	ı
Group critial gap,			•		ı	11	.40	ı
Vehicular flow rate, V	te, V		0.03		0.03	ō	03	0.00
Average pedestrian delay, D	an delay, D		,		1	<u>~</u>	88	ı
Pedestrain Delay LOS	y LOS		No Crosswalk	walk	No Crosswalk			No Crosswalk
				~				

Analyst TK			Site Information	inion		
Company Howard/Stein-Hudson  Date 6/21/2008  Project # 2005014			Intersection Condition Period		North Washington Street/Causeway Street BUILD AM PEAK HOUR	ay Street
Inputs Cycle length C (sec.)	-				Geometric Inputs Crosswalk East Width W. (4)	1 (# ) 12
					Crosswalk West Width, W <sub>w</sub> (ft.)	
Commercial Street Effective green Red phase	>	(ped/hour)	(ped/sec.)	(ped/C)	Crosswalk North Width, W <sub>n</sub> (ft.)	W <sub>n</sub> (ft.) 12
) (S)	° >*	23 23	0.01	) <del>-</del>	Crosswalk East Length, Le (ft.)	
<u>ම</u> ිල	>	147	0.04	မ	Crosswalk West Length, L <sub>w</sub> (ft.)	
N Washington Street	>°	234	0.07	10	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	. L <sub>n</sub> (ft.) 84
Crosswalk Time-Space Analysis						
		Crosswalk East	alk East	Crosswalk West	Cross	Crosswalk South
Average delay, d <sub>p</sub> (s)		10.5	rö.	10.5	29.5	29.5
Pedestrian Delay LOS		Δ	~	20	2	ပ
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0.98	98	0.178888889	1.919166667	3.055
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	·	4.0	0	4.0	4.0	4.0
Total crossing time, t (s)		25.6705	705	22.99025	24.6318125	26.387375
Total time-space, TS (ft²-s)		88510.5	10.5	79750.5	45864	48330
Total crosswalk occupancy time, T (p-s)		135	35	22	151	257
Number of conflicting right-turning vehicles, N <sub>W</sub> (veh)		<b>~</b>	10	0	56	0
I ime-space of right-turning vehicles, TS <sub>V</sub> (IT-s)		4660	09	0	12380	0
Circulation area nor nedestrian M (#²(n)		63050.5	 	79750.5	33484	48330
Pedestrian Circulation Area LOS		0 <b>2</b> 2.	7:- 1	₹:. <b>∀</b>	8:13 <b>2</b>	6: <b>V</b>

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	sis at Signalized Intersections Worksheetse Note: Enter data in SHADED cells only	Worksheet (HCN Cells only	л 2000)	
General InformationAnalystTKCompanyHoward/Stein-HudsonDate6/21/2008Project #2005014	Site Information Intersection Condition Period	ation .	N. Washington Street/Thacher Street/Valenti Way BUILD AM PEAK HOUR	ett∕⁄alenti Way 
Cycle length, C (sec.)  Cycle length, C (sec.)  Effective green Red phase  Thacher Street  Valenti Way  N. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington  M. Washington	(ped/hour) (ped/sec.) 95 0.03 38 0.01 252 0.07 6 0.00	(ped/C) 3 1 7 0	Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk Worth Width, W <sub>n</sub> (ft.) Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.) Crosswalk West Length, L <sub>n</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>n</sub> (ft.)	(ft.) 12 (ft.) 12 (ft.) 12 (s. (ft.) 0 (ft.) 25 (ft.) 52 (ft.) 52 (ft.) 52 (ft.) 52 (ft.) 52
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 0.0 A	Crosswalk West 0.0 A	Crosswalk North 26.6 C	Crosswalk South 50.0 No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ff²-s) Total time-space, TS (ff²-s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, N <sub>v</sub> (veh) Time-space of right-turning vehicles, TS <sub>v</sub> (ff²-s) Effective time-space, TS <sub>E</sub> (ff²-s) Circulation area per pedestrian, M (ft²/p) Pedestrian Circulation Area LOS	0 4.0 9.45 29062.5 25 0 0 29062.5 1165.4	0 4.0 16.2 58344 17 0 0 58344 3411.9	2.555 4.0 21.274875 15330 149 0 0 15330 102.9	0.083333333 4.0 3.2225 0 1 0 0 0 0.0 No Grosswalk

General Information		Site Information	Hon		
Analyst TK Company Howard/Stein-Hudson Date 6/18/2008 Project # 2005014		Intersection Condition Period		North Washington Street/Beverly Streel BUILD AM PEAK HOUR	Street
	_			Geometric Inputs	
Cycle length, C (sec.)				Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W., (ft.)	
Effective green Red phase	)ed)	(ped/sec.)	(bed/C)	Crosswalk North Width, Wn (ft.)	W <sub>n</sub> (ft.) 12
Beverly Street 58 42	0 %	0.00	0 +	Crosswalk South Width, W <sub>s</sub> (ft.)	ı
yton Street	·	0.03	- ო	Crosswalk West Length, L <sub>w</sub> (ft.)	
North Washington Street		00.00	0	Crosswalk North Length, L <sub>n</sub> (ft.)	, L <sub>n</sub> (ft.) 57
				Crosswalk South Length, L <sub>s</sub> (ft.)	ı, L <sub>s</sub> (ft.) 0
Crosswalk Time-Space Analysis					
	Crossw	Crosswalk East	Crosswalk West	Cross	<b>Crosswalk South</b>
Average delay, d <sub>p</sub> (s)	Σ <b>(</b>	50.0	ω. Θ.	15.7	50.0
redestrian Delay LOS	NO CLC	NO Crosswaik	¥	Ω.	NO Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0	0.21	0.83222222	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)		0.4	4.0	4.0	4.0
Total crossing time, t (s)		3.2	12.74725	17.63725	3.2
Total time-space, TS (ft²-s)		0	24282	25222.5	0
Total crosswalk occupancy time, T (p-s)		0 (	13	52	0
Number of conflicting right-furning vehicles, $N_{\rm V}$ (ven)		0 0	<b>o</b> c	0 0	0 0
Effective time-space, $TS_E$ (ff <sup>2</sup> -s)			24282	25222.5	» o
Girculation area per pedestrian, M (ft²/p)		,	1904.9	09^	,
Pedestrian Circulation Area LOS	No Crc	No Crosswalk	¥	⋖	No Crosswalk

Analyst         TK         Intersect Condition           Company Date         Howard/Stein-Hudson         Condition           Project #         2005014         Period           Project #         2005014         Period           Inputs         Ked phase         (ped/hour)           Cooper         Effective green         Red phase           Cooper         85         0.02           Sumner Tunnel         Vw         151         0.04           N. Washington         Vn         Vn         0         0.00           Cross         57         Vs         128         0.04           Average delay, dp (s)         A         1.0         A           Pedestrian Delay LOS         A         0.165277778	Intersection   Condition   Period	()	North Washington Street/Cross Street/Cooper Street BUILD  AM PEAK HOUR  Geometric.Inputs  Crosswalk East Width, We (ft.) Crosswalk West Width, W <sub>n</sub> (ft.) Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.) Crosswalk West Length, L <sub>n</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>n</sub> (ft.)	ft.) 12 (ft.) 12 (ft.) 0 (ft.) 26 (ft.) 26 (ft.) 26 (ft.) 26 (ft.) 26 (ft.) 26 (ft.) 26 (ft.) 6
Effective green   Red phase   (ped/hour)		d/C) 2 4 4 4	Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ff Crosswalk West Width, W <sub>w</sub> ( Crosswalk North Width, W <sub>n</sub> Crosswalk South Width, W <sub>s</sub> Crosswalk East Length, L <sub>e</sub> (f Crosswalk West Length, L <sub>w</sub> ( Crosswalk North Length, L <sub>w</sub> ( Crosswalk South Length, L <sub>r</sub>	
# Effective green Red phase (ped/hour)  ## Post Properties		d/C) 2 4 4 4	Crosswalk North Width, W <sub>n</sub> Crosswalk South Width, W <sub>s</sub> (Crosswalk East Length, L <sub>w</sub> (Crosswalk West Length, L <sub>w</sub> (Crosswalk North Length, L <sub>n</sub> (Crosswalk South Length, L <sub>s</sub>	-
shington 100 Vn 0  swalk Time-Space Analysis  ge delay, d <sub>p</sub> (s)  trian Delay LOS  arriving during Don't Walk, N <sub>ood</sub> (b)  0.165277		0 4	Crosswalk West Length, L <sub>w</sub> ( Crosswalk North Length, L <sub>n</sub> ( Crosswalk South Length, L <sub>s</sub>	
		Crosswalk West 4.2 A	Crosswalk North 50.0 No Crosswalk	Crosswalk South 16.2 B
		0.608194444	0 ;	1.013333333
Average pedestrian walking speed, $S_{\rm p}$ (T/s) 4.0 Total crossing time, t (s) 9.7371875	0 71875	4.0 9.83684375	3.2	4.0 9.4736
Total time-space, TS (ff2-s)  Total crosswalk occurancy time T (n.s.)	818	21138	00	9600
(veh)	20	0	0 0	ţ o
Time-space of right-turning vehicles, TS <sub>V</sub> (ff²-s) 0  Effective time-space, TS <sub>E</sub> (ff²-s) 25818	0818	21138	0 0	0
M (ft²/p) OS	23.0 <b>A</b>	512.3 <b>A</b>	0.0 No Crosswalk	285.0 <b>A</b>

Crosswalk A	nalized Inters Inter data in S	nalysis at Signalized Intersections Worksheer Please Note: Enter data in SHADED cells only	neet (HCM 2	(000)	
General Information           Analyst         TK           Company         Howard/Stein-Hudson           Date         6/21/2008           Project #         2005014	Sit Interest of the Per-	Site Information Intersection Condition Period	New Chardon Str BUILD AM PEAK HOUR	New Chardon Street/Surface Artery/Off-ramp BUILD AM PEAK HOUR	/f-ramp 
Inputs Cycle length, C (sec.)				<b>Geometric Inputs</b> Crosswalk East Width, W <sub>e</sub> (ft.)	
Off Ramps Effective green Red phase Ve	(ped/hour) (pe 0 223	(ped/sec.) (ped/C) 0 0 0 0 0 0 0 0 0 0 0 6		Crosswalk West Width, W <sub>w</sub> (ft.) Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>s</sub> (ft.)	t.) 12 (f.) 12 (f.) 0
		0.00 0		Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 8.8 No Crosswalk		Crosswalk West 8.8 A	Crosswalk North 7.2 A	Crosswalk South 7.2 No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s)	0 4.0	1.30	1.300833333	0.480277778	0.4.0
l otal crossing time, t (s) Total time-space, TS (ft²-s) Total crosswalk occupancy time, T (p-s)	3.2	E. G	33.2426875 61582.5 206	15.3080625 32256 39	3.2 0 0
Number of conflicting right-turning vehicles, $N_{\rm lv}$ (veh)  Time-space of right-turning vehicles, $TS_{\rm lv}$ (ft²-s)  Effective time-space, $TS_{\rm lc}$ (ft²-s)	000	<b>ω΄</b> `	0 0 61582.5 200 1	0 0 32256 833 6	000
Pedestrian Circulation Area LOS	No Crosswalk		<b>A</b>	<b>A</b>	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	inalized Interse Enter data in S	nalysis at Signalized Intersections Worksheet Please Note: Enter data in SHADED cells only	(HCM 2000)	
General Information           Analyst         TK           Company         Howard/Stein-Hudson           Date         6/21/2008           Project #         2005014	Sift Inte	Site Information Intersection Condition BU AM	Causeway Street/Haverhill Street/Legends Way BUILD AM PEAK HOUR	gends Way 
Inputs Cycle length, C (sec.) Cfective green Red phase	ed) (ɪnoң/ped)	(ped/sec.) (ped/C)	Geometric Inputs  Crosswalk East Width, We (ft.) Crosswalk West Width, Ww, (ft.) Crosswalk North Width, Wh, (ft.)	
Causeway Street 43 Ve Causeway Street 43 Vw Legends Way 65 25 Vn Haverhill Street 65 Vs	195 946 259 653	0.05 5 0.26 24 0.07 6 0.18 16	Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.) Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>n</sub> (ft.)	1 1 1 1 1 1
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 10.3 B	East Crosswalk West 10.3	West Crosswalk North 3.5 A	Crosswalk South 3.5 A
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ff²-s) Total time-space, TS (ff²-s)	1.164583333 4.0 21.5144375 27360 105	24.7	0.896	2.267361111 4.0 10.0621875 15468.75 164
Number of conflicting right-turning vehicles, $N_{\rm v}$ (veh) Time-space of right-turning vehicles, $TS_{\rm v}$ (ft <sup>2</sup> -s) Effective time-space, $TS_{\rm E}$ (ft <sup>2</sup> -s) Circulation area per pedestrian, $M$ (ft <sup>2</sup> /p) <b>Pedestrian Circulation Area LOS</b>	0 130 27230 259.6 <b>A</b>	0 0 29600 50.6 <b>B</b>	21.	1 290 15178.75 92.4 <b>A</b>

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only General Information Site Information	nalysis at Signalized Intersections Worksheer Please Note: Enter data in SHADED cells only Site Information	ersections Worlin SHADED cell	Vorksheet (HCN cells only ion	1 2000)	
Analyst TK Company Howard/Stein-Hudson Date 6/21/2008 Project # 2005014		Intersection Condition Period	Beverly BUILD AM PE/	Beverly Street/Valenti Way BUILD AM PEAK HOUR	A CONTRACTOR OF THE CONTRACTOR
<i>Inputs</i> Cycle length, C (sec.) <b>(</b> €00				Geometric Inputs Crosswalk East Width, We (ft.) Crosswalk West Width, W. (ft.)	
Valenti Way Effective green Red phase Ve Valenti Way 48 52 Ve	ed)	(ped/sec.) 0.03 0.04	(ped/C) 3 4	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length, L <sub>e</sub> (ft.)	(ft.) 38
Beverly Street Se 32 V <sub>n</sub> Beverly Street V <sub>s</sub>	472	0.13	<del>د</del> د	Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	-
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crossw 13	Crosswalk East 13.5 B	Crosswalk West 13.5 B	Crosswalk North 5.1 A	Crosswalk South 35.3 D
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ft <sup>2</sup> -s)	0.7 4 4 12.8 180	0.715 4.0 12.8755 18078.5	1.148333333 4.0 10.958375	2.09777778 4.0 12.422 26722.5	1.16666667 4.0 13.4625 5280
Number of conflicting right-turning vehicles, $N_{\rm tr}$ (veh)  Time-space of right-turning vehicles, $TS_{\rm tr}$ (ft <sup>2</sup> -s)  Effective time-space, $TS_{\rm E}$ (ft <sup>2</sup> -s)  Circulation area per pedestrian, $M$ (ft <sup>2</sup> /p)		35 0 0 18078.5 510.6	48 0 0 15930 329.1 <b>A</b>	163 3 1413.333333 25309.16667 155.4 <b>A</b>	37 0 0 5280 141.2 <b>A</b>

	Crosswalk	alk Analysis Please	at Unsignali Note: Enter	lalysis at Unsignalized Intersections Workshee Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only
General Information Analyst TK Company Howard/S Date 6/21/200	ation TK Howard/Stein-Hudson 6/21/2008 2005014	uos		Site Inform Intersection Condition Period	Site Information Intersection North Washington Street/Endicott Street Condition BUILD Period AM PEAK HOUR
Inputs  Endicott Street  North Washington Stre	Ped Volum (ped/hour) (p 11 0 0	olumes (ped/sec.) 0.00 0.00 0.00	Traffic Volumes (veh/hour) (veh/sec.) 46 0.01 0 0.00 1649 0.46 1605 0.45	Traffic Volumes  //hour) (veh/sec.)  46 0.01  0 0.00  649 0.46  605 0.45	Crosswalk East Width, W <sub>e</sub> (ft.) 10 Crosswalk West Width, W <sub>w</sub> (ft.) 0 Crosswalk North Width, W <sub>w</sub> (ft.) 0 Crosswalk South Width, W <sub>s</sub> (ft.) 0 Crosswalk South Width, W <sub>s</sub> (ft.) 0 Crosswalk East Length, L <sub>e</sub> (ft.) 29 Crosswalk West Length, L <sub>w</sub> (ft.) 0 Crosswalk North Length, L <sub>w</sub> (ft.) 90 Crosswalk South Length, L <sub>s</sub> (ft.) 90

	Crosswalk East	<b>Crosswalk West</b>	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	0.4	4.0	4.0	4.0
Pedestrian start-up time, t (s)	3.0	3.0	3.0	3.0
Length of crosswalk, L (ft)	29	0	06	06
Single pedestrian critical gap, $ m t_c$ (s)	10.25	3.00	25.50	25.50
Typical pedestrian number in crossing platoon, N <sub>c</sub>	1.00	0.00	0.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	2	ı		1
Group critial gap,	11.65	ı	ı	ı
Vehicular flow rate, V	0.01	0.00	0.00	0.45
Average pedestrian delay, D	0.91	•	1	ı
Pedestrain Delay LOS	4	No Crosswalk	No Crosswalk	No Crosswalk

	Crosswalk		Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	zed Inters data in SI	ections Wol	ksheet (	(HCM 2000)	
General Information Analyst TK Company Howard/S	ation TK Howard/Stein-Hudson	00			Site Information Intersection No Condition BU	ion North Wa BUILD	North Washington Street/Medford Street BUILD	dford Street
**	114					AM TENANT		
Inputs						Geometi	Geometric Inputs	
	Ped Volumes	lumes	Š	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, Ww (ft.)	12
0	0	0.00	0	0.00		Crosswalk	Crosswalk North Width, Wn (ft.)	0
Medford Street	37	0.01	31	0.01		Crosswalk	Crosswalk South Width, W <sub>s</sub> (ft.)	0
N Washington Street	4	0.00	1617	0.45		Crosswalk	Crosswalk East Length, Le (ft.)	0
N Washington Street	0	0.00	1610	0.45		Crosswalk	Crosswalk West Length, Lw (ft.)	46
					••••	Crosswalk	Crosswalk North Length, Ln (ft.)	80
						Crosswalk	Crosswalk South Length, L <sub>s</sub> (ft.)	80
Crosswalk Time-Space Analysis	ce Analysis				_			
From 20th Charles of Carles and C			Crosswalk East	lk East	<b>Crosswalk West</b>	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ng speed, S <sub>p</sub> (ft	(s)	4.0	_	4.0		4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)			0		46		80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	gap, $t_{ m c}$ (s)		3.00	0	14.50		23.00	23.00
Typical pedestrian number in crossing platoon, N <sub>c</sub>	er in crossing pla	atoon, N <sub>c</sub>	0.00	0	1.01		76.64	1.00
Spatial pedestrian distribution, N <sub>p</sub>	ution, N <sub>p</sub>		1	<del></del>	2			1
Group critial gap,			1		15.67		ı	1
Vehicular flow rate, V			0.00	0	0.01		0.45	0.45
Average pedestrian delay, D	′. ۵		•	r. r	1.11			1
Pedestrain Delay LOS			No Crosswalk	swalk	<b>4</b>		No Crosswalk	No Crosswalk

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000)	Please Note: Enter data in SHADED cells only

		Please N	Please Note: Enter data in SHADED cells only	ta in SHADE	D ceils only		
General Information	nation			Site In	Site Information		
Analyst	TK	entika mulasi yanatasi annananata tarika dahatata at backada sakada dahata dahata dahata dahata dahata dahata d	And the company for the incidence of the company of	Intersection	ction Causev	Causeway Street/Canal Street	et
Company	Howard/Stein-Hudson	on		Condition			
Date	6/21/2008			Period		AM PEAK HOUR	
Project #	2005014						
Inputs					Geome	Geometric Inputs	
N COMPANY CARGO AND AND AND AND AND AND AND AND AND AND	Ped Volum	olumes	Traffic Volumes	ıes	Crosswa	Crosswalk East Width, W <sub>e</sub> (ft.)	12
	(bed/hour)	(bed/sec.)	(veh/hour) (ve	(veh/sec.)	Crosswa	Crosswalk West Width, W <sub>w</sub> (ft.)	12
Causeway Street	t 128	0.04	1574	0.44	Crosswa	Crosswalk North Width, Wn (ft.)	0
Causeway Street		0.04		0.42	Crosswa	Crosswalk South Width, W <sub>s</sub> (ft.)	_
0	0	0.00	0	0.00	Crosswa	Crosswalk East Length, Le (ft.)	84
Canal Street	1065	0:30		0.04	Crosswa	Crosswalk West Length, L <sub>w</sub> (ft.)	
					Crosswa	Crosswalk North Length, L <sub>n</sub> (ft.)	
·					Crosswa	Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Tin	<b>Crosswalk Time-Space Analysis</b>				D.		
			Crosswalk East		Crosswalk West	Crosswalk North	<b>Crosswalk South</b>
Average pedestri	Average pedestrian walking speed, $S_{ m p}$ (ft/s)	fVs)	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	up time, t (s)		3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)	⁄alk, لـ (ft)		84		77	0	22
Single pedestriar	Single pedestrian critical gap, t <sub>c</sub> (s)		24.00		22.25	3.00	8.50
Typical pedestria	Typical pedestrian number in crossing platoon, $\ensuremath{\text{N}_{\text{c}}}$	latoon, N <sub>c</sub>	2713.38		1021.26	00:00	1.25
Spatial pedestria	Spatial pedestrian distribution, N <sub>p</sub>		1810		682	ı	2
Group critial gap,	_		3641.67		1383.75	1	10.30
Vehicular flow rate, V	te, V		0.44		0.42	00.00	0.04
Average pedestrian delay, D	ian delay, D		>45		>45	'	2.48
Pedestrain Delay LOS	ıy LOS		L.		L	No Crosswalk	A
			-				

	Crosswalk		at Unsignali: Note: Enter	zed Interso data in SF	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information	uo				Site Information	1	
Analyst TK	Programme and the control of the con	The state of the control of the cont	encount (20 despoyable) on the elementation (despoyable) of the first	The state of the s	Intersection C	auseway Street/Medford	Street
Company	Howard/Stein-Hudson	uc			•	BUILD	
•	6/21/2008			<b>billio</b>	Period A	AM PEAK HOUR	
Project # 200	2005014						
Inputs					9	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes	0	Crosswalk East Width, W <sub>e</sub> (ft.)	0 (
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	0	Crosswalk West Width, W <sub>w</sub> (ft.)	
Causeway Street	27	0.01	1158	0.32	υ —	Crosswalk North Width, Wn (ft.)	]
Causeway Street	36	0.01	1154	0.32	0	Crosswalk South Width, W <sub>s</sub> (ft.)	t.) 10
0	0	0.00	0	0.00	<u> </u>	Crosswalk East Length, Le (ft.)	
Medford Street	369	0.10	28	0.01	<u>o</u>	Crosswalk West Length, L <sub>w</sub> (ft.)	t.) 58
					о 	Crosswalk North Length, L <sub>n</sub> (ft.)	ł
					····	Crosswalk South Length, L <sub>s</sub> (ft.)	t.) <u>25</u>
Crosswalk Time-Space Analysis	pace Analysis						
			Crosswalk East	ılk East	Crosswalk West	est Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	/alking speed, S <sub>p</sub> (ft.	/s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	ne, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	L (ft)		58	~	58	0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	ical gap, ${ m t_c}$ (s)		17.50	20	17.50	3.00	9.25
Typical pedestrian number in crossing platoon, N <sub>c</sub>	mber in crossing pla	atoon, N <sub>c</sub>	7.20	0	9.07	0.00	1.03
Spatial pedestrian distribution, N <sub>p</sub>	tribution, N <sub>p</sub>		!		ı	1	2
Group critial gap,			ı		ı	•	10.65
Vehicular flow rate, V			0.32	Z.	0.32	0.00	0.01
Average pedestrian delay, D	elay, D		1		1	1	0.45
Pedestrain Delay LOS	SC		No Crosswalk	swalk	No Crosswalk	ik No Crosswaik	⋖

	Crosswa	alk Analysis a Please N	t Unsignali Vote: Enter	zed Inters data in SI	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst TK Company Howard/8 Date 6/21/200 Project # 2005014	<b>ation</b> TK Howard/Stein-Hudson 6/21/2008 2005014	oo			Site Information Intersection Ca Condition BU Period AN	ion Canal Street/Valenti Way BUILD AM PEAK HOUR	
Inputs					9	Geometric Inputs	
	Ped Volui	olumes	Traffic Volumes	olumes	ပ	Crosswalk East Width, W <sub>e</sub> (ft.)	
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	<u>.</u>	Crosswalk West Width, W <sub>w</sub> (ft.)	J _
Valenti Way	152	0.04	62	0.02		Crosswalk North Width, Wn (ft.)	_
Valenti Way	186	0.05	128	0.04	·	rosswalk South Width, W <sub>s</sub> (	
Canal Street	604	0.17	113	0.03	<u> </u>	Crosswalk East Length, Le (ft.)	1
Canal Street	117	0.03	25	0.01	<u>o</u>	Crosswalk West Length, L <sub>w</sub> (ft.)	t.) 26
					<u>ပ</u>	Crosswalk North Length, L <sub>n</sub> (ft.)	_
					·	Crosswalk South Length, L <sub>s</sub> (ft.	
Grosswalk Time-Space Analysis	ace Analysis						
			Crosswalk East	ılk East	<b>Crosswalk West</b>	est Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	king speed, $S_{ m p}$ (f	(s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	(#)		32	01	26	28	23
Single pedestrian critical gap, t <sub>c</sub> (s)	il gap, ${\sf t_c}$ (s)		11.0	8	9.50	10.00	8.75
Typical pedestrian number in crossing platoon, N <sub>c</sub>	ber in crossing pl	atoon, N <sub>c</sub>	1.0	4	1.08	1.18	1.01
Spatial pedestrian distribution, N <sub>p</sub>	bution, N <sub>p</sub>		2		7	2	2
Group critial gap,			12.4	40	10.90	11.60	10.15
Vehicular flow rate, V			0.0	2	0.04	0.03	0.01
Average pedestrian delay, D	ay, D		4.1	7	2.41	2.39	0.37
Pedestrain Delay LOS			∢		∢	∢	V

	Crosswalk	ilk Analysis a Please N	t Unsignaliz Vote: Enter	zed Interse data in SH,	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst TK Company Hows Date 6/21/	ation TK Howard/Stein-Hudson 6/21/2008 2005014	uc .		v = o ₫	Site Information Intersection Ca Condition BU Period AN	ion Causeway Street/Beverly Street BUILD AM PEAK HOUR	reet
<u>Inpurts</u>	Ped Volumes	lumes	Traffic Volumes	olumes	<b>.</b> ກົວ	Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.)	0
Causeway Street	(ped/hour) 32	(ped/sec.) 0.01	(veh/hour) 1165	(veh/sec.) 0.32	ວົ ວັ	Crosswalk West Width, W <sub>w</sub> (ft.) Crosswalk North Width, W <sub>s</sub> (ft.)	
Causeway Street	16	0.00	1446	0.40	້ວ	Crosswalk South Width, W <sub>s</sub> (ft.)	
0	0	0.00	0 7	0.00	ວັ ຄື	Crosswalk East Length, Le (ft.)	89
המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות המעמות	, ,	<u>2</u> 	200	) ) )	<u>.</u>	Crosswark west Lengur, L <sub>w</sub> (tr.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis	ace Analysis				_		
			Crosswalk East	lk East	<b>Crosswalk West</b>	st Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	Iking speed, S <sub>p</sub> (ft/	(s)	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0	_	3.0	3.0	3.0
Length of crosswalk, L (ft)	(ft)		89		89	0	30
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, $t_c\left(s\right)$		20.00	0	20.00	3.00	10.50
Typical pedestrian number in crossing platoo	ber in crossing pla	atoon, N <sub>c</sub>	18.11		34.63	0.00	1.58
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		ı		•	•	2
Group critial gap,			1		•	•	12.70
Vehicular flow rate, V			0.32	7	0.40	0.00	60.0
Average pedestrian delay, D	ay, D		ı	•	ı	•	10.50
Pedestrain Delay LOS			No Crosswalk	swalk	No Crosswalk	No Crosswalk	U

		Please Note: Enter data in SHADED cells only		ata III OII	י פווס מומל		
General Information Analyst TK Company Howa Date 6/21/2	ation TK Howard/Stein-Hudson 6/21/2008 2005014	uo		Ø Ē ŏ å	Site Information Intersection ValCondition BU	tion Valenti Way/Haverhill Streel BUILD AM PEAK HOUR	1
Inputs					9	Geometric Inputs	
en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	Ped Volumes	lumes	Traffic Volumes	nmes	  -  -	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour) (v	(veh/sec.)	<u>ა</u>	Crosswalk West Width, W <sub>w</sub> (ft.)	0
Valenti Way	0	0.00	385	0.11	<u>ა</u>	Crosswalk North Width, W <sub>n</sub> (ft.)	
Valenti Way	0	0.00	202	90.0	<u>ა</u>	Crosswalk South Width, W <sub>s</sub> (ft.)	
Haverhill Street	473	0.13	183	0.05	<u>ن</u>	Crosswalk East Length, Le (ft.)	
0	0	0.00	0	0.00	<u>ა</u> ა	Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.)	-
					ပ် 	Crosswalk South Length, L <sub>s</sub> (ft.)	0
<b>Grosswalk Time-Space Analysis</b>	ace Analysis						
			Crosswalk East	East	<b>Crosswalk West</b>	est Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	Iking speed, S <sub>p</sub> (ft	(s/	4.0		4.0	4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0		3.0	3.0	3.0
Length of crosswalk, L (ft)	(ft)		0		0	28	0
Single pedestrian critical gap, ${ m t_c}$ (s)	al gap, ${ m t_c}$ (s)		3.00		3.00	10.00	3.00
Typical pedestrian number in crossing platoon, $N_{\text{c}}$	tber in crossing pl≀	atoon, N <sub>c</sub>	1.00		1.00	1.27	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		ı		ı	2	ŀ
Group critial gap,			- 3		, (	11.80	
Venicular flow rate, V	<u>ر</u> ن		 LL'0		0.06	0.05	0.00
Pedestrain Delay I OS	ay, c		No Crosewalk	walk	No Crosswalk		No Crosewalk
							NO CLOSSWAIN

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000 Please Note: Enter data in SHADED cells only
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Inputs (ped					Condition Period	AM PEA	AM PEAK HOUR	
	Ped Volumes		Traffic Volumes	Jumes		<b>Geome</b> l Crosswal	<b>Geometric Inputs</b> Crosswalk East Width, W <sub>e</sub> (ft.)	12
	(ped/hour) (ped	(ped/sec.)	(veh/hour)	(veh/sec.)		Crosswal	Crosswalk West Width, W <sub>w</sub> (ft.)	
		0.00	<u>?</u> o	0.00		Crosswal	Grosswalk South Width, W <sub>s</sub> (ft.)	
Beverly Street	0 0.	0.00	313	0.09		Crosswal	Crosswalk East Length, Le (ft.)	l
Beverly Street	0	0.00	268	0.07		Crosswal Crosswal Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis	nalysis							
			Crosswalk East	lk East	Crosswalk West	West	Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ed, S <sub>p</sub> (ft/s)		4.0		4.0		4.0	4.0
Pedestrian start-up time, t (s)			3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)			24		0		0	0
Single pedestrian critical gap, t <sub>c</sub> (s)	; (s)		9.0	0	3.00		3.00	3.00
Typical pedestrian number in crossing platoon, ${ m N_c}$	rossing platoon,	ž	1.0	œ	#DIV/0i	=	1.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	Z		2		•		#DIV/0i	,
Group critial gap,			10.1	7	•		#DIV/0i	1
Vehicular flow rate, V			0.03	<u>ب</u>	0.00		0.09	0.07
Average pedestrian delay, D			1.81	τ-	1		#DIV/0i	•
Pedestrain Delay LOS			A		No Crosswalk	waik	No Crosswalk	No Crosswalk

	Crosswalk	alk Analysis a Please I	rt Unsignali Note: Enter	zed Inters data in Sh	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information Analyst TK Company Howard/k Date 6/21/200 Project # 2005014	nation TK Howard/Stein-Hudson 6/21/2008 2005014	oo			Site Information Intersection Val Condition BU Period AM	ion Valenti Way/South Site Driveway BUILD AM PEAK HOUR	/eway
Synduj	Ped Volumes	lumes	Traffic Volumes	seuno	<b>9</b>	Geometric Inputs	U
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk West Width, W <sub>w</sub> (ft.)	
Valenti Way	0	0.00	649	0.18	—	Crosswalk North Width, W <sub>n</sub> (ft.)	12
Valenti Way	0	0.00	584	0.16	<u>ن</u>	Crosswalk South Width, W <sub>s</sub> (ft.)	_
South Site Driveway	248	0.07	73	0.02	<u>ა</u>	Crosswalk East Length, Le (ft.)	
0	0	0.00	0	0.00	<u></u>	Crosswalk West Length, L <sub>w</sub> (ft.)	
·					ა ბ ———	Crosswalk Nortn Lengtn, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	6 (:)
Crosswalk Time-Space Analysis	ice Analysis						
			Crosswalk East	alk East	<b>Crosswalk West</b>	st Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ting speed, $S_{ m p}$ (fl	(s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	æ		0	_	0	24	0
Single pedestrian critical gap, t <sub>c</sub> (s)	l gap, $\mathbf{t_c}$ (s)		3.00	8	3.00	9.00	3.00
Typical pedestrian number in crossing platoon, $N_{\rm c}$	er in crossing pl	atoon, N <sub>c</sub>	1.0	8	1.00	1.05	0.00
Spatial pedestrian distribution, N <sub>p</sub>	oution, N <sub>p</sub>		ı		i	7	ı
Group critial gap,			1		,	10.17	ŧ
Vehicular flow rate, V			0.18	8	0.16	0.02	0.00
Average pedestrian delay, D	ly, D		1		1	1.12	1
Pedestrain Delay LOS			No Crosswalk	sswalk	No Crosswalk		No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	is at Signalized Intersections Workshee e Note: Enter data in SHADED cells only	ons Worksheet (HCM DED cells only	(2000)	
General Information	Site Inf	Site Information		
Analyst TK Company Howard/Stein-Hudson	Intersection		North Washington Street/Causeway Street	<u>ir</u> eet
Date 6/22/2008	Period	•	KHOUR	1
; #				ı
Inputs	_		Geometric Inputs	
Cycle length, C (sec.)			Crosswalk East Width, We (ft.)	
			Crosswalk West Width, W <sub>w</sub> (ft.)	t.) 12
Effective green Red phase	(bed/hour) (bed/sec.)	c.) (ped/C)	Crosswalk North Width, Wn (ft.)	
Commercial Street 87 63 V <sub>e</sub>		က	Crosswalk South Width, W <sub>s</sub> (ft.)	
Causeway Street 63 V <sub>w</sub>	46 0.01	2	Crosswalk East Length, Le (ft.)	68
<u>6.6</u>		-	Crosswalk West Length, L <sub>w</sub> (ft.)	
N Washington Street 87 V <sub>s</sub>	137 0.04	9	Crosswalk North Length, Ln (ft.)	l
			Crosswalk South Length, L <sub>s</sub> (ft.)	ft.) 90
Crosswalk Time-Space Analysis				
;	Crosswalk East	Crosswalk West	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	13.2	13.2	25.2	25.2
Pedestrian Delay LOS	В	m	ပ	ပ
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0.53375	0.4025	0.38666667	1.655416667
Average pedestrian walking speed, S <sub>o</sub> (ft/s)	4.0	¥.0 ×	4.0	4.0
Total crossing time, t (s)	25.57009375	23.0405625	24.287	26.07246875
Total time-space, TS (ft²-s)	81034.5	73114.5	52920	55890
Total crosswalk occupancy time, T (p-s)	65	44	32	149
Number of conflicting right-turning vehicles, $N_{ m lv}$ (veh)	26	0	41	0
Time-space of right-turning vehicles, TS <sub>v</sub> (ft²-s)	12540	120	0999	0
Effective time-space, TS <sub>E</sub> (ff <sup>2</sup> -s)	68494.5	72994.5	46260	55890
Oirculation area per pedestrian, M (ft²/p)	1053.9	1652.9	1428.5	375.5
Pedestrian Circulation Area LOS	∢	∢	∢	∢

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Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	gnalized Inters Enter data in §	nalysis at Signalized Intersections Worksheel Please Note: Enter data in SHADED cells only	neet (HCM 2 nnly	(000)	
General Information           Analyst         TK           Company         Howard/Stein-Hudson           Date         6/22/2008           Project #         2005014	S International Page	Site Information Intersection Condition Period	North Washington BUILD PM PEAK HOUR	North Washington Street/Thacher Street/Valenti Way BUILD PM PEAK HOUR	treet/Valenti Way
Inputs Cycle length, C (sec.) 00				Geometric Inputs Crosswalk East Width, We (ft.)	
Effective green Red phase Thacher Street V.	ur)	(ped/sec.) (ped/C)		Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>n</sub> (ft.)	n (ft.) 12
0 100	72			Crosswalk East Length, L <sub>e</sub> (ft.)	
N. Washington 73 V <sub>n</sub> N. Washington V <sub>s</sub>	313 0	0.00		Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.)	, (ft.) 52 , (ft.) 70
				Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis					140
Average delay, d <sub>b</sub> (s)	Crosswaik East		Crosswaik west	Crosswaik north 26.6	Crosswaik South 50.0
Pedestrian Delay LOS	A		Α	S	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0		0	3.173472222	0
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0		4.0	4.0	4.0
Total crossing time, t (s)	9.45		16.2	21.41403125	3.2
Total time-space, TS (ft²-s)	29062.		58344	15330	0
Total crosswalk occupancy time, T (p-s)	43 6		32	186	0 0
Time-space of right-turning vehicles, TS <sub>V</sub> (ft <sup>2</sup> -s)	0		. 0	0 0	. 0
Effective time-space, TS <sub>E</sub> (ff <sup>2</sup> -s)	29062.5		58344	15330	0
Circulation area per pedestrian, M (ft²/p)	675.1		1800.7	82.3	,
Pedestrian Circulation Area LOS	∢		⋖	∢	No Crosswalk

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	nalized Interse Enter data in Sł	rsis at Signalized Intersections Worksheers Ise Note: Enter data in SHADED cells only	t (HCM 200	(0)	
General Information	Site	Site Information			
Analyst TK	Inter	_,_	North Washing	North Washington Street/Beverly S	Street
	Period		PM PEAK HOUR	UR	1
Project # 2005014		I			
Inputs				Geometric Inputs	
Cycle length, C (sec.)			<u>၁</u>	Crosswalk East Width, W <sub>e</sub> (ft.)	
			<u>5</u>	Crosswalk West Width, W <sub>w</sub> (ft.)	
Effective green Red phase	(bed/hour) (pec	(bed/sec.) (bed/C)	- -	Crosswalk North Width, Wn (ft.)	n (ft.) 12
	0		<del>ပ</del> ်	Crosswalk South Width, W <sub>s</sub> (ft.)	_
Beverly Street 4.9 51 V <sub>w</sub>			Š	Crosswalk East Length, Le (ft.)	
North Washington Street		0.05 5	- င်	Crosswalk West Length, L <sub>w</sub> (ft.)	
North Washington Street © V <sub>s</sub>		0.01	<u>ပ</u> ီ	Crosswalk North Length, L <sub>n</sub> (ft.)	n (ft.) 57
			<u>ნ</u> ——	Crosswalk South Length, L <sub>s</sub> (ft.)	s (ft.) 0
Crosswalk Time-Space Analysis			_		
	Crosswalk East	ast Crosswalk West	lk West	Crosswalk North	Crosswalk South
Average delay, d <sub>p</sub> (s)	20.0	13.0	0	11.0	50.0
Pedestrian Delay LOS	No Crosswalk	alk B		8	No Crosswalk
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)	0	0.545416667	16667	1.109722222	0.25
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4.0	4.0	_	4.0	4.0
Total crossing time, t (s)	3.2	12.82271875	71875	17.6996875	3.2675
Total time-space, TS (ft²-s)	0	20178	82	31378.5	0
Total crosswalk occupancy time, T (p-s)	0	27		84	2
Number of conflicting right-turning vehicles, N <sub>v</sub> (veh)	0	0		0	0
Time-space of right-turning vehicles, TS <sub>v</sub> (ft <sup>2</sup> -s)	0	0		0	0
Effective time-space, TS <sub>E</sub> (ft²-s)	0	20178	82	31378.5	0
Circulation area per pedestrian, M (ft²/p)	1	735	.7	09<	•
Pedestrian Circulation Area LOS	No Crosswalk			∢	No Crosswalk
			_		

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	is at Signe e Note: E	nalysis at Signalized Intersections Workshee' Please Note: Enter data in SHADED cells only	rsections \ SHADED	Vorksheet (HCN cells only	2000)	
General Information Analyst TK Company Howard/Stein-Hudson Date 6/22/2008 Project # 2005014		<b>7</b> = <b>0</b> E	Site Information Intersection Condition Period		N. Washington & Cooper & Cross BUILD PM PEAK HOUR	
Inputs Cycle length, C (sec.)					Geometric Inputs Crosswalk East Width, W <sub>e</sub> (ft.) Crosswalk West Width, W <sub>w</sub> (ft.)	6 (ft.) 12 / <sub>w</sub> (ft.) 12
Cooper Sumner Tunnel 33	> >	(L)	(ped/sec.) 0.04 0.07	(ped/C) 4 7	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.) Crosswalk East Length	
<u>3</u>		176	0.00	. O vo	Crosswalk West Length, L <sub>w</sub> (ft.) Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	
Crosswalk Time-Space Analysis Average delay, d <sub>o</sub> (s)		Crosswalk East	ilk East	Crosswalk West 5.4	Crosswalk North 50.0	Crosswalk South
Pedestrian Delay LOS		A		A	No Crosswalk	Δ.
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s)		0.246944444 4.0	4444	1.145833333 4.0	0 4.0	1.29555556 4.0
Total crossing time, t (s)  Total time-space, TS (ft²-s)  Total crosswalk occupancy time, T (p-s)		9.7555625 25818 34	5625 18 1	9.9578125 19890 69	3.2	9.5498 10560 47
Number of conflicting right-turning vehicles, N <sub>v</sub> (veh) Time-space of right-turning vehicles, TS <sub>v</sub> (ft²-s)		0 0 6	. 7	0 0 6	000	0 0 7
Circulation area per pedestrian, M (ft²/p)  Pedestrian Circulation Area LOS		750.2 750.2 <b>A</b>	2 2	287.6 <b>A</b>	#DIV/0! No Crosswalk	226.2 <b>A</b>

Diameter   Transmitter   Tr	Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	gnalized Inte Enter data i	ersections W	orksheet (HCN ells only	12000)	
Characteric precise   Characteric precise	eral Info		Site Informati Intersection Condition Period		Irdon Street/Surface Roa	<u>d/Off-</u> ramp
Page   Care	Tuputs				Geometric Inputs	
Effective green   Red phase   Conservation   Cons	Cycle length, C (sec.)				Crosswalk East Width, W	
Time-Space Analysis         46         V <sub>e</sub> 0         000         0         Crosswalk South Width, W <sub>e</sub> (and the part of the				(bed/C)	Crosswalk North Width,	_
March   Marc		0		0	Crosswalk South Width,	
Crosswalk West Length, L <sub>w</sub> (Crosswalk Space Analysis   Space Analysis   Space Analysis   Space Analysis   Crosswalk Lag (Crosswalk South Length, L <sub>w</sub> (Crosswalk Bast (Crosswalk North Length, L <sub>w</sub> (Crosswalk North Batrian walking speed, S <sub>p</sub> (ft/s)   No Crosswalk   North (Space, TS (ft-s) (Crosswalk North (S	46		0.08	ω	Crosswalk East Length, I	
34    V <sub>s</sub>			0.01		Crosswalk West Length,	j
Crosswalk South Length, L <sub>s</sub>   Crosswalk South Length, L <sub>s</sub>     Crosswalk East   Crosswalk West   10.6   E.8     No Crosswalk   B	<u>6</u> 6 34		0.00	0	Crosswalk North Length,	ļ
Crosswalk East   Crosswalk West   Crosswalk North   10.6   5.8     10.6   No Crosswalk   B					Crosswalk South Length	
Crosswalk East         Crosswalk West         Crosswalk North         A.B         A.B <td>Crosswalk Time-Space Analysis</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Crosswalk Time-Space Analysis					
10.6   10.6   5.8   No Crosswalk   B		Crossw	alk East	<b>Crosswalk West</b>	Crosswalk North	Crosswalk South
No Crosswalk   B A   A	Average delay, d <sub>p</sub> (s)	— <del>~</del>	9.6	10.6	5.8	5.8
alk, Nped (p)     0     1.7633333333     0.122777778       US)     4.0     4.0     4.0       US)     3.2     33.34675     15.227625       0     0     256     11       es, N <sub>V</sub> (veh)     0     0     0       v, (ft²-s)     0     0     0       v, (ft²-s)     0     55870.5     34560       No Crosswalk     A     A	Pedestrian Delay LOS	No Cro	sswalk	<b>B</b>	<b>A</b>	No Crosswalk
US)     4.0     4.0     4.0       US     3.2     33.34675     15.227625       0     0     256     11       es, N <sub>V</sub> (veh)     0     0     0       v, (ft²-s)     0     0     0       v (ft²-s)     0     55870.5     34560       No Crosswalk     A     A	Number of peds arriving during Don't Walk, N <sub>ped</sub> (p)		0	1.763333333	0.122777778	0
a.2     33.34675     15.227625       0     55870.5     34560       0     256     11       0     0     0       v(ft^-s)     0     0       0     55870.5     342.5       No Crosswalk     A     A	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	4	0.	4.0	4.0	4.0
es, N <sub>V</sub> (veh)  o  o  o  o  o  o  o  o  o  o  o  o  o	Total crossing time, t (s)	<u>ო</u>	.2	33.34675	15.227625	3.2
es, $N_{\rm tv}$ (veh) 0 256 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total time-space, TS (ft²-s)		0	55870.5	34560	0
es, N <sub>V</sub> (veh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total crosswalk occupancy time, T (p-s)		0	256	7	0
0 55870.5 34560 0 55870.5 34560 No Crosswalk A A	Number of conflicting right-turning vehicles, N <sub>IV</sub> (veh)		0 (	0 0	0 0	0 (
218.5 218.5 3142.5 No Crosswalk A A	Inter-space of right-turning venicles, 10th (it -s)   Effective time-space TS- (ff-s)			55870.5	34560	<b>-</b>
No Crosswalk A A	Circulation area per pedestrian, M ( $\mathbb{H}^2/p$ )		<b>)</b>	218.5	3142.5	>
	Pedestrian Circulation Area LOS	No Cro	sswalk	∢	<b>V</b>	No Crosswalk

	=	;			
Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only  General Information Site Information	gnalized inte Enter data i	ersections Work in SHADED cells Site Information	Vorksneet (HCM cells only tion	2000)	
Analyst         TK           Company         Howard/Stein-Hudson           Date         6/22/2008           Project #         2005014		Intersection Condition Period	- -	Causeway Street/Haverhill Street/Legends Way BUILD PM PEAK HOUR	egends Way 
Inputs Cycle length, C (sec.) 00				Geometric Inputs Crosswalk East Width, We (ft.)	(ft.) 10
Effective green Red phase Causeway Street 47 53 V <sub>c</sub>	(ped/hour) 301	(ped/sec.) 0.08	(ped/C) 8	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	
53		0.03	e :	Crosswalk East Length, Le (ft.)	
Legends Way 25 V <sub>n</sub> Haverhill Street 25 V <sub>s</sub>	405 526	0.11 0.15	15	Crosswalk West Length, $L_w$ (ft.) Crosswalk North Length, $L_n$ (ft.)	ļ
				Crosswalk South Length, L <sub>s</sub> (ft.)	-s (ft.) 25
Crosswalk Time-Space Analysis			Control Most	Coccount Month	
Average delay, d <sub>p</sub> (s)	75	Jerosswain East 14.0	Crosswaik west 14.0	3.1	Grosswark south 3.1
					<b>C</b>
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S. (#/s)	2.2156	2.215694444 4 0	0.809722222 4.0	1.40625	1.826388889 4 N
Total crossing time, t (s)	21.79	21.7982375	23.418625	12.3296875	9.943125
Total time-space, TS (ft²-s)	27.	27360	29600	24718.75	17968.75
Number of conflicting right-turning vehicles, N <sub>V</sub> (veh)		79I 0	7 0	8 0	145
Time-space of right-turning vehicles, TS <sub>tv</sub> (ft²-s)	33.333	33.3333333	0	133.333333	244.444444
Effective time-space, TS <sub>E</sub> (ft <sup>2</sup> -s)	27326	27326.66667	29600	24585.41667	17724.30556
Circulation area per pedestrian, M (ft²/p)		149.9	413.7	177.2	122.0
Pedestrian Circulation Area LOS	_	<b>~</b>	⋖	∢	∢

Crosswalk Analysis at Signalized Intersections Worksheet (HCM 2000)  Please Note: Enter data in SHADED cells only General Information	gnalized Inte Enter data i	nalysis at Signalized Intersections Worksheel Please Note: Enter data in SHADED cells only Site Information	orksheet (HCIV ills only	1 2000)	
Analyst TK Company Howard/Stein-Hudson Date 6/22/2008 Project # 2005014		Intersection Condition Period		Beverly Street/Valenti Way BUILD PM PEAK HOUR	
Inputs Cycle length, C (sec.) (00				Geometric Inputs  Crosswalk East Width, We (ft.)	
Effective green Red phase  Valenti Way  Valenti May	(ped/hour) 112	<u> </u>	(ped/C)	Crosswalk North Width, W <sub>n</sub> (ft.) Crosswalk South Width, W <sub>s</sub> (ft.)	
et 84 et		0.03 0.02	2 2	Crosswark East Length, L <sub>e</sub> (tt.) Crosswark West Length, L <sub>w</sub> (ft.) Crosswark North Length, L <sub>n</sub> (ft.) Crosswark South Length, L <sub>s</sub> (ft.)	t) 30 (t) 35 (t) 40
Crosswalk Time-Space Analysis Average delay, d <sub>p</sub> (s) Pedestrian Delay LOS	Crosswalk East 11.5 B		Crosswalk West 11.5 B	Crosswalk North 6.5	Crosswalk South 35.3 D
Number of peds arriving during Don't Walk, N <sub>ped</sub> (p) Average pedestrian walking speed, S <sub>p</sub> (ft/s) Total crossing time, t (s) Total time-space, TS (ft <sup>2</sup> -s) Total crosswalk occupancy time, T (p-s) Number of conflicting right-turning vehicles, N <sub>W</sub> (veh) Time-space of right-turning vehicles, TS <sub>W</sub> (ft <sup>2</sup> -s) Effective time-space, TS <sub>E</sub> (ff <sup>2</sup> -s) Circulation area per pedestrian, M (ft²/p)	0.746666667 4.0 12.88327273 19750.5 40 0 0 19750.5 492.8	0.746666667 4.0 4.0 12.88327273 19750.5 0 0 0 19750.5	1.21333333 4.0 10.973 17370 55 0 0 17370 313.1	2.905 4.0 12.603625 25042.5 203 4 1720 23322.5 114.7	0.875 4.0 13.396875 5280 28 0 0 5280

General Information           Analyst         TK           Company         Howard/SI           Date         6/22/2008           Project #         2005014	ation TK Howard/Stein-Hudson 6/22/2008 2005014	00			Site Information Intersection No Condition BU Period PN	tion North Wa BUILD PM PEA	ion North Washington Street/Endicott Street BUILD PM PEAK HOUR	dicott Street
Inputs	Ped Volum	olumes	Traffic Volumes	olumes		Geomet Crosswall	<b>Geometric Inputs</b> Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswall	Crosswalk West Width, Ww (ft.)	0
Endicott Street	4	0.00	14	0.00		Crosswall	Crosswalk North Width, W <sub>n</sub> (ft.)	0
0	0	00.00	0	0.00		Crosswall	Crosswalk South Width, W <sub>s</sub> (ft.)	
North Washington Stre	0	0.00	1882	0.52		Crosswall	Crosswalk East Length, Le (ft.)	29
North Washington Stre	0	0.00	1878	0.52		Crosswall	Crosswalk West Length, L <sub>w</sub> (ft.)	0
						Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	-
Crosswalk Time-Space Analysis	e Analysis							
			Crosswalk East	ılk East	<b>Crosswalk West</b>	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	g speed, $S_p$ (f	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	(s)		); (3)	0	3.0		3.0	3.0
Length of crosswalk, L (ft)			56	•	0		06	06
Single pedestrian critical gap, t <sub>c</sub> (s)	ap, t <sub>c</sub> (s)		10.25	25	3.00	-	25.50	25.50
Typical pedestrian number in crossing platoon, N <sub>c</sub>	in crossing pl	latoon, N <sub>c</sub>	1.0	0	0.00		0.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ion, N <sub>p</sub>		- 2		•		ı	•
Group critial gap,			11.65	95	•		•	
Vehicular flow rate, V			00:00	0	0.00		0.00	0.52
Average pedestrian delay, D	D		0.2	7:	1		ı	•
Pedestrain Delay LOS			∢		No Crosswalk	waik	No Crosswalk	No Crosswalk

	Crosswalk		alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	zed Inters data in SH	ections Wor IADED cells	ksheet only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information					Site Information	loj.		15
/st pany _	Howard/Stein-Hudson	uc Uc			Intersection	BUILD	North Washington Street/Medford Street BUILD	drord Street
Project # 2005014	14			_	Period	PM PEA	ZM PEAK HOOK	
<u>Inputs</u>						Geomet	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswall	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswall	Crosswalk West Width, W <sub>w</sub> (ft.)	12
0	0	0.00	0	0.00		Crosswall	Crosswalk North Width, Wn (ft.)	0
Medford Street	78	0.02	21	0.01		Crosswall	Crosswalk South Width, Ws (ft.)	0
N Washington Street	S	0.00	1878	0.52		Crosswall	Crosswalk East Length, Le (ft.)	0
N Washington Street	4	0.00	1861	0.52		Crosswall	Crosswalk West Length, L <sub>w</sub> (ft.)	46
						Crosswall	Crosswalk North Length, L <sub>n</sub> (ft.)	80
						Crosswall	Crosswalk South Length, L <sub>s</sub> (ft.)	80
Crosswalk Time-Space Analysis	e Analysis				_			
			Crosswalk East	ılk East	<b>Crosswalk West</b>	West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ng speed, $S_p$ (ft	(s)	4.0		4.0		4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0		3.0		3.0	3.0
Length of crosswalk, L (ft)	_		0		46		80	80
Single pedestrian critical gap, t <sub>c</sub> (s)	gap, t <sub>c</sub> (s)		3.00	0	14.50		23.00	23.00
Typical pedestrian number in crossing platoon, N <sub>c</sub>	er in crossing pla	atoon, N <sub>c</sub>	0.0	0	1.01		432.42	313.60
Spatial pedestrian distribution, N <sub>p</sub>	ution, N <sub>p</sub>		1		7		1	ı
Group critial gap,			'		15.67		1	ı
Vehicular flow rate, V			00.0	0	0.01		0.52	0.52
Average pedestrian delay, D	ς. α		•		0.74			1
Pedestrain Delay LOS			No Crosswalk	swalk	∢		No Crosswalk	No Crosswalk

alk Analysis at Unsignalized Intersections Worksheet (HCM 2000)	Please Note: Enter data in SHADED cells only
<b>Crosswalk Analys</b>	Pleas

Il Informa				Site Information	ion	
Analyst TK	TK Howard/Stein-Hudson			Intersection	Causeway Street/Canal Street	Street
, -	6/22/2008	1		Period	PM PEAK HOUR	
Project # 2005014	5014					
Imputs			-		Geometric Inputs	
	Ped Volumes	Traffic	Traffic Volumes		Crosswalk East Width, We (ft.)	odal devolusional formal formal formal factor of main feet of the factor of the feet of th
	(ped/hour) (ped/sec.)	.) (veh/hour)	(veh/sec.)		Crosswalk West Width, W <sub>w</sub> (ft.)	_
Causeway Street	1045 0.29	1366	0.38		Crosswalk North Width, W <sub>n</sub> (ft.)	l
Causeway Street	425 0.12	1278	0.36		Crosswalk South Width, W <sub>s</sub> (ft.)	l _
0	0 0.00	0	0.00		Crosswalk East Length, Le (ft.)	l
Canal Street	963 0.27	256	0.07		Crosswalk West Length, L <sub>w</sub> (ft.)	l _
					Crosswalk North Length, L <sub>n</sub> (ft.)	(ft.) 0
					Crosswalk South Length, L <sub>s</sub> (ft.)	1 1
Crosswalk Time-Space Analysis	ace Analysis					
		Crossv	Crosswalk East	<b>Crosswalk West</b>	West Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	lking speed, S <sub>p</sub> (ft/s)		4.0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		3.0	3.0	3.0	3.0
Length of crosswalk, L (ft)	(ft)		84	77		22
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, t <sub>c</sub> (s)	5	24.00	22.25		8.50
Typical pedestrian num	Typical pedestrian number in crossing platoon, $\ensuremath{\text{N}_{\text{c}}}$	360	3907.46	672.35	0.00	1.47
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>P</sub>		2606	449		2
Group critial gap,		52;	5233.67	918.42		10.50
Vehicular flow rate, V			.38	0.36	0.00	0.07
Average pedestrian delay, D	ay, D		>45	>45	·	5.11
Pedestrain Delay LOS			L	<b>L.</b>	No Crosswalk	ω

k Analysis at Unsignalized Intersections Worksheet (HCM 2000)	Please Note: Enter data in SHADED cells only	
Crosswalk Analysis at Unsigna	Please Note: Ente	

Company How								
•	Howard/Stein-Hudson 6/22/2008	oo			Condition Period	BUILD PM PEA	BUILD PM PEAK HOUR	
* *	2005014							
Inputs						Geomet	Geometric Inputs	
	Ped Volum	olumes	Traffic Volumes	olumes		Crosswal	Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswal	Crosswalk West Width, Ww (ft.)	0
Causeway Street	21	0.01	696	0.27		Crosswal	Crosswalk North Width, Wn (ft.)	_
Causeway Street	32	0.01	955	0.27		Crosswal	Crosswalk South Width, W <sub>s</sub> (ft.)	10
0	0	00.00	0	0.00		Crosswal	Crosswalk East Length, Le (ft.)	28
Medford Street	268	0.07	18	0.01		Crosswal	Crosswalk West Length, L <sub>w</sub> (ft.)	
						Crosswal	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	- 0
Crosswalk Time-Space Analysis	ace Analysis				_			
			Crosswalk East	alk East	<b>Crosswalk West</b>	r West	Crosswalk North	<b>Crosswalk South</b>
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	lking speed, S <sub>p</sub> (fi	t/s)	4.0	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	e, t (s)		<u>က်</u>	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	(ft)		58	8	58		0	25
Single pedestrian critical gap, t <sub>c</sub> (s)	al gap, t <sub>c</sub> (s)		17.	20	17.50	_	3.00	9.25
Typical pedestrian number in crossing platoon, N <sub>c</sub>	ber in crossing pl	atoon, N <sub>c</sub>	3.24	42	4.19		0.00	1.01
Spatial pedestrian distribution, N <sub>p</sub>	ibution, N <sub>p</sub>		<u>'</u>	l	1		ı	2
Group critial gap,			•	4.00	1		ı	10.65
Vehicular flow rate, V			0.27	75	0.27		0.00	0.01
Average pedestrian delay, D	ay, D		•		1		,	0.29
Pedestrain Delay LOS	40		No Crosswaik	sswaik	No Crosswalk	walk	No Crosswalk	∢

Crosswalk Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
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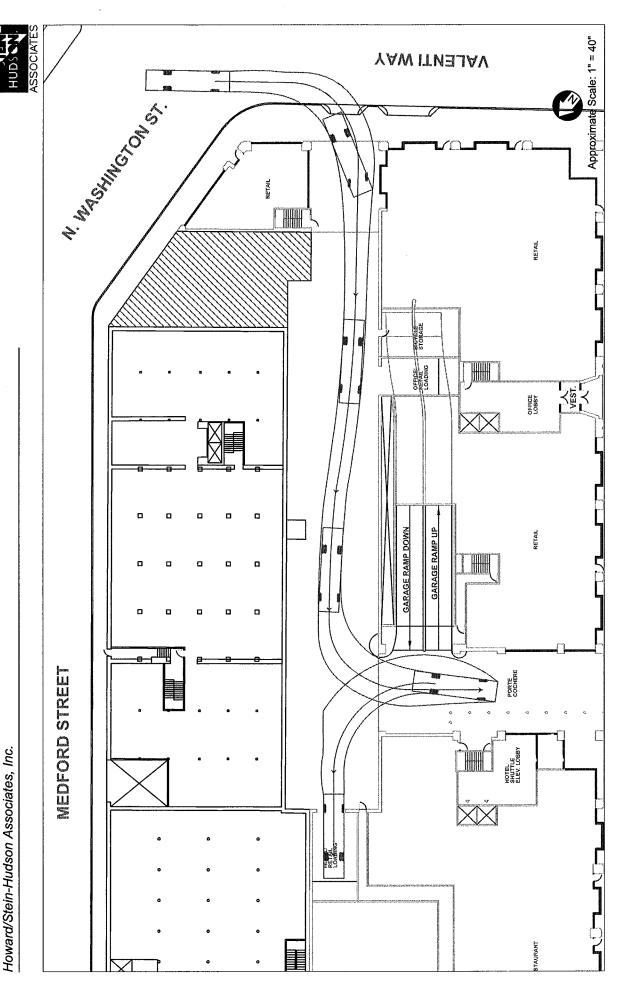
General Information	mation				Site Information	tion		
Analyst	TK		Control (or pills, verbrane) for unmanife. Other control (or pills) in part of the control (or pills) in par		Intersection	Canal St	Canal Street/Valenti Way	AND THE PROPERTY OF THE PROPER
Company	Howard/Stein-Hudson	on			Condition	BUILD		
Date	6/22/2008			_	Period	PM PEAK HOUR	K HOUR	
Project #	2005014							
Inputs						Geometi	Geometric Inputs	
	Ped Volum	olumes	Traffic Volumes	olumes		Crosswalk	Crosswalk East Width, W <sub>e</sub> (ft.)	10
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk	Crosswalk West Width, Ww (ft.)	10
Valenti Way	152	0.04	230	90.0		Crosswalk	Crosswalk North Width, Wn (ft.)	10
Valenti Way	144	0.04	193	0.05		Crosswalk	Crosswalk South Width, Ws (ft.)	10
Canal Street	466	0.13	219	90.0		Crosswalk	Crosswalk East Length, Le (ft.)	32
Canal Street	137	0.04	42	0.01		Crosswalk	Crosswalk West Length, L <sub>w</sub> (ft.)	26
						Crosswalk	Crosswalk North Length, L <sub>n</sub> (ft.) Crosswalk South Length, L <sub>s</sub> (ft.)	28
Grosswalk Ti	Crosswalk Time-Space Analysis				_			
			Crosswalk East	ilk East	<b>Crosswalk West</b>	West	<b>Crosswalk North</b>	Crosswalk South
Average pedest	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	t/s)	4.	0	4.0		4.0	4.0
Pedestrian start-up time, t (s)	t-up time, t (s)		); Э	0	3.0		3.0	3.0
Length of crosswalk, L (ft)	walk, L (ft)		33	01	26	***************************************	28	23
Single pedestria	Single pedestrian critical gap, t <sub>c</sub> (s)		11.0	00	9.50		10.00	8.75
Typical pedestri	Typical pedestrian number in crossing platoon, ${ m N_c}$	latoon, N <sub>c</sub>	1.18	∞	1.10		1.34	1.02
Spatial pedestri	Spatial pedestrian distribution, N <sub>p</sub>		2		7		2	2
Group critial gap,	ά		12.60	90	10.90		11.80	10.15
Vehicular flow rate, V	ate, V		90.0	90	0.05		90.0	0.01
Average pedestrian delay, D	trian delay, D		6.7	စ	3.91		5.46	0.63
Pedestrain Delay LOS	lay LOS		Δ		∢		ω	<b>V</b>

Analyst         TK           Company         Howard/Stein-Hudson           Date         6/22/2008           Project #         2005014           Inputs         Ped Volumes         Traffic \	——————————————————————————————————————	Έ.	Causeway Street/Beverly Street	
Howard/Stein-Hudson 6/22/2008 2005014 Ped Volumes (ped/hour) (ped/sec.) (ve 39 0.01 0 0.00 363 0.10  an walking speed, S <sub>p</sub> (ft/s) pt time, t (s) an walking speed, S <sub>p</sub> (ft/s) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s)	I	•		
6/22/2008 2005014  Ped Volumes (ped/hour) (ped/sec.) (ve 39 0.01 0 0.00 36 0.01 0 0.00 363 0.10  an walking speed, S <sub>p</sub> (ft/s) p time, t (s) alk, L (ft) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s)	——II 3	Condition	BUILD	
2005014  Ped Volumes (ped/hour) (ped/sec.) (ve 39 0.01 26 0.01 0 0.00 363 0.10 an walking speed, S <sub>p</sub> (ft/s) pt time, t (s) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s)		Period PM PE	AK HOUR	
Ped Volumes  (ped/hour) (ped/sec.) (ve 39 0.01 26 0.01 0 0.00 363 0.10  an walking speed, S <sub>p</sub> (ft/s) pt time, t (s) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s)				
Ped Volumes (ped/hour) (ped/sec.) (ve 39 0.01 26 0.01 0 0.00 363 0.10  an walking speed, S <sub>p</sub> (ft/s) pt time, t (s) ark, L (ft) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s)	5	Беот	Geometric Inputs	
(ped/hour) (ped/sec.) (ve 39 0.01 26 0.01 0.00 363 0.10 363 0.10 an walking speed, S <sub>p</sub> (ft/s) pt time, t (s) critical gap, t <sub>c</sub> (s) critical gap, t <sub>c</sub> (s) n number in crossing platoon, N <sub>c</sub>		Crossw	Crosswalk East Width, W <sub>e</sub> (ft.)	0
39 0.01 26 0.01 0 0.00 363 0.10 an walking speed, S <sub>p</sub> (ft/s) p time, t (s) ark, L (ft) critical gap, t <sub>c</sub> (s) n number in crossing platoon, N <sub>c</sub>	(veh/hour) (veh/sec.)	Crossw	·  -	_  _
26 0.01 0 0.00 363 0.10  e-Space Analysis an walking speed, S <sub>p</sub> (ft/s) p time, t (s) alk, L (ft) critical gap, t <sub>c</sub> (s) n number in crossing platoon, N <sub>c</sub>	1018 0.28	Crossw	Crosswalk North Width, W <sub>n</sub> (ft.)	_
0 0.00 363 0.10  me-Space Analysis rian walking speed, S <sub>p</sub> (ft/s) -up time, t (s) walk, L (ft) in critical gap, t <sub>c</sub> (s) an number in crossing platoon, N <sub>c</sub>		Crossw	I	<u> </u>
363 0.10  me-Space Analysis rian walking speed, S <sub>p</sub> (ft/s) -up time, t (s) walk, L (ft) in critical gap, t <sub>c</sub> (s) an number in crossing platoon, N <sub>c</sub>	00.00	Crossw	i	
S <sub>p</sub> (ft/s)	280 0.08	Crossw	· ·	- 89
S <sub>p</sub> (ft/s)		Crossw	Crosswalk North Length, L <sub>n</sub> (ft.)	
S <sub>p</sub> (ft/s)		Crossw	Crosswalk South Length, L <sub>s</sub> (ft.)	30
S <sub>p</sub> (ft/s)				
S <sub>p</sub> (ft/s)	Crosswalk East	<b>Crosswalk West</b>	Crosswalk North Crosswa	Crosswalk South
ing platoon, N <sub>c</sub>	4.0	4.0	4.0	4.0
ing platoon, N <sub>c</sub>	3.0	3.0		0
ing platoon, N <sub>c</sub>		89		30
	20.00	20.00	3.00	10.50
	11.32	23.88		43
Spatial pedestrian distribution, N <sub>p</sub>	1	ı	ı	2
Group critial gap,	1	•	- 12	50
Vehicular flow rate, V 0.2	0.28	0.35	0.00	0.08
Average pedestrian delay, D	1		- 8	S3
Pedestrain Delay LOS No Cro	No Crosswalk	No Crosswalk	No Crosswalk	<b>a</b>

	Crosswalk	alk Analysis a Please I	rt Unsignali Note: Enter	zed Inters data in S	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information					Site Information	u	
Analyst TK				en renorme menten (net) angel trayer or general en en en	Intersection V	Valenti Way/Haverhill Street	en demonstrates des elementes de la companya de la companya de la companya de la companya de la companya de la
Company Howa	Howard/Stein-Hudson	uc			Condition B	BUILD PM PEAK HOLIR	
# #	014				,		
Inputs					9	Geometric Inputs	
	Ped Volumes	lumes	Traffic Volumes	olumes		Crosswalk East Width, W <sub>e</sub> (ft.)	0
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)		Crosswalk West Width, W <sub>w</sub> (ft.)	l _
Valenti Way	0	0.00	283	0.08		Crosswalk North Width, Wn (ft.)	l _
Valenti Way	0	0.00	115	0.03		Crosswalk South Width, W <sub>s</sub> (ft.)	0
Haverhill Street	479	0.13	168	0.05		Crosswalk East Length, Le (ft.)	ļ
0	0	0.00	0	0.00		Crosswalk West Length, L <sub>w</sub> (ft.)	0
						Crosswalk North Length, L <sub>n</sub> (ft.)	28
						Crosswalk South Length, L <sub>s</sub> (ft.)	0
Crosswalk Time-Space Analysis	ace Analysis						
			Crosswalk East	alk East	Crosswalk West	est Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	king speed, $S_p$ (ft	(s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	s, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	(£)		0		0	28	0
Single pedestrian critical gap, t <sub>c</sub> (s)	il gap, $\mathbf{t_c}$ (s)		3.00	0	3.00	10.00	3.00
Typical pedestrian number in crossing platoon, No	ber in crossing pla	atoon, N <sub>c</sub>	1.00	0	1.00	1.25	0.00
Spatial pedestrian distribution, N <sub>p</sub>	bution, N <sub>p</sub>		•		•	2	ı
Group critial gap,			1		1	11.60	ı
Vehicular flow rate, V			0.08	80	0.03	0.05	0.00
Average pedestrian delay, D	ау, D		1			3.79	1
Pedestrain Delay LOS			No Crosswalk	sswalk	No Crosswalk	¥	No Crosswalk

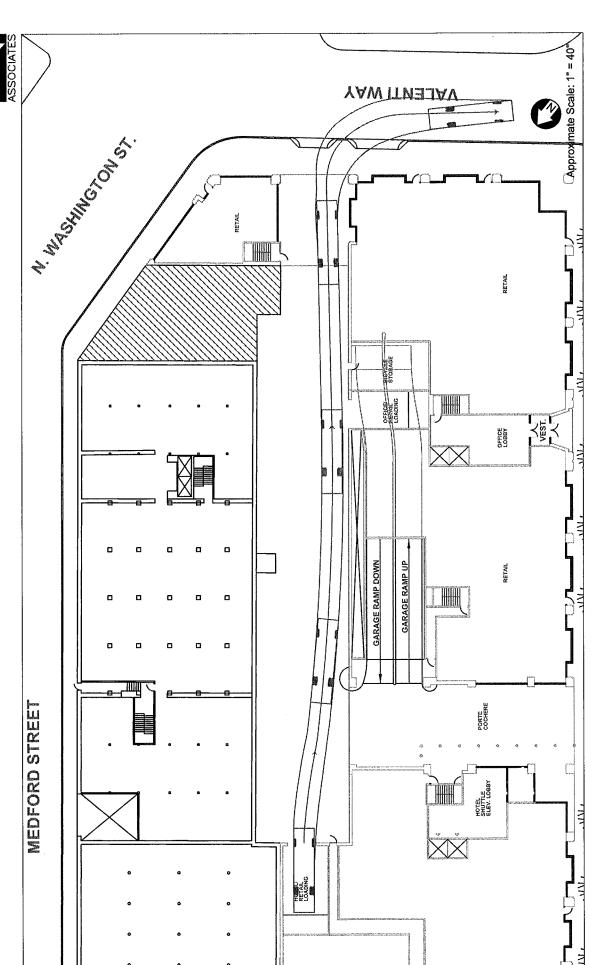
	Crosswalk	alk Analysis a Please I	at Unsignali: Note: Enter	zed Inters data in SI	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information	lion				Site Information		
Analyst	K	on de la franchische de commence de la commence de la commence de la commence de la commence de la commence de	de la company de	e de la companya de l	Intersection Bev	Beverly Street/West Site Driveway	iveway
Company H	Howard/Stein-Hudson	on			Condition BUILD	BUILD DM DEAK HOLIB	
# #	2005014				•		
Inputs					95	Geometric Inputs	
	Ped Vo	Ped Volumes	Traffic Volumes	olumes		Crosswalk East Width, We (ft.)	12
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	S C	Crosswalk West Width, W <sub>w</sub> (ft.)	
West Site Driveway	316	0.09	163	0.05	e S	Crosswalk North Width, Wn (ft.)	0
0	0	0.00	0	0.00	S C	Crosswalk South Width, W <sub>s</sub> (ft.)	 
Beverly Street	0	0.00	280	0.08	e C	Crosswalk East Length, Le (ft.)	24
Beverly Street	0	0.00	357	0.10	S	Crosswalk West Length, L <sub>w</sub> (ft.)	0
					S	Crosswalk North Length, L <sub>n</sub> (ft.)	
					Ö —	Crosswalk South Length, L <sub>s</sub> (ft.)	0
Crosswalk Time-	Grosswalk Time-Space Analysis				_		
	And the second s	والمعتقدة والمتحارف واستقادها والمتحارث والمتحارف والمتح	Crosswalk East	ılk East	Crosswalk West	t Crosswalk North	Crosswalk South
Average pedestrian	Average pedestrian walking speed, S <sub>p</sub> (ft/s)	t/s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	time, t (s)		3.0	0	3.0	3.0	3.0
Length of crosswalk, L (ft)	, L (ft)			<b>+</b>	0	0	0
Single pedestrian critical gap, t <sub>c</sub> (s)	itical gap, $t_c$ (s)		0.6	8	3.00	3.00	3.00
Typical pedestrian r	Lypical pedestrian number in crossing platoon, $N_{\rm c}$	latoon, N <sub>c</sub>	1.15	5	#DIV/0i	1.00	0.00
Spatial pedestrian distribution, N <sub>p</sub>	listribution, N <sub>p</sub>		- 2		1	ı	ı
Group critial gap,			10.33	33		1	1
Vehicular flow rate, V	>		0.05	55	0.00	0.08	0.10
Average pedestrian delay, D	delay, D		2.8	7	1	J	•
Pedestrain Delay LOS	so.		⋖		No Crosswalk	No Crosswalk	No Crosswalk

	Crosswalk	ilk Analysis a Please	at Unsignaliz Note: Enter	zed Interse data in SH	alysis at Unsignalized Intersections Workshe Please Note: Enter data in SHADED cells only	Analysis at Unsignalized Intersections Worksheet (HCM 2000) Please Note: Enter data in SHADED cells only	
General Information				S	Site Information	u	
Analyst TK	ol istlankinasi karattalan karattalan karattalan karattalan ini karattalan ini karattalan karattalan karattala	Nematik Sepandia Sepandia Mentapo (COS), Zigenovi silva (New Adianasia) super-	and burst committee and in the contract day for any or and contract day.		Intersection \	Valenti Way/South Site Driveway	riveway
Company Howai	Howard/Stein-Hudson	nc		0	Condition	BUILD	
•	8008			<u>.</u>	Period	M PEAK HOUR	
Project # 2005014	114						
Inputs			-		)	Geometric Inputs	
radio de la companya de la companya de la companya de la companya de la companya de la companya de la companya	Ped Volum	lumes	Traffic Volumes	olumes		Crosswalk East Width, W <sub>e</sub> (ft.)	
	(bed/hour)	(bed/sec.)	(veh/hour)	(veh/sec.)	_	Crosswalk West Width, W <sub>w</sub> (ft.)	l _
Valenti Way	0	0.00	514	0.14		Crosswalk North Width, Wn (ft.)	ft.) 12
Valenti Way	0	0.00	504	0.14		Crosswalk South Width, W <sub>s</sub> (ft.)	ļ
South Site Driveway	242	0.07	54	0.02		Crosswalk East Length, Le (ft.)	l
0	0	0.00	0	0.00		Crosswalk West Length, L <sub>w</sub> (ft.)	(ft.) 0
						Crosswalk North Length, L <sub>n</sub> (ft.)	(ft.) 24
						Crosswalk South Length, L <sub>s</sub> (ft.)	(ft.) 0
Crosswalk Time-Space Analysis	ce Analysis						
		A strategic of the state of the	Crosswalk East	ik East	<b>Crosswalk West</b>	est Crosswalk North	Crosswalk South
Average pedestrian walking speed, S <sub>p</sub> (ft/s)	ing speed, $S_{ m p}$ (ft	/s)	4.0	0	4.0	4.0	4.0
Pedestrian start-up time, t (s)	t (s)		3.0	_	3.0	3.0	3.0
Length of crosswalk, L (ft)	·		0		0	24	0
Single pedestrian critical gap, t <sub>c</sub> (s)	gap, $\mathbf{t}_{c}$ (s)		3.00	0	3.00	9.00	3.00
$\ Typical$ pedestrian number in crossing platoon, $N_c$	er in crossing pla	atoon, N <sub>c</sub>	1.0	0	1.00	1.04	0.00
Spatial pedestrian distribution, N <sub>p</sub>	ution, N <sub>p</sub>		1		•	2	,
Group critial gap,			1		ı	10.17	,
Vehicular flow rate, V			0.14	4	0.14	0.02	0.00
Average pedestrian delay, D	۷, ۵		1		•	0.82	•
Pedestrain Delay LOS			No Crosswalk	swalk	No Crosswalk	Ik A	No Crosswalk



The Merano

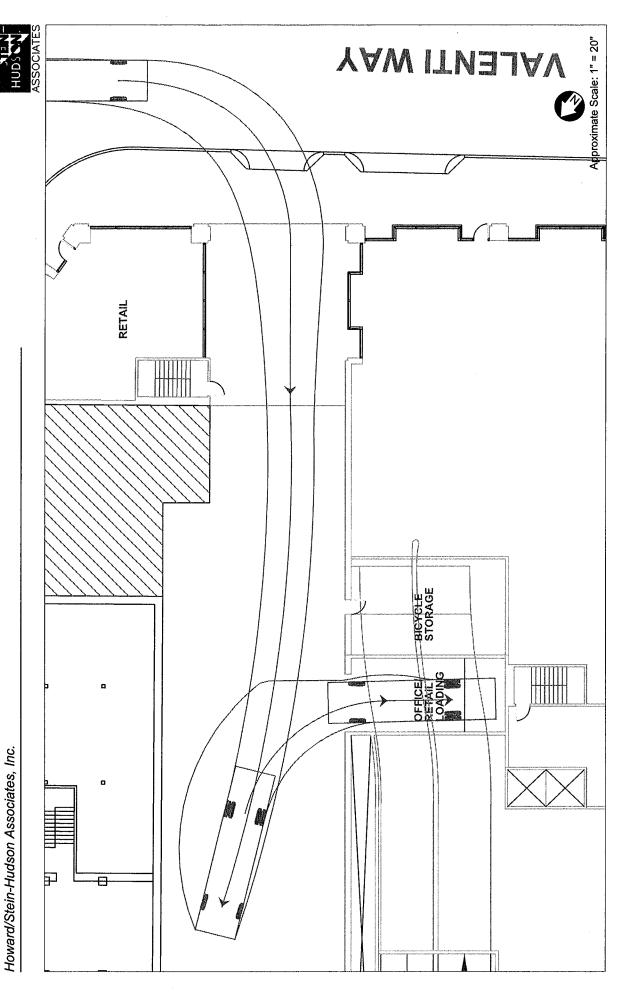
SU-35 Entering Hotel/Restaurant Loading Area



Howard/Stein-Hudson Associates, Inc.

The Merano

SU-35 Exiting Hotel/Restaurant Loading Area



The Merano

SU-35 Entering Office/Retail Loading Area

Approximate Scale: 1" = 20" YAW ITN3JAN RETAIL BICYCLE STORAGE The Merano Howard/Stein-Hudson Associates, Inc.

SU-35 Exiting Office/Retail Loading Area

Merano at the Bulfinch Triangle (Parcel 1B) - Proposed Detailed Trip Generation Estimate
Howard/Stein-Hudson Associates
June 16, 2008

						Assumed									
		Trip Rates	Unadjusted		Less	national vehicle			-	Walk/Bike/				Assumed local vehicle	
Size	re Category	(Trips/ksf or unit)	Vehicle	Internal	capture	occupancy rate <sup>1</sup>	Converted to	Transit Share <sup>2</sup>	Transit	Other Share <sup>2</sup>	Walk/ Bike/ Other Trips	Vehicle Share <sup>2</sup>	Vehicle Person Trips	occupancy	occupancy Total Adjusted
			-												
					Daily	Daily Trip Generation	ion								
Restaurant			in the state of th												
17.0	.0 Total	89.95	1529	43%	879	2.1	1,846	15%	277	54%	997	31%	572	2.1	273
KSF		44.98	765	43%	944	2.1	923	15%	138	24%	499	31%	286	2.1	136
	Out	44.98	765	43%	440	2.1	923	15%	138	54%	499	31%	286	2.1	136
Retail <sup>6</sup> The second se	医管胎形								oras Mais Siris		100) 100)		10 P		
19.	19.0 Total	121.44	2307	33%	1553	8.	2,796	15%	419	54%	1,609	31%	867	1.8	481
KSF		60.72	1154	33%	776	8.	1,398	15%	210	24%	755	31%	433	8.	241
	Out	60.72	1154	33%	9//	8.	1398	15%	210	24%	766	31%	433	1.8	24
Hotel <sup>6</sup>											no Fo	Hill Hill Hill			
Short-Term Stay 15:	153 Total	8.17	1250	19%	1018	1.8	1,832	15%	276	54%	989	31%	568	1.8	316
Roo	Rooms In	4.09	625	19%	209	8.	916	15%	137	24%	496	31%	284	8.	168
	Ont	4.09	625	19%	209	8:	916	15%	137	24%	496	31%	284	8,1	168
Hotel®		<b>建</b> 医阴道性		unii Kar					n in				年 報報 基連		
Long-Term Stay 121	:1 Total	8.17	686	19%	805	8.	1,448	15%	217	54%	782	31%	449	1.8	249
Roo	Rooms In	4.09	494	19%	402	8.	724	15%	109	24%	391	31%	225	4.8	126
	Out	4.09	494	19%	402	1.8	724	15%	109	54%	391	31%	225	1.8	126
Office?						K is Risi Mat							语差别		16 55 16 16 16 16 16 16 16 16 16 16 16 16 16 1
213	213.0 Total	11.01	2345	2%	2233	7.	2,680	30%	804	27%	724	43%	1,152	1.2	096
KSF	드	5.51	1173	2%	1117	1.2	1,340	30%	402	27%	362	43%	576	1.2	480
	Out	5.51	1173	2%	1117	1.2	1340	30%	402	27%	362	43%	576	1.2	480
Total Total	Total		8,420		6,487		10,601		1,992		5,001		3,608		2,279
	⊑		4,210		3,244		5,301		966		2,501		1,804		1,140
	o tno		4,210		3,244		6,301		966		2,501		1,804		1,140
				l											

Notes:

2001 National vehicle occupancy rates - 1.2: Home to work; 1.8: Retail; 2.1: Social and Recreational
 2. Mode shares based on 2000 Census data and BTD Data for Area 1
 3. Local vehicle occupancy rates based on 2000 Census data and 2001 National VOR.
 4. ITE Trip Generation Equation, 7th Edition, LUC 931 (Quality Restaurant)

ITE Trip Generation Equation, 7th Edition, LUC 820 (Shopping Center)
 ITE Trip Generation Rate, 7th Edition, LUC 310 (Hotel)
 ITE Trip Generation Rate, 7th Edition, LUC 710 (General Office)

Merano at the Bulfinch Triangle (Parcel 1B) - Proposed

Detailed Trip Generation Estimate Howard/Stein-Hudson Associates June 16, 2008

	İ					ľ			I	I	I					
						∢	Assumed									
						_	national								Assumed	
			Trip Rates	Unadjusted		Less	vehicle				Walk/Bike/				local vehicle	
			(Trips/ksf or		Internal cal	m	ઠ્ઠ	Converted to	Transit	Transit		Walk/ Bike/	Vehicle	Vehicle	<u>5</u>	Total Adjusted
Land Use Siz	Size	Category	ruit)			trips	rate <sup>1</sup>	Person trips	Share <sup>2</sup>	Trips	Share <sup>2</sup>	Other Trips	Share <sup>2</sup>	Person Trips	rate³	Vehicle Trips
					Ā	VI Peak Hou	AM Peak Hour Trip Generation	ration								
Restaurant	SSII PET															
	17.0 To	Total	0.81	14		14	2.1	29		4		17		80	2.1	4
\$2	KSF in		99:0	Ξ		Ŧ	2.1	2	16%	4	%29	4	27%	9	2.1	ю
	Out	ut	0.15	2		2	2.1	Q	13%	-	%09	e	27%	•	2.1	-
Retail <sup>5</sup> The second of the se												a fill		14 S		
19	19.0 To	Total	3.04	28		58	4.8	\$		16		2		28	1.8	16
₹	KSF		1.86	35		35	8.	83	16%	9	22%	æ	27%	17	<del>6</del> .	5
	Ont	Ħ	1.19	23		23	8:	4	13%	10	%09	24	27%	7	1.8	9
Hotel <sup>8</sup>		40.00												i Mi		
Short-Term Stay 15	153 To	Total	0.56	98		86	1.8	164		ឌ		96		42	1.8	23
Roc	Rooms in		0.34	25		52	8.	25	16%	16	22%	75	27%	52	8.	4
	Out	Ħ	0.22	33		33	8:	9	13%	80	%09	36	27%	16	1.8	6
Hotel®				40												
Long-Term Stay 12	121 To	Total	0.56	89		68	1.8	122		18		۲		33	9.1	18
Roc	Rooms In		0.34	41		14	8:	74	16%	12	22%	42	27%	20	6.1	£
	Out	rt.	0.22	26		26	1.8	48	13%	9	%09	29	27%	13	1.8	7
Office 7													150 150			
216	213.0 To	Total	1.55	330	.,	330	1.2	396		129		117		151	1.2	126
¥	KSF		1.36	291		291	1,2	349	33%	116	78%	ξ	38%	132	1.2	110
	ō	#	0,19	40		40	1.2	84	79%	14	33%	16	38%	18	1.2	15
Total Total	₽	Total		555	4,7	555		808		190		355		261		186
	⊆			431	•	431		604		166		247		202		148
	Out	<b>5</b>		124		124		204		8		108		8		88

Notes:

2001 National vehicle occupancy rates - 1.2: Home to work; 1.8: Retail; 2.1: Social and Recreational
 2. Mode shares based on 2000 Census data and BTD Data for Area 1
 3. Local vehicle occupancy rates based on 2000 Census data and 2001 National VOR.
 4. ITE Trip Generation Equation, 7th Edition, LUC 931 (Quality Restaurant)

5. ITE Trip Generation Equation, 7th Edition, LUC 820 (Shopping Center) 6. ITE Trip Generation Rate, 7th Edition, LUC 310 (Hotel) 7. ITE Trip Generation Rate, 7th Edition, LUC 710 (General Office)

Merano at the Bulfinch Triangle (Parcel 1B) - Proposed Detailed Trip Generation Estimate Howard/Stein-Hudson Associates June 16, 2008

			Unadiusted		A	Assumed national vehicle				Walk/Bike/				Assumed local vehicle	
SS GOLDEN	Size Category	(Trips/ksf or	Vehicle	Internal	m	<u>&gt;</u>	Converted to	Transit	Transit	Other Share <sup>2</sup>	Walk/ Bike/	Vehicle		occupancy	occupancy Total Adjusted
		(IIII)			sdin	rate	rerson trips	onare	sdut	Share	Other Imps	Snare	Person Inps	rate-	venicie inps
					PM Peak Hour Trip Generation	ur Trip Gen	eration								
Restaurant	and Park Pilan Sahii Sahii														
17.	17.0 Total	7.49	127	32%	87	2.1	182		26		107		49	2.1	23
KSF		5.02	85	31%	29	2.1	124	13%	9	%09	74	27%	33	2.1	16
	Out	2.47	42	35%	28	2.1	89	16%	თ	21%	33	27%	á	2.1	7
Retail															
19.	19.0 Total	11.01	209	25%	157	1.8	282		4		165		9/	1.8	42
83	KSF in	5.29	100	19%	8	1.8	146	13%	19	%09	88	27%	4	1.8	22
	Out	5.73	109	31%	76	1.8	136	16%	22	27%	78	27%	37	1.8	20
Hotel <sup>©</sup>							96 96 86 86								
Short-Term Stay 15:	153 Total	0.59	06	23%	70	1.8	126		18		73		34	1.8	19
Roo	Rooms In	0.31	48	23%	37	1.8	99	13%	G	%09	4	27%	82	8.	5
	Out	0.28	42	23%	33	1.8	69	16%	6	22%	34	27%	16	8.	6
Hotel <sup>6</sup>						india Service							100 100 100		
Long-Term Stay 12	121 Total	0.59	74	23%	55	1.8	66		4		88		27	1.8	16
Roo	Rooms In	0.31	38	23%	53	1.8	62	13%	7	%09	34	27%	4	1.8	80
	Out	0.28	34	23%	26	1.8	47	16%	7	57%	27	27%	13	1.8	7
Office'														om Visi	ind and
213	213.0 Total	1.49	317	7%	311	1.2	373		121		111		142	1.2	118
KSF	드	0.25	54	%9	51	1.2	61	78%	18	33%	8	38%	23	1.2	19
	Out	1.24	263	2%	260	1.2	312	33%	103	29%	91	38%	119	1,2	8
Total	Total		816		629		1,062		219	-	616		328		218
	드		325		257		460		89		263		128		9/
THE PROPERTY OF THE PROPERTY O	Out		490		422		612		151		261		200		143

Notes:

2001 National vehicle occupancy rates - 1.2: Home to work; 1.8: Retail; 2.1: Social and Recreational
 2. Mode shares based on 2000 Census data and BTD Data for Area 1
 3. Local vehicle occupancy rates based on 2000 Census data and 2001 National VOR.
 4. ITE Trip Generation Equation, 7th Edition, LUC 931 (Quality Restaurant)

ITE Trip Generation Equation, 7th Edition, LUC 820 (Shopping Center)
 ITE Trip Generation Rate, 7th Edition, LUC 310 (Hotel)
 ITE Trip Generation Rate, 7th Edition, LUC 710 (General Office)

Appendix (	C
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Air Quality Appendix

# APPENDIX C AIR QUALITY

#### Introduction

The Air Quality Appendix C to the Merano-Parcel 1B Project PNF provides modeling assumptions and backup for results presented in Section 3.5 of the report. Included within this documentation is a brief description of the methodology employed along with modeling outputs for the EPA MOBILE6 emission model and EPA SCREEN3 model.

#### **Motor Vehicle Emissions**

The EPA MOBILE6.2 computer program generated motor vehicle emissions used in the garage analysis along with the CAL3QHC modeling. The model input parameters were based on MA DEP approved inputs as outlined in the Department's February 12, 2003 letter addressing the use of the model in indirect source air quality analyses and any updates since the letter. Emission rates were derived for 2013 for speed limits of 2.5 mph and 25 mph. The 2.5 mph rate was used to determine idle mode emissions conservatively used to estimate garage and loading/unloading dock emissions.

## CAL3QHC

For the intersections studied, the CAL3QHC model was applied to calculate CO concentrations at sensitive receptor locations using emission rates derived in MOBILE6.2. The intersection's queue links and free flow links were input to the model along with sensitive receptors at all locations nearby each intersection. The meteorological assumptions input into the model were a 1.0 meter per second wind speed, Pasquill-Gifford Class D stability combined with a mixing height of 1000 meters. For each direction, the full range of wind directions at 10 degree intervals was examined. In addition, a surface roughness (z<sub>0</sub>) of 321 cm was used. Idle emission rates for queue links were based on 2.5 mph emission rates derived in MOBILE6.2 and converted from grams per mile to grams per hour.

## SCREEN3

The EPA SCREEN3 model was used to calculate air quality impacts due to the parking garage vent, and the mechanical equipment. For non-combustion sources, ambient temperature releases were assumed; otherwise temperatures from the exhaust gas were used. Urban dispersion coefficients were used. Building downwash was accounted in the modeling based on the building heights and projected widths of the buildings. The maximum modeled impact from the garage and the heating sources was conservatively added to monitored background values for comparison to the CO NAAQS.

## **Emissions**

Emissions for the heating combustion and emergency generator units were calculated using the latest DEP emission limits for boilers and generators based on the Boiler Environmental Results Program (ERP). The project consists of boilers with a total heat input of 24.6 MMBtu/hr. The total firing rate of 24.6 MMBtu/hr was multiplied by the ERP emission factor for CO of 0.08 lbs/MMBtu. The resulting hourly emission rate in pounds per hour were converted to grams per second and input to the SCREEN3 model. For the other pollutants, a similar approach was conducted for SO2,

NOx, and PM. The emer factors provided in the DE	rgency generator em P ERP for a 550 kW s	issions were also size units.	calculated b	ased on	the emis	sior

```
* MOBILE6.2.03 (24-Sep-2003)
 Input file: MA13_BOY.INP (file 1, run 1)
* *** Summer 2013 ***
* Reading Registration Distributions from the following external * data file: 2005_REG.D
 M 49 Warning:
                           MYR sum not = 1. (will normalize)
  M 49 Warning:
                 0.998
                           MYR sum not = 1. (will normalize)
  M 49 Warning:
                 0.998
                           MYR sum not = 1. (will normalize)
  M 49 Warning:
                 0.998
                           MYR sum not = 1. (will normalize)
  M 49 Warning:
                           MYR sum not = 1. (will normalize)
                  1.00
  M 49 Warning:
                  1.00
                            MYR sum not = 1. (will normalize)
  M 49 Warning:
                            MYR sum not = 1. (will normalize)
                 0.999
  M 49 Warning:
                            MYR sum not = 1. (will normalize)
                 0.998
  M 49 Warning:
                  1.00
                           MYR sum not = 1. (will normalize)
  M 49 Warning:
                 0.999
                            MYR sum not = 1. (will normalize)
  M 49 Warning:
                  1.00
                            MYR sum not = 1. (will normalize)
  M 49 Warning:
                           MYR sum not = 1. (will normalize)
                  1.00
  M 49 Warning:
                  1.00
                            MYR sum not = 1. (will normalize)
  M 49 Warning:
                  1.00
                            MYR sum not = 1. (will normalize)
* Reading I/M program description records from the following external
  data file: MA13_IM.D
* \text{I/M} program inputs for 2013 calendar year model run
* MA31 Exhaust I/M program for Light Duty pre-1996 MY vehicles <=10,0000 lb GVWR
* Reading non-default I/M CUTPOINTS from the following external
  data file: MA13_CUT.D
  Two-Speed Idle \stackrel{\frown}{\text{Exhaust}} I/M program for Heavy Duty vehicles >10,000 lb GVWR
 OBD Exhaust I/M program for Light Duty MY 1996+ vehicles <=10,000 lb GVWR
Gas Cap Evap I/M program thru CY 2003 for all Light Duty vehicles <=8,500 lb GVWR
* Gas Cap Evap I/M program for all MY Heavy Duty vehicles >8,500 lb GVWR
* OBD + Gas Cap Evap I/M program for MY 1996 - 2003 Light Duty vehicles <=8,500 lb GVWR starting 2004
* OBD Evap I/M program for MY 2004+
  M601 Comment:
                User has enabled STAGE II REFUELING.
 Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: MA_LEV2.D
  Reading User Supplied Tier2 Exhaust bin phase-in fractions
     Data read from file: LEV2EXH.D
  Reading User Supplied Tier2 EVAP phase-in fractions
     Data read from file: LEV2EVAP.D
  Reading User Supplied Tier2 50K certification standards
     Data read from file: LEV2CERT.D
  M616 Comment:
                User has supplied post-1999 sulfur levels.
  M614 Comment:
                User supplied diesel sale fractions.
  * 2013 DEFAULT SPEED - Summer
M 48 Warning:
 there are no sales for vehicle class HDGV8b HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.
 LEV phase-in data read from file MA_LEV2.D
Calendar Year: 2013
                              Month:
                                      July
                           Altitude:
                                      Low
               Minimum Temperature:
                                      68.0 (F)
               Minimum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
                Fuel Sulfur Content:
                                       30. ppm
```

Exhaust I/M Program: Yes Evap I/M Program: Yes ATP Program: Yes Reformulated Gas:

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	МС	All Veh
VMT Distribution:	0.2983	0.4117	0.1620		0.0369	0.0001	0.0015	0.0857	0.0038	1.0000
Composite Emission Fac	tors (g/m									
Composite VOC :	0.330	0.277	0.334	0.293	0.375	0.192	0.165	0.311	3.74	0.322
Composite CO :	4.51	4.48	4.83	4.58	6.36	1.413	0.424	0.929	17.09	4.350
Composite NOX :	0.267	0.273	0.398	0.308	0.922	0.433	0.220	4.300	1.27	0.664

M583 Warning:

The user supplied arterial average speed of 2.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

LEV phase-in data read from file MA\_LEV2.D

Calendar Year: 2013 Month: July

Altitude: Low

Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)

Absolute Humidity: 75. grains/lb Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes Evap I/M Program: Yes ATP Program: Yes

Reformulated Gas: Yes

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	VDDH	MC	All Veh
VMT Distribution:	0.2983	0.4117	0.1620		0.0369	0.0001	0.0015	0.0857	0.0038	1.0000
Composite Emission Fa	ctors (g/m	i):								
Composite VOC :	2.344	1.786	1.999	1.846	2.684	0.443	0.394	0.963	12.03	1.986
Composite CO :	12.84	11.20	12.11	11.46	29.47	4.148	1.357	4.120	119.90	12.298
Composite NOX :	0.620	0.531	0.766	0.597	0.675	0.698	0.355	6.699	1.12	1.132

M583 Warning:

The user supplied arterial average speed of 25.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

LEV phase-in data read from file MA\_LEV2.D Calendar Year: 2013 Month: July

Altitude:

Low Minimum Temperature:

68.0 (F) Maximum Temperature:

94.0 (F) 75. grains/lb Absolute Humidity:

30. ppm Fuel Sulfur Content:

Exhaust I/M Program: Yes

Evap I/M Program:

ATP Program: Yes Reformulated Gas: Yes

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh		
VMT Distribution:	0.2983	0.4117	0.1620		0.0369	0.0001	0.0015	0.0857	0.0038	1.0000		
Composite Emission Factors (q/mi):												
Composite VOC :	0.330	0.275	0.334	0.292	0.399	0.213	0.185	0.367	3.79	0.327		
Composite CO :	4.01	3.99	4.33	4.09	6.42	1.473	0.445	0.999	16.90	3.927		
Composite NOX :	0.273	0.274	0.401	0.310	0.833	0.377	0.191	3.637	1.12	0.606		

File 1, Run 1, Scenario 4.

M583 Warning:

The user supplied arterial average speed of 30.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types. M 48 Warning: there are no sales for vehicle class HDGV8b LEV phase-in data read from file MA\_LEV2.D Calendar Year: 2013 Month: July Altitude: Low 68.0 (F) Minimum Temperature: Maximum Temperature: 94.0 (F) Absolute Humidity: 75. grains/lb Fuel Sulfur Content: 30. ppm Exhaust I/M Program: Yes Evap I/M Program: Yes ATP Program: Reformulated Gas: LDGT34 All Veh LDGT12 LDGT HDGV LDDV LDDT HDDV MC Vehicle Type: LDGV <6000 >6000 (All) 0.2983 0.4117 0.1620 0.0369 0.0001 0.0015 0.0857 0.0038 1.0000 VMT Distribution: Composite Emission Factors (g/mi): 0.315 0.306 Composite VOC : 0.313 0 261 0.317 0.277 0.354 0.193 0.166 3.59 Composite CO : 0.394 3.825 4.28 4.04 1.325 3.96 3.95 Composite NOX : 0.257 0.262 0.297 0.868 0.361 0.183 3.488 1.18 0.583 \*\*\*\*\*\*\*\*\*\*\*\* \* MOBILE6.2.03 (24-Sep-2003) \* Input file: MA13\_BOY.INP (file 1, run 2). \* \*\*\* Winter 2013 \*\*\* \* Reading Registration Distributions from the following external data file: 2005\_REG.D M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: MYR sum not = 1. (will normalize) 0.998 M 49 Warning: 0.998 MYR sum not = 1. (will normalize) M 49 Warning: MYR sum not = 1. (will normalize) M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: 0.999 MYR sum not = 1. (will normalize) M 49 Warning: 0.998 MYR sum not = 1. (will normalize) M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: 0.999 MYR sum not = 1. (will normalize) M 49 Warning: MYR sum not = 1. (will normalize) M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: MYR sum not = 1. (will normalize) 1.00 M 49 Warning: 1.00 MYR sum not = 1. (will normalize) \* Reading I/M program description records from the following external data file: MA13\_IM.D

- \* I/M program inputs for 2013 calendar year model run
- \* MA31 Exhaust I/M program for Light Duty pre-1996 MY vehicles <=10,0000 lb GVWR
- \* Reading non-default I/M CUTPOINTS from the following external
- \* data file: MA13\_CUT.D
- \* Two-Speed Idle Exhaust I/M program for Heavy Duty vehicles >10,000 lb GVWR
- \* OBD Exhaust I/M program for Light Duty MY 1996+ vehicles <=10,000 lb GVWR \* Gas Cap Evap I/M program thru CY 2003 for all Light Duty vehicles <=8,500 lb GVWR
- \* Gas Cap Evap I/M program for all MY Heavy Duty vehicles >8,500 lb GVWR
- \* OBD + Gas Cap Evap I/M program for MY 1996 2003 Light Duty vehicles <=8,500 lb GVWR starting 2004
- \* OBD Evap I/M program for MY 2004+

M601 Comment:

User has enabled STAGE II REFUELING.

- \* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
- \* data file: MA\_LEV2.D

Reading User Supplied Tier2 Exhaust bin phase-in fractions

Data read from file: LEV2EXH.D

Reading User Supplied Tier2 EVAP phase-in fractions

Data read from file: LEV2EVAP.D

```
Reading User Supplied Tier2 50K certification standards
    Data read from file: LEV2CERT.D
 M616 Comment:
              User has supplied post-1999 sulfur levels.
 M614 Comment:
              User supplied diesel sale fractions.
* 2013 DEFAULT SPEED - Winter
M112 Warning:

Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
   data file: TECH12.D
  M 48 Warning:
 there are no sales for vehicle class HDGV8b HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.
 LEV phase-in data read from file MA_LEV2.D
                    Calendar Year: 2013
                           Month:
                         Altitude:
                                   Low
             Minimum Temperature: 35.0 (F)
                                   45.0 (F)
              Maximum Temperature:
                                    75. grains/lb
                Absolute Humidity:
                                   30. ppm
              Fuel Sulfur Content:
             Exhaust I/M Program: Yes
Evap I/M Program: Yes
                     ATP Program:
                                    Yes
                 Reformulated Gas: Yes
                                                                                                           MC All Veh
                                                                           LDDV
                                                                                               HDDV
       Vehicle Type:
                          LDGV
                                 LDGT12
                                           LDGT34
                                                       LDGT
                                                                 HDGV
                                                                                     LDDT
                                                       (A11)
                                            >6000
               GVWR:
                                  <6000
   VMT Distribution:
                        0.3031
                                 0.4092
                                           0.1608
                                                                0.0365
                                                                         0.0002
                                                                                   0.0015
                                                                                              0.0851
                                                                                                       0.0037
                                                                                                                 1.0000
 Composite Emission Factors (g/mi):
                                    0.289
                                                        0.314
                                                                  0.384
                                                                           0.187
                                                                                     0.171
                                                                                               0.318
                                                                                                          3.35
                                                                                                                   0.332
     Composite VOC :
Composite CO :
                                              0.378
                         0.329
                         10.34
                                    9.62
                                              9.79
                                                                                     0.430
                                                                                                                   9.073
     Composite NOX :
                          0.280
                                    0.311
                                              0.469
                                                        0.356
                                                                 1.069
                                                                           0.429
                                                                                    0.234
                                                                                              4.656
                                                                                                         1.68
                                                                                                                  0.730
* 2013 Idle Scenario - Winter (multiply g/mi by 2.5 mph to get g/hr)
* File 1, Run 2, Scenario 2.
 M583 Warning:
            The user supplied arterial average speed of 2.5
            will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M112 Warning:
Wintertime Reformulated Gasoline Rules Apply
              there are no sales for vehicle class HDGV8b
 LEV phase-in data read from file MA_LEV2.D Calendar Year: 2013
                            Month:
                                    Jan.
                         Altitude.
                                    LOW
              Minimum Temperature:
                                    35.0
              Maximum Temperature: 45.0 (F)
                                    75. grains/lb
30. ppm
                Absolute Humidity:
              Fuel Sulfur Content:
              Exhaust I/M Program: Yes
                 Evap I/M Program:
                                    Yes
                      ATP Program:
                                    Yes
                 Reformulated Gas:
                                    Yes
                                                                                                               All Veh
                                                                                     LDDT
                                                                                               HDDV
                                                                                                            MC
                                  LDGT12
                                            LDGT34
                                                        LDGT
                                                                  HDGV
                                                                            LDDV
       Vehicle Type:
                          LDGV
                                   <6000
                                             >6000
                                                       (A11)
               GVWR:
                                                                                              0.0851
                                                                                                        0.0037
                                                                                                                  1.0000
                                            0.1608
                                                                0.0365
                                                                          0.0002
                                                                                    0.0015
    VMT Distribution:
                        0.3031
                                  0.4092
  Composite Emission Factors (g/mi):
                                    1.782
                                                                                               0.983
                                                                                                                   2.020
     Composite VOC :
Composite CO :
                                              2.083
                                                        1.867
                                                                  3.015
                                                                           0.434
                                                                                     0.409
                         2.372
                                                                                     1.379
                                                                                               4.404
                                                                                                        100.99
                                                                                                                  19.416
                         20.61
                                   19.08
                                              0.854
```

0.650

0.782

0.692

0.378

7.251

1.48

1.180

0.520

Composite NOX :

M583 Warning:

The user supplied arterial average speed of 25.0 will be used for all hours of the day. 100% of VMT

0.570

File 1, Run 2, Scenario 3.

has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types. M112 Warning:

Wintertime Reformulated Gasoline Rules Apply

M 48 Warning: there are no sales for vehicle class HDGV8b

LEV phase-in data read from file MA\_LEV2.D Calendar Year: 2013

Month: Jan.

Altitude: Low

Minimum Temperature: 35.0 (F)

Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes Evap I/M Program: Yes

ATP Program: Yes

Reformulated Gas:

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	PDDA	LDDT	HDDV	MC	All Veh		
					~ ~ ~ ~ ~							
VMT Distribution:	0.3031	0.4092	0.1608		0.0365	0.0002	0.0015	0.0851	0.0037	1.0000		
Composite Emission Factors (g/mi):												
Composite VOC :	0.325	0.283	0.375	0.309	0.410	0.208	0.191	0.375	3.40	0.335		
Composite CO :	9.73	9.01	9.14	9.05	7.88	1.444	0.451	1.068	15.67	8.542		
Composite NOX :	0.277	0.310	0.469	0.355	0.965	0.373	0.204	3.938	1.48	0.662		

M583 Warning:

The user supplied arterial average speed of 30.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:

Wintertime Reformulated Gasoline Rules Apply

M 48 Warning: there are no sales for vehicle class HDGV8b

LEV phase-in data read from file MA\_LEV2.D

Calendar Year: 2013

Month: Jan. Altitude: Low

Minimum Temperature: 35.0 (F)

Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb

30. ppm Fuel Sulfur Content:

Exhaust I/M Program: Yes Evap I/M Program:

ATP Program: Yes Reformulated Gas: Yes

Vehicle Type: GVWR:	PDGA	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Ven
						~				
VMT Distribution:	0.3031	0.4092	0.1608		0.0365	0.0002	0.0015	0.0851	0.0037	1.0000
Composite Emission Fa	ctors (g/m	i):		*****						
Composite VOC :	0.308	0.270	0.359	0.295	0.353	0.189	0.172	0.321	3.21	0.314
Composite CO :	9.66	8.94	9.06	8.98	6.53	1.297	0.400	0.883	13.78	8.408
Composite NOX :	0.266	0.298	0.453	0.342	1.006	0.358	0.195	3.776	1.56	0.640

```
*** SCREEN3 MODEL RUN ***

*** VERSION DATED 96043 ***
```

SCREEN3 Modeling Runs Boilers Parcel 1B

#### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	47.9000
STK INSIDE DIAM (M)	=	.6100
STK EXIT VELOCITY (M/S	) =	11.1000
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	48.5000
MIN HORIZ BLDG DIM (M)	=	45.7000
MAX HORIZ BLDG DIM (M)	=	129.5000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = 11.462 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGMA	
(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
50.	.0000	0	.0	.0	.0	.00	.00	.00	NA
60.	.0000	0	.0	.0	.0	.00	.00	.00	NA
75.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	.0000	0	.0	.0	. 0	.00	.00	.00	NA
125.	.0000	0	.0	.0	.0	.00	.00	.00	NA
150.	114.7	5	1.0	1.6	10000.0	48.04	16.03	29.98	SS
200.	98.42	5	1.0	1.6	10000.0	48.04	21.17	32.91	SS
250.	86.23	5	1.0	1.6	10000.0	48.04	26.22	35.84	SS
300.	76.38	5	1.0	1.6	10000.0	48.04	31.18	38.78	SS
350.	68.15	5	1.0	1.6	10000.0	48.04	36.06	41.71	SS
400.	61.14	5	1.0	1.6	10000.0	48.04	40.85	44.64	SS
500.	49.80	5	1.0	1.6	10000.0	48.04	50.21	51.47	SS
600.	41.70	5	1.0	1.6	10000.0	48.04	59.27	54.89	SS
700.	35.73	5	1.0	1.6	10000.0	48.04	68.06	58.17	SS
800.	31.17	5	1.0	1.6	10000.0	48.04	76.59	61.32	SS
900.	27.56	5	1.0	1.6	10000.0	48.04	84.89	64.35	SS
1000.	24.65	5	1.0	1.6	10000.0	48.04	92.97	67.28	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*\*\*\*\*\*\*

- \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*
- \* SIMPLE ELEVATED TERRAIN PROCEDURE \*

\*\*\*\*\*\*\*\*\*\*

TERRAIN		RANGE (M)
HT (M)	MINIMUM	MUMIXAM
0.	50.	
0.	60.	
0.	75.	
0.	100.	
0.	125.	
0.	150.	
0.	200.	
0.	250.	
0.	300.	
0.	350.	
0.	400.	
0.	500.	
0.	600.	
0.	700.	
0.	800.	
0.	900.	made samp
0.	1000.	

\*\*\*\*\*\*\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)

*** CAVITY CALCULAT	ION	- 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3)	=	106.1	CONC (UG/M**3) = 89.47
CRIT WS @10M (M/S)	==	1.00	CRIT WS @10M $(M/S) = 4.92$
CRIT WS @ HS (M/S)		1.37	CRIT WS @ HS (M/S) = 6.72
DILUTION WS (M/S)	=	1.00	DILUTION WS $(M/S) = 3.36$
CAVITY HT (M)	222	71.30	CAVITY HT $(M) = 50.91$
CAVITY LENGTH (M)	=	160.64	CAVITY LENGTH $(M) = 64.73$
ALONGWIND DIM (M)	=	45.70	ALONGWIND DIM $(M) = 129.50$

END OF CAVITY CALCULATIONS

\*\*\*\*\*\*\*\*\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)			
SIMPLE TERRAIN	114.7	150.	0.			
BLDG. CAVITY-1	106.1	161.	<b></b>	(DIST	= CAVITY	LENGTH)
BLDG. CAVITY-2	89.47	65.	***	(DIST	= CAVITY	LENGTH)

\*\*\*\*\*\*\*\*\*\*\*\*

<sup>\*\*</sup> REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

<sup>\*\*\*\*\*\*\*\*\*\*\*\*\*</sup> 

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*** SCREEN3 MODEL RUN ***

*** VERSION DATED 96043 ***
```

SCREEN3 Modeling Runs Emergency Generators Parcel 1B

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	==	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	47.9000
STK INSIDE DIAM (M)	=	.0305
STK EXIT VELOCITY (M/S	) =	60.0000
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	48.5000
MIN HORIZ BLDG DIM (M)	=	45.7000
MAX HORIZ BLDG DIM (M)	=	129.5000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .836 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
50.	.0000	0	.0	.0	.0	.00	.00	.00	NA
60.	.0000	0	.0	.0	. 0	.00	.00	.00	NA
75.	.0000	0	.0	.0	. 0	.00	.00	.00	NA
100.	.0000	0	.0	.0	.0	.00	.00	.00	NA
125.	.0000	0	.0	.0	.0	.00	.00	.00	NA
150.	62.41	1	1.0	1.3	320.0	47.90	48.37	38.61	SS
200.	54.91	3	1.0	1.4	320.0	47.90	51.72	40.00	SS
250.	53.41	3	1.0	1.4	320.0	47.90	55.07	50.00	SS
300.	46.03	4	1.0	1.5	320.0	47.90	58.42	42.88	SS
350.	44.07	4	1.0	1.5	320.0	47.90	61.77	46.61	SS
400.	41.45	4	1.0	1.5	320.0	47.90	65.12	52.92	SS
500.	33.88	4	1.0	1.5	320.0	47.90	74.32	65.28	SS
600.	29.38	5	1.0	1.6	10000.0	47.90	81.97	60.19	SS
700.	26.20	5	1.0	1.6	10000.0	47.90	90.12	63.26	SS
800.	23.58	5	1.0	1.6	10000.0	47.90	98.06	66.23	SS
900.	21.40	5	1.0	1.6	10000.0	47.90	105.80	69.09	SS
1000.	19.56	5	1.0	1.6	10000.0	47.90	113.35	71.86	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*\*\*\*\*\*\*

- \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*
- \* SIMPLE ELEVATED TERRAIN PROCEDURE \*

\*\*\*\*\*\*\*\*\*\*

TERRAIN HT (M)		RANGE (M) MAXIMUM
0.	50.	
0.	60.	
0.	75.	
0.	100.	
0.	125.	
0.	150.	
0.	200.	
0.	250.	
0.	300.	
0.	350.	
0.	400.	
0.	500.	
0.	600.	<del>-</del> -
0.	700.	
0.	800.	
0.	900.	
0.	1000.	

\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)

*** CAVITY CALCULAT	ION	1 ***	*** CAVITY CALCULATION -	2 ***
CONC (UG/M**3)	=	106.1	CONC (UG/M**3) =	300.8
CRIT WS @10M (M/S)	=	1.00	CRIT WS $@10M (M/S) =$	1.35
CRIT WS @ HS (M/S)	===	1.37	CRIT WS $@$ HS $(M/S) =$	1.85
DILUTION WS (M/S)	=	1.00	DILUTION WS $(M/S) =$	1.00
CAVITY HT (M)	==	71.30	CAVITY HT (M) =	50.91
CAVITY LENGTH (M)	=	160.64	CAVITY LENGTH (M) =	64.73
ALONGWIND DIM (M)	=	45.70	ALONGWIND DIM $(M) = 1$	L29.50

END OF CAVITY CALCULATIONS

\*\*\*\*\*\*\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)	
SIMPLE TERRAIN	62.41	150.	0.	
BLDG. CAVITY-1	106.1	161.		(DIST = CAVITY LENGTH)
BLDG. CAVITY-2	300.8	65.	~	(DIST = CAVITY LENGTH)

\*\*\*\*\*\*\*\*\*\*\*

```
*** SCREEN3 MODEL RUN ***

*** VERSION DATED 96043 ***
```

SCREEN3 Modeling Runs Garage Parcel 1B

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	===	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	==	44.8000
STK INSIDE DIAM (M)	=	.3050
STK EXIT VELOCITY (	M/S) =	.0000
STK GAS EXIT TEMP (	K) =	293.0000
AMBIENT AIR TEMP (K	) =	293.0000
RECEPTOR HEIGHT (M)		.0000
URBAN/RURAL OPTION	Annual Annual	URBAN
BUILDING HEIGHT (M)	==	48.5000
MIN HORIZ BLDG DIM	(M) =	45.7000
MAX HORIZ BLDG DIM	(M) =	129.5000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
50.	.0000	0	.0	.0	.0	.00	.00	.00	NA
60.	.0000	0	.0	.0	.0	.00	.00	.00	NA
75.	.0000	0	. 0	.0	. 0	.00	.00	.00	NA
100.	.0000	0	.0	.0	.0	.00	.00	.00	NA
125.	.0000	0	.0	.0	. 0	.00	.00	.00	NA
150.	69.43	1	1.0	1.3	320.0	44.80	48.37	38.61	SS
200.	60.89	3	1.0	1.3	320.0	44.80	51.72	40.00	SS
250.	57.33	3	1.0	1.3	320.0	44.80	55.07	50.00	SS
300.	50.70	4	1.0	1.5	320.0	44.80	58.42	44.30	SS
350.	47.78	4	1.0	1.5	320.0	44.80	61.77	47.65	SS
400.	44.37	4	1.0	1.5	320.0	44.80	65.12	52.92	SS
500.	35.64	4	1.0	1.5	320.0	44.80	74.32	65.28	SS
600.	30.81	5	1.0	1.6	10000.0	44.80	81.97	61.81	SS
700.	27.36	5	1.0	1.6	10000.0	44.80	90.12	64.83	SS
800.	24.56	5	1.0	1.6	10000.0	44.80	98.06	67.74	SS
900.	22.23	5	1.0	1.6	10000.0	44.80	105.80	70.55	SS
1000.	20.27	5	1.0	1.6	10000.0	44.80	113.35	73.28	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*\*\*\*\*\*\*

- \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*
- SIMPLE ELEVATED TERRAIN PROCEDURE \*\*\*\*\*\*\*\*\*\*\*

TERRAIN		RANGE (M)
HT (M)	MINIMUM	MUMIXAM
0.	50.	
0.	60.	dark Area
0.	75.	
0.	100.	
0.	125.	
0.	150.	
0.	200.	
0.	250.	
0.	300.	
0.	350.	
0.	400.	
0.	500.	
0.	600.	
0.	700.	
0.	800.	
0.	900.	

\*\*\*\*\*\*\*\*\*\*

1000.

\*\*\* REGULATORY (Default) \*\*\* PERFORMING CAVITY CALCULATIONS WITH ORIGINAL SCREEN CAVITY MODEL (BRODE, 1988)

0.

\*\*\*\*\*\*\*\*\*\*\*

*** CAVITY CALCULAT	ION	1 - 1 ***	*** CAVITY CALCULATION	- 2 ***
CONC (UG/M**3)	=	106.1	CONC (UG/M**3) =	300.8
CRIT WS @10M (M/S)	=	1.00	CRIT WS @10M $(M/S) =$	1.00
CRIT WS @ HS (M/S)	=	1.35	CRIT WS $@$ HS $(M/S) =$	1.35
DILUTION WS (M/S)	==	1.00	DILUTION WS $(M/S) =$	1.00
CAVITY HT (M)	=	71.30	CAVITY HT (M) =	50.91
CAVITY LENGTH (M)	=	160.64	CAVITY LENGTH (M) =	64.73
ALONGWIND DIM (M)	==	45.70	ALONGWIND DIM (M) =	129.50

\*\*\*\*\*\*\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*\*\*\*\*\*\*\*

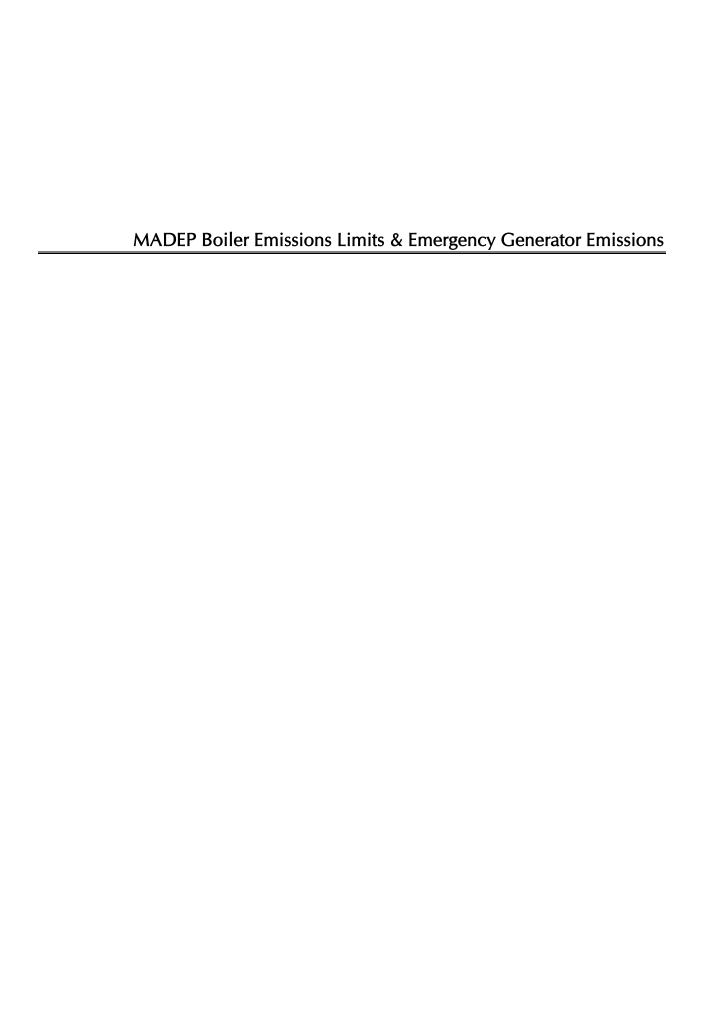
\*\*\*\*\*\*\*\*\* \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\* \*\*\*\*\*\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)				
SIMPLE TERRAIN	69.43	150.	0.				
BLDG. CAVITY-1	106.1	161.	and the	(DIST	= CAVITY	LENGTH)	
BLDG. CAVITY-2	300.8	65.	***	(DIST	= CAVITY	LENGTH)	

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*

<sup>\*\*</sup> REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*



Parcel 1B											NATION AND ADDRESS OF THE PROPERTY OF THE PROP						
Potential Emissions	suc																
Unit	Output		Input		MMBtu/hr		ΕΠ	Emission Kate			Units	Hours		Annual	Annual Emissions - tpy	IS - tpy	
						Š	00	VOC	PM	SO2			Š	8	VOC	PM	502
Egen#1	550	KW	746	ВНР		3.000	2.6000	1.0000	0.1500	0.0388	g/bhphr	300	0.74	0.64	0.25	0.04	0.01
Egen#2	550	kW	746	BHP		3.000	2.6000	1.0000	0.1500	0.0388	g/bhphr	300	0.74	0.64	0.25	0.04	0.01
													1 40	000	07.0	7001	000
	7.0	1 4 4 4 D t / (Lo.	***************************************		24.00	0.025	800	0.03	on of the pool of the part of	rgency C	Ib/AAAB#u	0 760	04.7	07.1	2 15	10.07	0.02
bollers lotal	47	MIMBLU/III	***************************************		74.00	0.000	000	C0.0	10.0	0.000		0,'0	20.0	r.	2.5	50.	0.00
Energy Recovery/Makeu					and her and state of the state								444-444-444-444-444				
d	0.55	MMBtu/hr			0.55	0.035	0.08	0.03	0.01	0.0006	lb/MMBtu	8,760	0.08	0.19	0.07	0.02	0.001
												Total	5.24	9.88	3.72	1.15	0.08
				-											I		
Unit	Output		Input		MMBtu/hr		short to	short term per unit(g/s)	nit(g/s)			Hours		long ten	long term per unit (g/s)	nit (g/s)	
						Š N	93	VOC	PM	SO2			XON	9	VOC	PM	SO2
Egen#1	550	KW	746	ВНР		0.62	0.54	0.21	0.03	0.01		300	0.021	0.018	0.007	0.001	0.000
Egen#1	550	kW	746	BHP		0.62	0.54	0.21	0.03	0.01		300	0.021	0.018	0.007	0.001	0.000
- -	,	2 30			0,10	7				0		0 100	707	2	6	0	0
Boilers Iotal	24.1	MMBtu/hr			24.10	0.11	0.24	0.09	0.03	0.00		8,760	0.106	0.242	0.091	0.030	0.007
Energy Recovery/Makeu																	
d	0.55	MMBtu/hr			0.55	0.007	0.006	0.002	0.001	0.000	***************************************	8,760	0.002	900.0	0.002	0.001	0.000
	2	todeling Par	ameters														
Unit	Egen#1	Egen#2 Boilers	Boilers All	Energy	Energy Recovery												
				- 1													
flow (per unit)	15,000	150	36000	36(	cfm												
Diam	12	12	24.0		8.0 inches												
Diam			2.0	1	0.8 ft												
Area	0.79		16.54		. ft2												
Flow	318.3	ന	36.28	3 36.28 fps	fps			Manual Annual An									
Flow	97.0	97.0	11.1		11.1 mps												
Temp	973.2	973.2	440		Ш												
Temp	296	962	200		소												
Stack Elev	169	169	169		169 ft agl		Note 1: A	III stacks a	Note 1: All stacks are 10 feet above roof level	above ro	of level						
Ground Elev	0	0	0		0 ft asl			***************************************									

Table -2

### SCREEN3 Modeling Results Parcel 1B

### Emergency Generator + Heating Boilers

	Em	issions
Pollutant	Emergency Generator x 2 (g/s)	Heating Boilers (combined) (g/s)
NOx	1.48	0.11
SO2	0.02	0.001
co	1.28	0.24
PM	0.07	0.03

SCREEN3 Maximu	m 1-hour Con	centration
ug/m3	300.8	114.7

### SCREEN3 Modeling Summary Compared to NAAQS

Pollutant	Period	Generator Concentration (ug/m³)	Loading Dock Concentration (ug/m³)	Monitored Background (ug/m³)	Total Concentration (ug/m³)	NAAQS (ug/m³)
NOx	Annual	2.23		47	49	100
SO2	3-Hour	5.52		84	90	1300
	24-Hour Annual	2.45 0.026		52 11	54 11	365 80
PM	24-Hour	9.80		58	68	150
	Annual	0.33		29	29	50
CO	1-Hour	412.55		2552	2964.55	40000
	8-Hour	288.79		1740	2028.79	10000

Hrs of Operation E.G.

300

Hrs of Operation boilers

8760

### Notes:

Nox, PM, and SO2 background values based on the highest values in the Boston area per DEP Monitors for 2005 to 2007.



## Parcel 1B

# Mesoscale Analysis

					and the
Intersection	Peak	Exist	No-Build	Build	Ē
1 North Washington Street/Causeway	AM	3356	3346	3346	
	PM	3536	3737	3737	
2 North Washington Street/Valenti Wa	AM	2118	2192	2275	
	PM	2150	2357	2399	
3 North Washington Street/Beverly St	AM	1477	1559	1581	
	PM	1290	1537	1620	
4 New Chardon Street/Surface Road	AM	2372	2476	2498	***************************************
	PM	2692	3055	3138	
5 North Washington Street/Endicott S	AM	1709	1650	1650	ingine an
	PM	1781	1887	1887	

Exist	1678	1768	1059	1075	738.5	645	474.4	538.4	854.5	890.5
Miles Per Intersection	0.5	9.0	0.5	0.5	9.0	0.5	0.2	0.2	0.5	0.5

1673 1868.5 1137.5 1199.5 790.5 810 499.6 627.6

1673 1868.5 1096 1178.5 779.5 778.5 495.2 611 825 943.5

Build

No-Build

4925.6	5449.1	
4868.7	5370	
4804.4	4916.9	

11350

11223

12573

11449 11032

825 943.5

Total		The same of the sa
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Notes:

### **Table 3-5-2**

### Mesoscale Analysis Summary Boston, MA

### Parcels 1B

						% Difference
Pollutant	Time	Units	Full Build	No-Build	BD-NB	(BD-NB)
VOC	AM Peak	grams/hr	1,546.6	1,528.8	17.9	1.17%
		tons/hr	0.00170	0.00169	0.00002	1.17%
		tons/day*	0.017	0.017	0.000	1.17%
	PM Peak	grams/hr	1711.017	1686.180	24.8	1.47%
		tons/hr	0.00189	0.00186	0.00003	1.47%
		tons/day*	0.019	0.019	0.000	1.47%
NOx	AM Peak	grams/hr	3,152.4	3,116.0	36.4	1.17%
		tons/hr	0.00347	0.00343	0.00004	1.17%
		tons/day*	0.035	0.034	0.000	1.17%
	PM Peak	grams/hr	3,487.4	3,436.8	50.6	1.47%
		tons/hr	0.00384	0.00379	0.00006	1.47%
		tons/day*	0.038	0.038	0.001	1.47%

<sup>\*</sup> Tons/day estimated by assuming hourly peak is 10 percent of total volume.

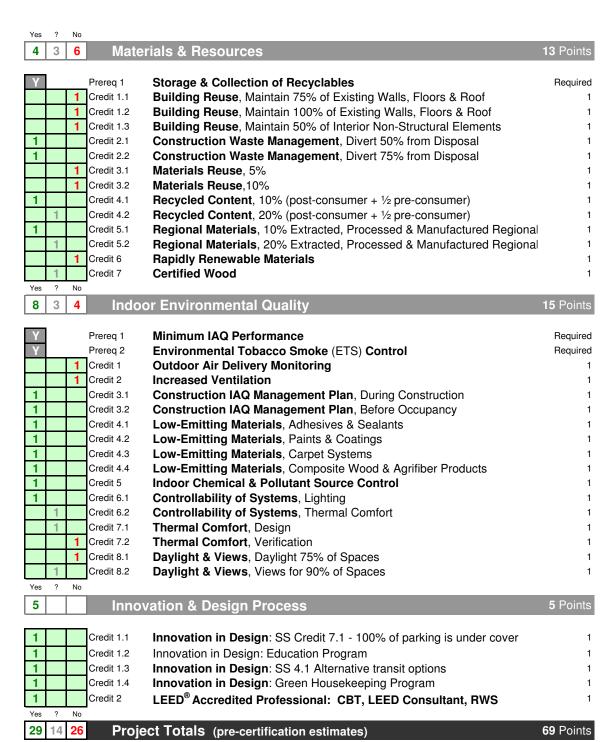
### Appendix D LEED Checklist



### **LEED for New Construction v2.2 Registered Project Checklist**

Project Name: Parcel 1B, The Merano, Boston, Massachusetts Project Address: Boston, Massachusetts

Yes	?	No			
8	2	4	Susta	ainable Sites	14 Points
_					
Y			Prereq 1	Construction Activity Pollution Prevention	Required
1			Credit 1	Site Selection	1
1		4	Credit 2	Development Density & Community Connectivity	1
4		1	Credit 3	Brownfield Redevelopment	1
1			Credit 4.1 Credit 4.2	Alternative Transportation, Public Transportation Access	1
+			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles	1
1			Credit 4.3	Alternative Transportation, Low-Emiling & Puer-Emilient Vehicles  Alternative Transportation, Parking Capacity	1
•		4	Credit 4.4 Credit 5.1	Site Development, Protect or Restore Habitat	1
	1	-	Credit 5.1	Site Development, Maximize Open Space	1
	1		Credit 6.1	Stormwater Design, Quantity Control	1
		1	Credit 6.2	Stormwater Design, Quality Control	1
1		•	Credit 7.1	Heat Island Effect, Non-Roof	1
1			Credit 7.2	Heat Island Effect, Roof	1
•		1	Credit 8	Light Pollution Reduction	1
Yes	?	No	1	ag o	
2	2	1	Wate	r Efficiency	<b>5</b> Points
	_	•	wate	Lindicitely	31 01113
1			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
•	1		Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
	-	1	Credit 2	Innovative Wastewater Technologies	1
1		Ė	Credit 3.1	Water Use Reduction, 20% Reduction	1
•	1		Credit 3.2	Water Use Reduction, 30% Reduction	1
	-			770 1100 1100 1100 1100 1100 1100 1100	
2	4	11	Energ	gy & Atmosphere	17 Points
2	4	11	Ener	gy & Atmosphere	17 Points
2 Y	4	11	Energ	gy & Atmosphere  Fundamental Commissioning of the Building Energy Systems	17 Points Required
2 Y Y	4	11			
2 Y Y Y	4	11	Prereq 1	Fundamental Commissioning of the Building Energy Systems	Required
Y Y Y			Prereq 1 Prereq 2 Prereq 3	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management	Required Required Required
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of	Required Required Required
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points u Optimize Energy Performance	Required Required Required
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points u Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations	Required Required Required under EAc1. 1 to 10
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points u Optimize Energy Performance	Required Required Required under EAc1. 1 to 10
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points u  Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations	Required Required Required under EAc1. 1 to 10
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points u  Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2 3 4
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2 3 4 5
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2 3 4 5 6
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations 31.5% New Buildings or 24.5% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2 3 4 5 6 7
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 All LEED for Ne	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points u Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations 31.5% New Buildings or 24.5% Existing Building Renovations 35% New Buildings or 28% Existing Building Renovations	Required Required under EAc1. 1 to 10 1 2 3 4 5 6 7
Y Y Y		EAc1	Prereq 1 Prereq 2 Prereq 3 : All LEED for Ne Credit 1	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points to Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations 31.5% New Buildings or 24.5% Existing Building Renovations 35% New Buildings or 28% Existing Building Renovations 38.5% New Buildings or 31.5% Existing Building Renovations 42% New Buildings or 35% Existing Building Renovations 0n-Site Renewable Energy	Required Required ander EAc1.  1 to 10  1 2 3 4 5 6 7 8 9
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3 : All LEED for Ne Credit 1	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points to Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations 31.5% New Buildings or 24.5% Existing Building Renovations 35% New Buildings or 28% Existing Building Renovations 38.5% New Buildings or 31.5% Existing Building Renovations 42% New Buildings or 35% Existing Building Renovations	Required Required Index EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3 : All LEED for Ne Credit 1	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points to Optimize Energy Performance  10.5% New Buildings or 3.5% Existing Building Renovations 14% New Buildings or 7% Existing Building Renovations 17.5% New Buildings or 10.5% Existing Building Renovations 21% New Buildings or 14% Existing Building Renovations 24.5% New Buildings or 17.5% Existing Building Renovations 28% New Buildings or 21% Existing Building Renovations 31.5% New Buildings or 24.5% Existing Building Renovations 35% New Buildings or 28% Existing Building Renovations 38.5% New Buildings or 31.5% Existing Building Renovations 42% New Buildings or 35% Existing Building Renovations 00-Site Renewable Energy 2.5% Renewable Energy 7.5% Renewable Energy	Required Required Required under EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10 1 to 3
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3 : All LEED for Ne Credit 1	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Construction projects registered after June 26 <sup>th</sup> , 2007 are required to achieve at least two (2) points of Construction projects of the Construct	Required Required Required Index EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10 1 to 3
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3  : All LEED for Ne Credit 1  Credit 2	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects of Constructions and the Construction projects of Constructions and Construction projects of Construction projects and Construction projects of Construction project	Required Required Required Index EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10 1 to 3
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3 : All LEED for Ne Credit 1	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects of Constructions and the Construction projects of Constructions and Construction projects of Constructions and Construction projects of Con	Required Required Required Required Index EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10 1 to 3 1 2 3
Y Y Y		EAc1 7	Prereq 1 Prereq 2 Prereq 3  : All LEED for Ne Credit 1  Credit 2	Fundamental Commissioning of the Building Energy Systems Minimum Energy Performance Fundamental Refrigerant Management  w Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of the Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points of Construction projects of Constructions and the Construction projects of Constructions and Construction projects of Construction projects and Construction projects of Construction project	Required Required Required Required Index EAc1.  1 to 10  1 2 3 4 5 6 7 8 9 10 1 to 3 1 2 3 1



Certified: 26-32 points, Silver: 33-38 points, Gold: 39-51 points, Platinum: 52-69 points

## Appendix E Survey

