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Connecticut Environmental Impact Evaluation

Prepared pursuant to Regulations of Connecticut State Agencies Section 22a-1a-1 to 12, inclusive

Demolition and Replacement of the Original Parking Garage at Stamford Transportation Center

State Project No. 301-047

Prepared for:

Connecticut Department of Transportation

April 2010

DRAFT

Approved for Circulation:

_____ _____

For Connecticut Department of Transportation *Date*

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A	Project Scoping and Agency Coordination
B	Traffic Impact Analysis Documentation
C	Air Quality Analysis Documentation
D	Hazardous Materials Documentation

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Acronyms and Abbreviations

ACM	Asbestos-Containing Material
ADA	Americans with Disabilities Act
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
AST	Aboveground Storage Tank
C&D Plan	Conservation and Development Policies Plan for Connecticut
CAAA	Clean Air Act Amendments
CCMA	Connecticut Coastal Management Act
CEPA	Connecticut Environmental Policy Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGS	Connecticut General Statutes
CO	Carbon Monoxide
CT	Connecticut
CT RSRs	Connecticut Remediation Standard Regulations
CTDEP	Connecticut Department of Environmental Protection
CTDOT	Connecticut Department of Transportation
CTDPH	Connecticut Department of Public Health
dBA	A-weighted decibels
DEC	Direct Exposure Criteria
EA	Environmental Assessment
ECD	Environmental Classification Document
EIE	Environmental Impact Evaluation
EJ	Environmental Justice
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
HAPs	Hazardous Air Pollutants
HLVs	Hazard Limiting Values
HOV	High Occupancy Vehicle
ITS	Intelligent Transportation System
LMA	Labor Market Area
LOS	Level of Service
LRTP	South Western Region Long Range Transportation Plan
MPO	Metropolitan Planning Organization
MSATs	Mobile Source Air Toxics
MTA	Metropolitan Transit Authority
MTP	Master Transportation Plan
NAAQS	National Ambient Air Quality Standards
NB	Northbound
NESC	National Electrical Safety Code
NJ	New Jersey
NLEV	National Low Emission Vehicle
NO_2	Nitrogen Dioxide

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NRHP	National Register of Historic Places
NY	New York
O_3	Ozone
OLISP	Office of Long Island Sound Programs
OPM	Office of Policy and Management
Pb	Lead
PERD	Permitting, Enforcement, and Remediation Division, DEP
PM_{10}	Particulate Matter 10 microns or smaller in diameter
$PM_{2.5}$	Particulate Matter 2.5 microns or smaller in diameter
ppm	parts per million
PVC	Poly Vinyl Chloride
RBS	Royal Bank of Scotland
RCP	Reinforced Concrete Pipe
RCSA	Regulations of Connecticut State Agencies
Res DEC	Residential Direct Exposure Criteria
RFG	Reformulated Gasoline
RPA	Regional Plan Association
RSR	Remediation Standard Regulations
SB	Southbound
SCEL	Stream Channel Encroachment Line
SIP	State Implementation Plan
SIP	Statewide Implementation Plan
SO_2	Sulfur Dioxide
STC	State Traffic Commission
STIPs	State Transportation Improvement Programs
SUT	Stamford Urban Transitway
SWRMPO	South Western Regional Metropolitan Planning Organization
SWRPA	South Western Regional Planning Agency
TASC	Toxic Air Study in Connecticut
TCDD	Transportation Center Design District
TCMs	Transportation Control measures
TDM	Travel Demand Management
TSB	Transportation Strategy Board
TTAG	Transportation Technical Advisory Group
UST	Underground Storage Tank
VMT	Vehicle Miles Traveled
VOCs	Volatile Organic Compounds
WEED	Waste Engineering and Enforcement Division, DEP

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Executive Summary

Introduction

The Connecticut Department of Transportation (CTDOT) is proposing improvements to the Stamford Transportation Center in Stamford, Connecticut, including demolition of the original multi-level, 720-space parking garage and construction of a new 1,000-space parking garage. The planned improvements, referred to hereafter as the Proposed Action, will be financed with state funds and are subject to the Connecticut Environmental Policy Act (CEPA), which requires the preparation of an Environmental Impact Evaluation (EIE).

This document is an EIE for the Proposed Action pursuant to CEPA. The EIE includes a description of the Proposed Action, the purpose and need for the action, an evaluation of the direct, indirect, and cumulative effects of the Proposed Action, unavoidable adverse environmental affects, evaluation of alternatives, and proposed mitigation measures. CTDOT is the agency responsible for preparation of the EIE under CEPA.

Description of Proposed Action

The Proposed Action is the replacement of the original parking garage at the Stamford Transportation Center in Stamford, Connecticut (*Figure ES-1)*. The garage is a component of the CTDOT Metro-North Station at Stamford, also known as the Stamford Transportation Center. The existing parking complex, which includes the original parking garage that was constructed in 1984 and a parking garage expansion that was constructed in 2002, is located adjacent to and immediately south of the train station, and is accessed from the station by overhead pedestrian bridges as well as surface crosswalks. *Figure ES-2* presents an aerial photograph identifying the original parking garage, the parking garage expansion, and other components of the Stamford Transportation Center.

The Proposed Action includes demolition of the original multi-level, 720-space parking garage and construction of a new 1,000-space parking garage. The new multi-level garage will be located on the state-owned parcel where the existing garage stands and will occupy the same footprint as the existing garage. The Proposed Action also includes salvaging or renovating the pedestrian bridge that connects the garage to the train station. Minor improvements to pedestrian and traffic circulation are also planned for Station Place between the parking garage and the train station.

Providing adequate temporary parking during replacement of the original parking garage is a key objective to ensure that ongoing parking demand will be met and that strong ridership continues throughout construction. During construction, CTDOT will provide temporary parking facilities for commuters affected by the proposed project.

The project construction cost is anticipated to be approximately $35 million, with start of construction in late 2010. The replacement parking garage is scheduled to be open and operational in 2011.

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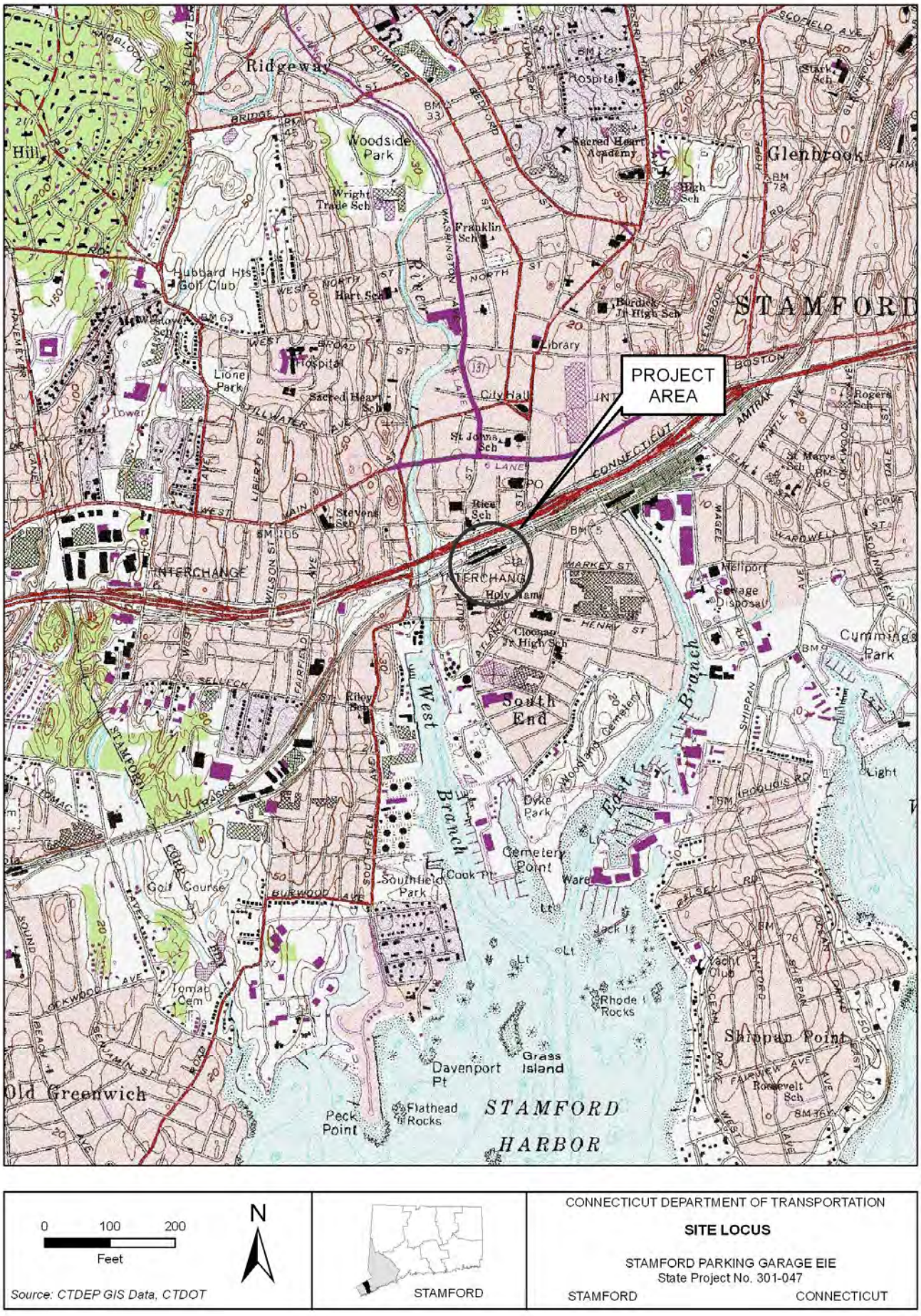

Figure ES-1. Site Locus Map

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Figure ES-2. Existing Conditions and Project Area Map

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Project Background

The Stamford Transportation Center is a major stop on the Metropolitan Transportation Authority (MTA) Metro-North Railroad's New Haven line and is the terminus of CTDOT's Shore Line East commuter rail service. The Stamford Transportation Center is also a stop on the Amtrak Northeast Corridor and is one of the busiest Amtrak stations in Connecticut. Passenger service at or near this location began in 1849.

The original 720-space parking garage was constructed in 1984 and opened in 1985. By 1999, demand for monthly parking exceeded available capacity and the waiting list for monthly parking privileges was greater than 1,000. In response to the high demand for increased parking, CTDOT constructed a seven-floor garage expansion in 2002, which is attached to the original garage and opened for service in 2003. The parking garage expansion contains approximately 1,100 parking spaces.

Growth in rail ridership at the Stamford Transportation Center has resulted in a high level of demand for parking. Despite ongoing local and regional efforts to improve public transit options to the Stamford Transportation Center, demand for passenger vehicle parking at the station remains strong. Data provided by CTDOT indicate that, as of July 15, 2009, the waiting list for monthly parking privileges at the garage numbered 957 individuals. Adequate parking is necessary to ensure that railway options remain available for commuters and travelers who must drive to the station.

The condition of the original parking garage has also been a concern since the original construction. During construction in 1984, design deficiencies were discovered and construction was halted prior to completion. The deficiencies were corrected by constructing additional concrete posts, columns, and shear walls, and adding steel bracing at the ends of beams (Desman Associates, 2006). No major remedial work has been performed since these modifications were implemented.

Condition assessments of the garage that were performed in 1996 and 2006 found degradation of the some of the original garage structure's concrete and reinforcing components. In addition, non-structural deficiencies were evident in 2006. Fire standpipes, fresh air ducting, and the drainage system do not meet current requirements and require upgrading (Desman Associates, 2006).

Purpose and Need

The purpose of the Proposed Action is to meet current and anticipated future high demand for parking at the Stamford Transportation Center. This is consistent with CTDOT's continuing commitment to meet demand for transit-oriented facilities along the Connecticut coast. The Stamford Transportation Center is an important transportation hub, with the second highest Amtrak ridership in Connecticut (Amtrak, 2008) and the highest ridership on MTA's Metro-North line (MTA, 2007).

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The need for the Proposed Action is due to current and anticipated demand for parking at the Stamford Transportation Center and the current poor condition of the original garage constructed in 1984. As such, the objectives of the Proposed Action are: (1) to maintain parking at the Stamford Transportation Center at the current level or higher for the long term and (2) to address the structural and non-structural deficiencies of the original parking garage. Comparing the relative costs and design life of replacement versus rehabilitation, CTDOT has decided to replace the original parking garage since it is a more cost-effective option. Additionally, replacement of the garage affords the opportunity to provide additional parking spaces, by replacing the 720 spaces in the original garage with approximately 1,000 new spaces.

Alternatives Considered

The project purpose is to meet current and anticipated future high demand for parking at the Stamford Transportation Center and to address the structural and non-structural deficiencies of the original parking garage. Several alternatives that potentially achieve this project purpose are considered in this EIE. These alternatives include:

- No-Action Alternative (baseline, required under CEPA)
- Replacement Alternative (Proposed Action)
- Repair Alternative
- Alternative Temporary Parking Locations

Alternatives for providing temporary parking during construction are also considered for the Replacement Alternative (i.e., replacement of the original portion of the parking garage in its current footprint). Each of the alternatives considered assumes the continued use of the garage expansion that was constructed in 2002.

No-Action Alternative

Under the No-Action Alternative, current operations at the Stamford Transportation Center parking garage would remain unchanged. Ongoing, routine maintenance of the parking garage would continue, including minor repairs and improvements. Major structural repairs, rehabilitation, or other work requiring significant allocation of state funds would not be performed. Under the No-Action Alternative, structural components of the original parking garage would continue to deteriorate. The No-Action Alternative therefore assumes that the original portion of the parking garage would eventually become unsafe for use and would be closed. The garage expansion that opened in 2003 would remain in service.

The No-Action Alternative would result in the eventual closure of the original portion of the parking garage and the loss of approximately 720 parking spaces. The No-Action Alternative would not address the structural and non-structural deficiencies of the original parking garage or the anticipated future high demand for parking at the Stamford Transportation Center. Although this alternative would involve no new construction and no significant environmental impacts, it would not meet the project purpose and need.

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Replacement Alternative (Proposed Action)

The Replacement Alternative, which is the Proposed Action in this EIE, includes demolition of the original portion of the existing parking garage at the Stamford Transportation Center and construction of a new, replacement parking garage within the same footprint. The portion of the structure to be demolished contains 720 parking spaces, and the replacement structure will contain approximately 1,000 spaces, which will help to meet the demand for additional parking at the Stamford Transportation Center. The Replacement Alternative also includes salvaging or renovating the pedestrian bridge that connects the garage to the train station. Minor improvements to pedestrian and traffic circulation are also planned for Station Place between the parking garage and the train station. The Replacement Alternative is estimated to cost approximately $35 million, with a life expectancy of 40 to 50 years.

Providing adequate temporary parking during replacement of the original parking garage is a key objective to ensure that ongoing parking demand will be met and that strong ridership continues throughout construction. During construction, CTDOT will provide temporary parking facilities for commuters affected by the proposed project.

Repair Alternative

This alternative includes repair of deficiencies in the original portion of the parking garage structure, rather than demolition and replacement of the structure. As described in the 2006 condition assessment report by Desman Associates, the recommended repairs to sustain the use of the existing garage include substantial slab repairs, installation of a waterproof membrane on the slab, relining of the entire garage, reinstallation of bollards and expansion joints, repair of underside deterioration (spalls and cracks), and repair of other parking garage components. Repairs could be phased in a manner to limit the impact on parking during construction to 20% to 25% of total capacity, with the remainder being operational throughout construction. The Repair Alternative would extend the life expectancy of the garage by 10 to 15 years, at an approximate cost of $35 million. The estimated cost of the Repair Alternative is similar to that of the Replacement Alternative. However, the life expectancy of the Replacement Alternative is significantly longer than the Repair Alternative and therefore more cost-effective.

Alternative Temporary Parking Locations

To offset the temporary loss of parking at the Stamford Transportation Center, the CTDOT, in coordination with the operator of the parking garage, the City of Stamford Planning Department, and the South Western Regional Planning Agency, has identified and evaluated alternative locations to provide temporary parking during construction of the replacement garage. These locations consist of existing surface lots and parking garages near the Stamford Transportation Center and include:

- Alternative 1: State-Owned South State Street Lot
- Alternative 2: Vacant Lot at 650 Atlantic Street
- Alternative 3: Metro Center Parking Garage
- Alternative 4: Building Land Technologies Lot
- Alternative 5: Surface Lot on Walter Wheeler Drive

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- Alternative 6: 400 Atlantic Street Garage
- Alternative 7: City of Stamford Surface Lot
- Alternative 8: City of Stamford Garage
- Alternative 9: RFR Realty Garage
- Alternative 10: Public Pro-Park Garage East of Canal Street

The above locations, which are presented in *Figure ES-3*, were evaluated based upon a variety of factors to determine the most feasible alternatives. The primary factors include current utilization, pedestrian access, distance from the Stamford Transportation Center, and availability for public access. Three other alternative sites were considered for temporary parking: (1) a property that was acquired by the City of Stamford for the Mill River Greenway on the west side of Washington Boulevard, between Park Place West and Whittaker Place, (2) the existing parking garage at the University of Connecticut-Stamford campus, and (3) the recently constructed Royal Bank of Scotland (RBS) building and parking garage. These sites were eliminated from further consideration due to required infrastructure improvements, existing structural/safety issues, or and lack of available reserve parking capacity.

Alternatives 4, 5 and 6 are considered the most feasible temporary parking alternatives. Collectively, these alternatives can provide sufficient parking capacity to replace 500 of the parking spaces that will be lost at the Stamford Transportation Center during construction of a replacement garage. The under-utilized top floor of the 2002 parking garage expansion may serve the remaining parking demand during construction. Should additional capacity be required to replace the full 720 lost parking spaces, consideration should be given to alternatives 9 or 10 as overflow parking when all other lots are full.

A shuttle loop is recommended between the alternative 4 and 5 locations and the Stamford Transportation Center to minimize travel time and walking distances. Should overflow parking be required under alternatives 9 or 10, a shuttle should also be provided at those locations.

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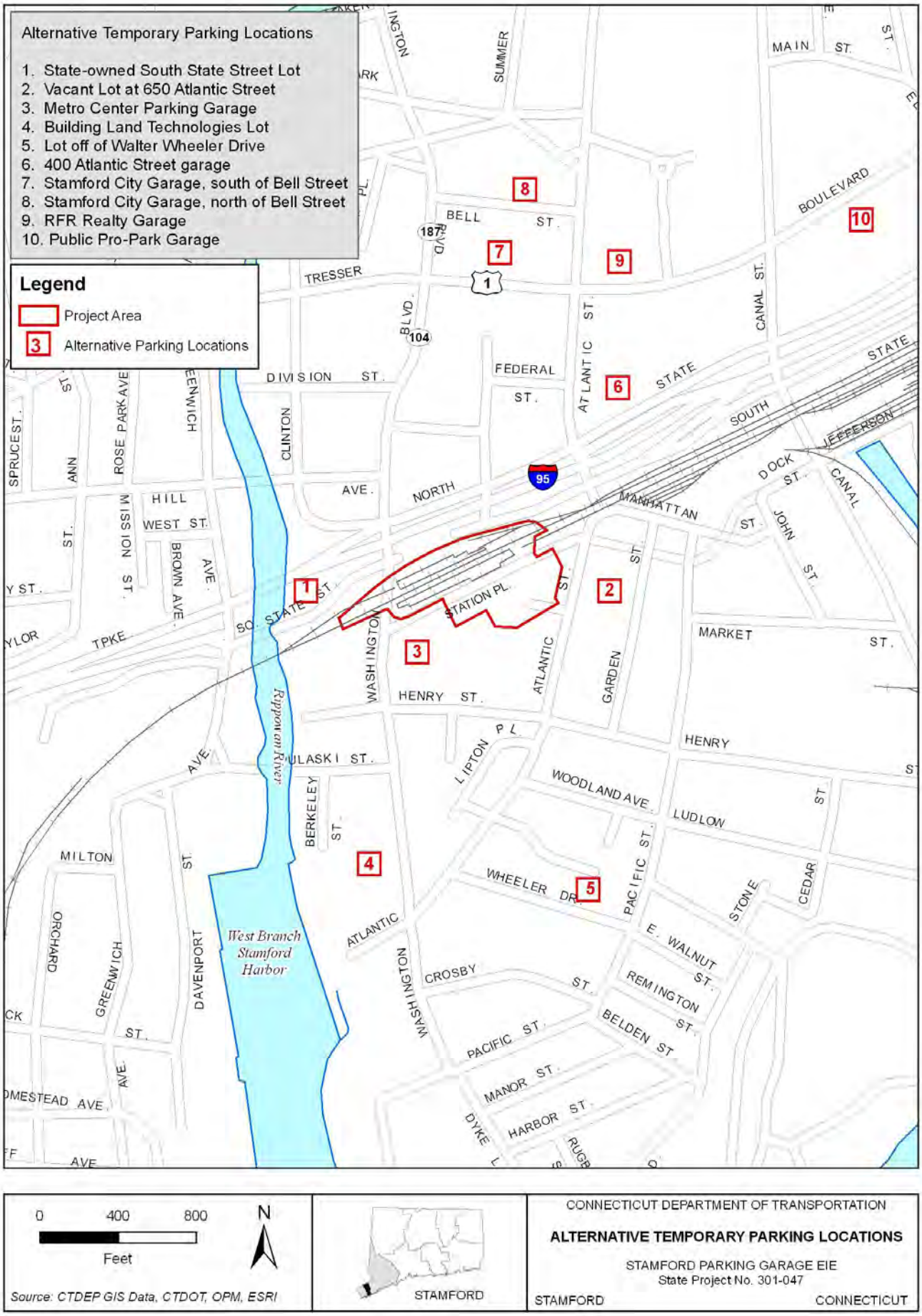

Figure ES-3. Alternative Temporary Parking Location

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Summary of Impacts and Mitigation

The Proposed Action will have minor adverse environmental impacts as compared to the baseline condition (No-Action). These impacts are primarily associated with the project construction and will be mitigated through measures presented in the EIE. Environmental impacts and proposed mitigation measures are presented in *Table ES-1*.

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Land Use, Zoning, and Local and Regional Development Plans	• Proposed Action is consistent with land use, zoning and local/regional development plans	• None required
Consistency with State and Regional Plans	• Proposed Action is consistent with state and regional plans	• None required
Traffic and Parking	• No adverse impacts. Net increase of 280 parking spaces over existing conditions.	• None required
Considerations Relating to Pedestrians and Bicyclists	• No adverse impacts	• None required
Considerations Relating to Local Transit	• No adverse impacts	• None required
Air Quality	• No adverse impacts	• None required
Noise	• No adverse impacts	• None required
Socioeconomic Resources	• No adverse impacts	• None required
Water Quality	• Minor increases in pollutant loading to stormwater from additional parking decks and vehicle trips	• Separate stormwater discharges from the roof deck, which will be greater in quantity and lower in pollutant levels, from drainage from the lower floors, which is likely to be higher in pollutant concentrations. Treat each of the separated discharges for the anticipated pollutant of concern, including sediment from the roof deck, and oil and grease from the lower decks. Discharge the former to the storm sewer and the latter to the sanitary sewer.

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Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Hydrology and Floodplains	• Delay in peak discharges, if any, resulting from stormwater treatment could cause site discharges to coincide with discharges from the larger watershed. • Changes in apportionment of stormwater discharges between drainage areas could cause increased peak discharges in a local drainage system	• Evaluate need for and potential effects of peak flow attenuation during design and permitting • Apportion stormwater according to existing drainage patterns or demonstrate that adequate stormwater system capacity is available in the receiving drainage systems • Document findings in Flood Management Certification to be filed with CTDEP
Wetlands	• No impacts	• None required
Coastal Resources	• Proposed Action is consistent with coastal management policies	• None required
Flora, Fauna, Threatened and Endangered Species	• No impacts	• None required
Soils and Geology	• No impacts	• None required
Cultural Resources	• No impacts	• None required
Solid Waste, Toxics, Pesticides, and Hazardous Materials	• No adverse impacts	• None required
Aesthetics/Visual Effects	• No adverse impacts	• None required
Energy Use and Conservation	• Proposed Action includes additional parking which will allow for more vehicle trips. • Project Action includes construction of a larger structure which will require more energy consuming products compared to the original portion of the existing structure	• Additional parking will encourage transit usage and decrease vehicle miles travelled on regional roadways • Replacement structure will meet high performance construction standards for state-owned buildings, which will require structure to consume less energy than current Connecticut State Building Code or ASHRAE standards
Public Utilities and Services	• Minor increases in potable water demand may occur for washdown of additional parking decks. • Minor increases in sewer discharges may occur from lower deck drainage	• Deck washdown discharges will be properly permitted, and floor drainage discharged to the sewer will be treated in an oil/water separator

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Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Public Health and Safety	• No adverse impacts	• None required
Demolition and Construction Period Impacts		
Traffic	• Potential temporary closure of Station Place Eastbound • Loss of two entrance/exit access points and one exit-only point to the parking structure during construction • Temporary disruption of Intelligent Transportation System components, if installed prior to construction • Temporary increases in delay surrounding the garage and surrounding alternative temporary parking areas	• Provide temporary additional pay stations at the Atlantic Street driveway location, or temporarily modify other entrances to the structure during the construction period to accommodate entrances and exits • Implement a Traffic Management Plan to maintain efficient traffic circulation, including construction phasing, establishing haul routes and staging areas, permissible work ours, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other controls to direct traffic • Replace affected ITS components
Parking	• Temporary loss of 720 parking spaces in the existing structure • Temporary loss of 34 ADA spaces within the existing structure	• Provide temporary alternative parking at nearby off-site locations to accommodate lost standard parking spaces • Provide temporary ADA parking locations within the expansion portion of the garage structure • Provide shuttle service to alternative off-site parking locations • Provide signage to indicate the location and availability of off-site parking
Considerations Relating to Pedestrians and Bicyclists	• Loss of western pedestrian overpass from the original portion of the garage	• Provide alternative pedestrian routes in a Traffic Management Plan • Replace pedestrian overpass following construction
Conditions Relating to Local Transit	• Minor delay during construction due to congestion caused by construction and closures	• Implement a Traffic Management Plan to maintain efficient traffic circulation, including construction phasing, establishing haul routes and staging areas, permissible work ours, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other controls to direct traffic
Air Quality	• Emissions from construction equipment • Increased vehicle exhaust emissions resulting from increased congestion during construction • Fugitive dust emissions during demolition and construction activities	• Ensure proper operation and maintenance of construction equipment • Prohibit excessive idling of construction equipment • Consider requiring use of clean alternative fuels or retrofit emission control devices for heavy machinery with engines of greater than 60 horsepower that will be assigned to the project for greater than 30 consecutive days • Implement traffic management measures during construction • Implement appropriate controls to prevent the generation and mobilization of dust

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Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Noise	• Generation of noise by construction equipment and activities	• Contract specifications to ensure that noise levels at adjacent residences remain at less than 90 dBA • Restriction of work to 7:00 am to 9:00 pm local time • Properly maintain construction equipment • Provide advance notification to sensitive receptors regarding anticipated excessive noise levels
Community Resources	• No impacts	• None required
Stormwater and Water Quality	• Exposure of soil increases potential for erosion and sedimentation	• Prepare Stormwater Pollution Control Plan that complies with the *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities,* compliance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*
Solid Waste, Toxics, Pesticides, and Hazardous Materials	• Contaminated soils may be encountered and disturbed during construction • Structure to be demolished may contain regulated materials • Generation of a significant quantity of construction and demolition debris • Usage of hazardous or toxic construction materials	• Remediate contaminated soils as required • Develop soil management plan and follow applicable regulations and best management practices regarding the management and disposal of contaminated soils, including the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). • Perform pre-demolition surveys for ACM and other regulated materials and follow appropriate reporting, management, and disposal requirements • Segregate recyclable construction and demolition debris to the extent possible. Dispose the remainder at a licensed solid waste disposal facility. • Use potentially hazardous or toxic materials following applicable best management practices, regulatory requirements, and manufacturer recommendations
Safety	• Potential for impacts to workers and the public since the project will occur in a busy, dense urban area	• Implement measures to ensure safety of workers, pedestrians, and the public, including: backup alarms, providing police details, safety cones and barrels, appropriate alternative routes, a continuous accessible path of travel, maintaining ADA curb ramps, ensure that people with impairments can detect and avoid construction, and provide scaffolding canopies to protect pedestrians from falling objects
Utilities	• Temporary outages may be necessary to accommodate connections • Utilities could be damaged accidentally	• Coordinate planned outages with the appropriate utility to minimize disruptions • Inform the public of anticipated outages • Relocate, maintain, or protect utilities from disturbance or damage • Adjust street hardware to meet finished grades

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Potential Certificates, Permits, and Approvals

The following certificates, permits, and approvals may be required for the construction and operational phases of the Proposed Action. This list will be refined during the project design phase.

Federal

- None anticipated

State

- CTDEP – OLISP Coastal Zone Consistency Concurrence
- CTDEP – Flood Management Certification
- CTDEP – General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities
- CTDEP – General Permit for Contaminated Soil and/or Sediment Management
- CTDEP – General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater
- CTDEP – Special Waste or Asbestos Disposal Authorization
- CTDEP – Major Traffic Generator Certificate

Conclusion

The Proposed Action will address the existing structural and non-structural deficiencies of the original parking garage, as well as the current and future high demand for parking at the Stamford Transportation Center. The project is consistent with the CTDOT's continuing commitment to meet demand for transit-oriented facilities along the Connecticut coast and to support the Transit Oriented Development initiatives in the City of Stamford.

Potential adverse impacts from the Proposed Action are primarily associated with the construction-phase of the project, including potential impacts to traffic, parking, air quality, stormwater and water quality, hazardous materials, and utilities. These impacts will be offset or reduced through the construction-period mitigation measures presented in this EIE.

Comments received during the public review period for the EIE will be considered in making a final decision on the Proposed Action.

Public Participation and Agency Coordination

A Notice of Scoping for the Proposed Action was published in the Council on Environmental Quality (CEQ) *Environmental Monitor* on June 3, 2008 (presented in *Appendix A*). Comments were received from the Connecticut Department of Environmental Protection on July 3, 2008

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(also included in *Appendix A*). No scoping meeting was held as fewer than 25 responses from the Public were received requesting a scoping meeting. During data collection efforts for the preparation of the EIE, federal and state resource agencies were contacted for information, as were local officials from the City of Stamford and staff from the regional planning agency.

A public hearing is scheduled for [DATE] at [TIME] at [LOCATION/ADDRESS].

An informational meeting will be held with the South End Neighborhood Revitalization Zone Initiative (South End NRZ) during the public review period for the EIE.

EIE Distribution List

The following state and local agencies and offices will receive a copy of this EIE for review and for availability by the public:

- State Representatives and Senators
- Mayor, City of Stamford
- City Engineer, City of Stamford
- Director of Planning and Zoning, City of Stamford
- Town Clerk, City of Stamford
- Connecticut Department of Environmental Protection
- Connecticut Department of Public Health
- Council on Environmental Quality
- Connecticut Department of Public Works
- Connecticut Office of Policy and Management
- Connecticut Commission on Culture and Tourism/State Historic Preservation Office
- Connecticut State Traffic Commission
- Connecticut State Library
- Connecticut Department of Transportation, Office of Communications
- Stamford Public Library (Ferguson Library)

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1 Introduction

The Connecticut Department of Transportation (CTDOT) is proposing improvements to the Stamford Transportation Center in Stamford, Connecticut, including demolition of the original multi-level, 720-space parking garage and construction of a new 1,000-space parking garage. The planned improvements, referred to hereafter as the Proposed Action, will be financed with state funds and are subject to the Connecticut Environmental Policy Act (CEPA) (Connecticut General Statutes [CGS] Sections 22a-1 through 22a-1h, inclusive, and where applicable, CEPA regulations Section 22a-la-1 through 22a-la-12, inclusive, of the Regulations of Connecticut State Agencies [RCSA]). In addition, the construction of State-owned parking lots, garages or additions thereto, which provide for a capacity of 200 vehicles or more, are identified in the CTDOT Environmental Classification Document (ECD) as an action which may have a significant environmental impact and requires the preparation of an Environmental Impact Evaluation (EIE).

This document is an EIE for the Proposed Action pursuant to CEPA. The EIE includes a description of the Proposed Action, the purpose and need for the action, an evaluation of the direct, indirect, and cumulative effects of the Proposed Action, unavoidable adverse environmental affects, evaluation of alternatives, and proposed mitigation measures. CTDOT is the agency responsible for preparation of the EIE under CEPA.

1.1 Description of Proposed Action

The Proposed Action is the replacement of the original parking garage at the Stamford Transportation Center in Stamford, Connecticut (*Figure 1-1)*. The garage is a component of the CTDOT Metro-North Station at Stamford, also known as the Stamford Transportation Center. The existing parking complex, which includes the original parking garage that was constructed in 1984 and a parking garage expansion that was constructed in 2002, is located adjacent to and immediately south of the train station, and is accessed from the station by overhead pedestrian bridges as well as surface crosswalks. *Figure 1-2* presents an aerial photograph identifying the original parking garage, the parking garage expansion, and other components of the Stamford Transportation Center.

The Proposed Action includes demolition of the original multi-level, 720-space, parking garage and construction of a new 1,000-space parking garage. The new multi-level garage will be located on the state-owned parcel where the existing garage stands and will occupy the same footprint as the existing garage. The Proposed Action also includes salvaging or renovating the pedestrian bridge that connects the garage to the train station. Minor improvements to pedestrian and traffic circulation are also planned for Station Place between the parking garage and the train station.

Providing adequate temporary parking during replacement of the original parking garage is a key objective to ensure that ongoing parking demand will be met and that strong ridership continues throughout construction. During construction, CTDOT will provide temporary parking facilities for commuters affected by the proposed project.

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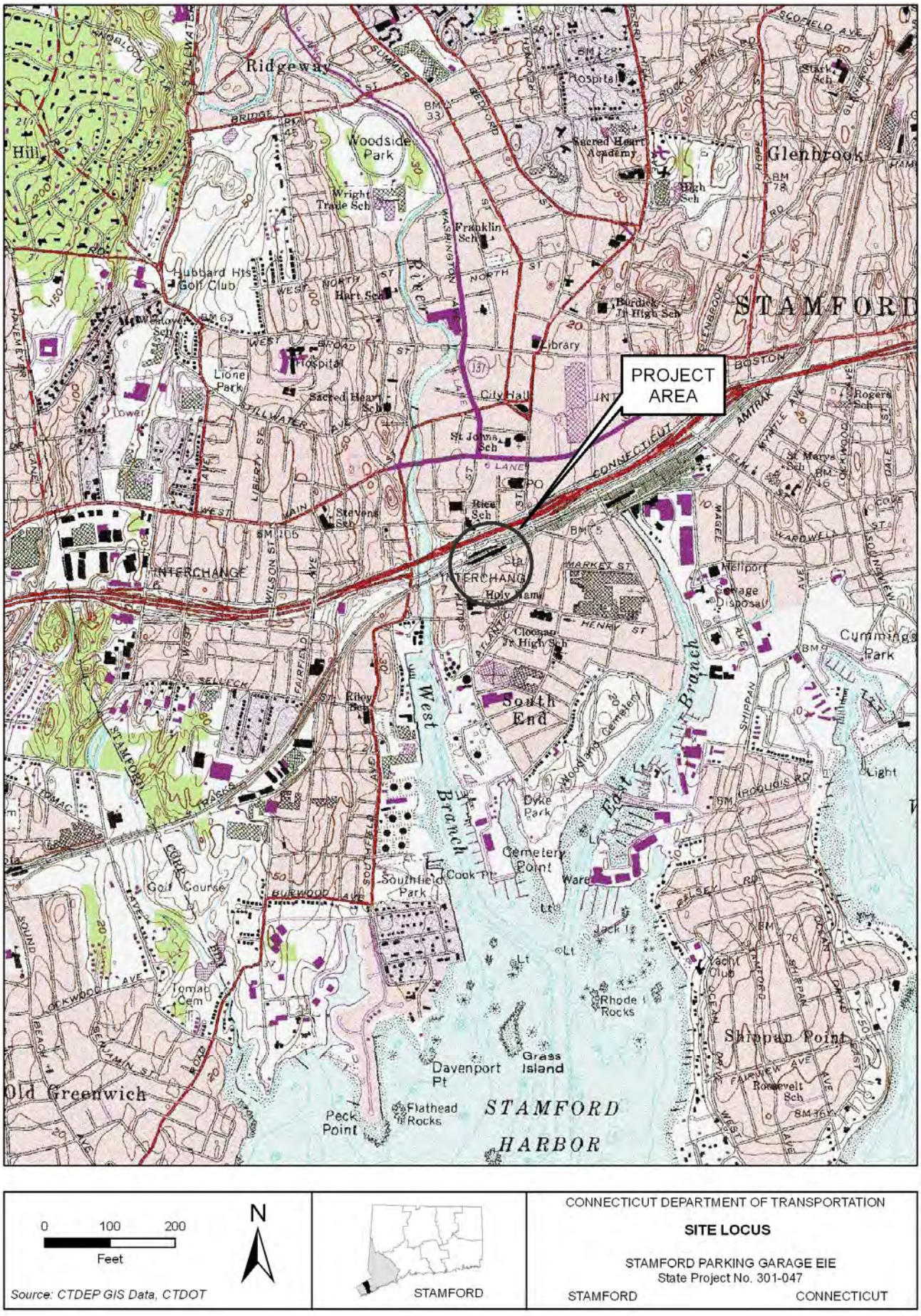

Figure 1-1. Site Locus Map

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Figure 1-2. Existing Conditions and Project Area Map

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The cost associated with project design and construction is anticipated to be approximately $39 million, with start of construction in late 2010. The replacement parking garage is scheduled to be open and operational in 2011.

1.2 Project Background

The Stamford Transportation Center is a major stop on the Metropolitan Transportation Authority (MTA) Metro-North Railroad's New Haven line and is the terminus of CTDOT's Shore Line East commuter rail service. The Stamford Transportation Center is also a stop on the Amtrak Northeast Corridor and is one of the busiest Amtrak stations in Connecticut. Passenger service at or near this location began in 1849.

The original garage, which is proposed for replacement, is a five-floor cast in-place reinforced concrete parking structure containing 720 parking spaces and with a footprint measuring approximately 440 feet by 117 feet, with the long axis oriented northeast-southwest. Each level is approximately 50,000 square feet in area. The bottom floor is used for entry and access to other floors while also containing parking. The original parking garage was constructed in 1984 and opened in 1985. The original garage is attached to a parking garage expansion that was constructed in late 2002 and opened in 2003. The parking garage expansion contains approximately 1,100 parking spaces.

The garage complex, including the original garage and the expansion area, includes entrances from Atlantic Street to the east and Station Place to the north. It is easily accessed from Interstate 95 via nearby exits. In addition, the City of Stamford is constructing a major urban transitway to improve public transit access to the Stamford Transportation Center.

CTDOT is proposing to demolish and replace the original parking garage at the Stamford Transportation Center. The portion of the garage proposed for replacement was originally constructed in 1984. By 1999, demand for monthly parking exceeded available capacity and the waiting list for monthly parking privileges was greater than 1,000. In response to the high demand for increased parking, CTDOT proposed an expansion of the original garage. An Environmental Assessment/Finding of No Significant Impact (EA/FONSI) under CEPA for construction of an expansion to the existing garage was prepared in 1999. In 2002, a seven-floor garage expansion was constructed, and opened for service in 2003.

Although the expanded garage complex provided increased parking capacity, the condition of the original parking garage has been a concern since its construction. During construction in 1984, design deficiencies were discovered and construction was halted prior to completion. The deficiencies were corrected by constructing additional concrete posts, columns, and shear walls, and adding steel bracing at the ends of beams (Desman Associates, 2006). No major remedial work has been performed since these modifications were implemented.

Condition assessments of the garage that were performed in 1996 and 2006 found degradation of the some of the original garage structure's concrete and reinforcing components. In addition, non-structural deficiencies were evident in 2006. Fire standpipes, fresh air ducting, and the drainage system do not meet current requirements and require upgrading (Desman Associates, 2006).

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1.3 Purpose and Need

The purpose of the Proposed Action is to meet current and anticipated future high demand for parking at the Stamford Transportation Center. This is consistent with CTDOT's continuing commitment to meet demand for transit-oriented facilities along the Connecticut coast. The Stamford Transportation Center is an important transportation hub, with the second highest Amtrak ridership in Connecticut (Amtrak, 2008) and the highest ridership on MTA's Metro-North line (MTA, 2007).

The need for the Proposed Action is due to current and anticipated demand for parking at the Stamford Transportation Center and the current poor condition of the original garage constructed in 1984. Consequently, the objectives of the Proposed Action are: (1) to maintain parking at the Stamford Transportation Center at the current level or higher for the long term and (2) to address the structural and non-structural deficiencies of the original parking garage. Comparing the relative costs and design life of replacement versus rehabilitation, CTDOT has decided to replace the original parking garage since it is a more cost-effective option. Additionally, replacement of the garage affords the opportunity to provide additional parking spaces, by replacing the 720 spaces in the original garage with approximately 1,000 new spaces.

1.3.1 Parking Demand

Ridership at the Stamford Transportation Center has grown over the past decade. Daily Metro-North rail ridership at the station was 6,100 passengers per day (weekday inbound boardings) in 2001 (New Haven City Plan Department, 2002). In 2008, data provided by CTDOT indicate that there were 7,970 weekday inbound station boardings at Stamford, an increase of 31% since 2001. Additionally, Amtrak ridership at the station increased from 188,478 boardings and alightings in 1998 (New Haven City Plan Department, 2002) to 368,918 boardings and alightings in 2008 (Amtrak, 2008), an increase of approximately 100% over this 10-year period. In addition, the Shore Line East railroad, which was re-established in 1990, provides limited service to the station.

Growth in rail ridership at the Stamford Transportation Center has resulted in a high level of demand for parking. Despite ongoing local and regional efforts to improve public transit options to the Stamford Transportation Center, demand for passenger vehicle parking at the station remains strong. Data provided by CTDOT indicates that, as of July 15, 2009, the waiting list for monthly parking privileges at the garage numbered 957 individuals. Adequate parking is necessary to ensure that railway options remain available for commuters and travelers who must drive to the station.

The station, which is located adjacent to an Interstate 95 exit, provides convenient parking for travelers desiring rail service. In the *Congestion Mitigation System Plan – Vision 2020* (February 2003), the South Western Regional Planning Agency recommended adding parking to rail stations with highway access, and limiting parking at community stations. At the time of the writing of the Plan, the Stamford Transportation Center garage expansion was underway but the Plan stated that the quantity of parking being constructed would not be adequate to meet

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demand. Since 2003, increasing ridership and the long waiting list for monthly parking privileges continues to underscore the need for additional parking.

1.3.2 Garage Condition

In 1996, a condition assessment report of the original parking garage prepared by LZA Group (as reported by Desman Associates, 2006) found spalling, cracking, rust staining, and efflorescence throughout the structure, indicated degradation of some of the structure's concrete and reinforcing components. Testing performed during the assessment found the garage to be constructed of poor quality concrete that is more porous than typical, allowing water and chloride to penetrate, causing corrosion to reinforcing steel. A second assessment prepared by CTDOT in 2002 found increased occurrences of these deficiencies. CTDOT planned a rehabilitation of the original parking structure as part of the garage expansion project, but this rehabilitation was not performed since the original garage was structurally sound and serviceable, and the rehabilitation cost exceeded the funds available at that time.

In the most recent condition assessment report for the original garage, Desman Associates (2006) found "significant areas of scaling, delamination and spalling of the deck." Delamination repairs were required on approximately 85,000 square feet of deck at that time, not including spall repairs required on the underside of beams. The depth of concrete cover available over steel reinforcing was found to be ¾-inch as designed or less in some areas. Incidence of cracking appeared to have increased, and corrosion products were found to be emanating from within structural concrete components, indicating penetration of moisture. Expansion joints and construction joints that were previously replaced are again in need of replacement. The garage was also found to have non-structural deficiencies. Fire standpipes, fresh air ducting, and the drainage system do not meet current requirements and require upgrading.

In the 2006 report, Desman Associates outlined the required repairs and potential repair methods and costs. Although repairing the structure would extend its life expectancy, with expedited implementation of repairs and proper continued maintenance, the structure will continue to be serviceable for 10 to 15 years. By comparison, Desman Associates estimated that the cost of rehabilitation is comparable to the cost of replacement, with the anticipated design life of a new replacement structure estimated at 40 to 50 years.

1.4 Public Participation and Agency Coordination

A Notice of Scoping for the Proposed Action was published in the Council on Environmental Quality (CEQ) *Environmental Monitor* on June 3, 2008 (presented in *Appendix A*). Comments were received from the Connecticut Department of Environmental Protection (CTDEP) on July 3, 2008 (also included in *Appendix A*). No scoping meeting was held as fewer than 25 responses from the Public were received requesting a scoping meeting. During data collection efforts for the preparation of the EIE, federal and state resource agencies were contacted for information, as were local officials from the City of Stamford and staff from the regional planning agency.

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2 Alternatives Considered

The project purpose is to meet current and anticipated future high demand for parking at the Stamford Transportation Center and to address the structural and non-structural deficiencies of the original parking garage. Several alternatives that potentially achieve this project purpose are considered in this EIE. These alternatives include:

- No-Action Alternative (baseline, required under CEPA)
- Replacement Alternative (Proposed Action)
- Repair Alternative
- Alternative Sites (sites that are controlled or reasonably available)
- Alternative Designs

Alternatives for providing temporary parking during construction are also considered for the Replacement Alternative (i.e., replacement of the original portion of the parking garage in its current footprint). Each of the alternatives considered assumes the continued use of the garage expansion that was constructed in 2002.

2.1 No-Action Alternative

Under the No-Action Alternative, current operations at the Stamford Transportation Center parking garage would remain unchanged. Ongoing, routine maintenance of the parking garage would continue, including minor repairs and improvements. Major structural repairs, rehabilitation, or other work requiring significant allocation of state funds would not be performed. Under the No-Action Alternative, structural components of the original parking garage would continue to deteriorate. Even with expedited repairs and continued maintenance that was recommended in the 2006 condition assessment report by Desman Associates, the life expectancy of the original portion of the parking garage was estimated at 10 to 15 years. The No-Action Alternative therefore assumes that the original portion of the parking garage would eventually become unsafe for use and would be closed. The garage expansion that opened in 2003 would remain in service. [For the purposes of assessing baseline impacts in this EIE under the No-Action Alternative, it is assumed that the original portion of the parking garage will continue to operate through the future conditions build year (2029).]

The No-Action Alternative would result in the eventual closure of the original portion of the parking garage and the loss of approximately 720 parking spaces. The No-Action Alternative would not address the structural and non-structural deficiencies of the original parking garage or the anticipated future high demand for parking at the Stamford Transportation Center. Although this alternative would involve no new construction and no significant environmental impacts, it would not meet the project purpose and need.

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2.2 Replacement Alternative – Proposed Action

The Replacement Alternative, which is the Proposed Action in this EIE, includes demolition of the original portion of the existing parking garage at the Stamford Transportation Center and construction of a new, replacement parking garage within the same footprint. The portion of the structure to be demolished contains 720 parking spaces, and the replacement structure will contain approximately 1,000 spaces, which will help to meet the demand for additional parking at the Stamford Transportation Center. The Replacement Alternative also includes salvaging or renovating the pedestrian bridge that connects the garage to the train station. Minor improvements to pedestrian and traffic circulation are also planned for Station Place between the parking garage and the train station. The Replacement Alternative is estimated to cost approximately $39 million, with a life expectancy of 40 to 50 years.

Providing adequate temporary parking during replacement of the original parking garage is a key objective to ensure that ongoing parking demand will be met and that strong ridership continues throughout construction. During construction, CTDOT will provide temporary parking facilities for commuters affected by the proposed project. Several alternatives have been considered to offset the temporary loss of parking during construction. An analysis of these temporary parking alternatives and associated recommendations are described in *Section 2.4.2*.

2.3 Repair Alternative

This alternative includes repair of deficiencies in the original portion of the parking garage structure, rather than demolition and replacement of the structure. As described in the 2006 condition assessment report by Desman Associates, the recommended repairs to sustain the use of the existing garage include substantial slab repairs, installation of a waterproof membrane on the slab, relining of the entire garage, reinstallation of bollards and expansion joints, repair of underside deterioration (spalls and cracks), and repair of other parking garage components. Repairs could be phased in a manner to limit the impact on parking during construction to 20% to 25% of total capacity, with the remainder being operational throughout construction. The Repair Alternative would extend the life expectancy of the garage by 10 to 15 years, at an approximate cost of $35 million. The estimated cost of the Repair Alternative is similar in magnitude to that of the Replacement Alternative. However, the life expectancy of the Replacement Alternative is significantly longer than the Repair Alternative and therefore more cost-effective.

2.4 Alternative Sites

The following sections discuss alternative sites that are controlled or reasonably available to meet the current and anticipated demand for parking at the Stamford Transportation Center, including alternative permanent off-site garage locations and alternative temporary parking locations during the construction of a replacement parking garage.

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2.4.1 Alternative Garage Locations

To be completed based on design information to be provided by CTDOT (i.e., potential public-private partnership).

2.4.2 Alternative Temporary Parking Locations

Under the Proposed Action, a total of 720 parking spaces provided by the original portion of the parking garage will be temporarily lost during construction of the replacement garage. To offset the temporary loss of parking at the Stamford Transportation Center, the CTDOT, in coordination with the operator of the parking garage, the City of Stamford Planning Department, and the South Western Regional Planning Agency, has identified and evaluated alternative locations to provide temporary parking during construction of the replacement garage. These locations consist of existing surface lots and parking garages near the Stamford Transportation Center and include:

- Alternative 1: State-Owned South State Street Lot
- Alternative 2: Vacant Lot at 650 Atlantic Street
- Alternative 3: Metro Center Parking Garage
- Alternative 4: Building Land Technologies Lot
- Alternative 5: Surface Lot on Walter Wheeler Drive
- Alternative 6: 400 Atlantic Street Garage
- Alternative 7: City of Stamford Surface Lot
- Alternative 8: City of Stamford Garage
- Alternative 9: RFR Realty Garage
- Alternative 10: Public Pro-Park Garage East of Canal Street

The above locations, which are presented in *Figure 2-1*, were evaluated based upon a variety of factors to determine the most feasible alternatives. The primary factors include current utilization, pedestrian access, distance from the Stamford Transportation Center, and availability for public access. A field visit of the alternative locations was also performed on July 14, 2009 (a weekday) to observe site conditions and available reserve parking capacity.

Alternatives 4, 5 and 6 are considered the most feasible temporary parking alternatives. Collectively, these alternatives can provide sufficient parking capacity to replace 500 of the parking spaces that will be lost at the Stamford Transportation Center during construction of a replacement garage. The under-utilized top floor of the 2002 parking garage expansion may serve the remaining parking demand during construction. Should additional capacity be required to replace the full 720 lost parking spaces, consideration should be given to alternatives 9 or 10 as overflow parking when all other lots are full.

A shuttle loop is recommended between the alternative 4 and 5 locations and the Stamford Transportation Center to minimize travel time and walking distances. Should overflow parking be required under alternatives 9 or 10, a shuttle should also be provided at those locations. The

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following sections discuss each of the temporary parking alternatives and the rationale for selection of the most feasible alternatives.

Alternative 1: State Owned South State Street Lot

This lot is located on the northwest corner of South State Street at Washington Boulevard. The lot provides 111 spaces, and was observed to have full utilization during the weekday field visit. The parking lot presently requires a permit to park, and is used primarily by commuters traveling to the Stamford Transportation Center. Access is convenient, with a short 500-foot walk to the Transportation Center entrance.

Alternative 2: Vacant Lot at 650 Atlantic Street

This lot is located on Atlantic Street across from the south access to the existing Transportation Center parking garage and is presently not in use. Much of the lot is unpaved, and the existing pavement is in poor condition. ProPark is presently investing in improvements to this lot, which are expected to be complete in Spring 2010. Once the improvements are complete, 250 parking spaces are expected to be made available. These spaces may however be made immediately available to commuters currently on the waitlist, which would make the lot unavailable for temporary parking at the time of construction. Access is convenient, with a 700-foot walk to the Transportation Center entrance.

Alternative 3: Metro Center Parking Garage

The Metro Center parking garage is located adjacent to the west side of the existing Transportation Center garage, with access on Station Place. The garage is privately-owned; however, public access is permitted on a pay-basis. The two-story garage was observed to be fully utilized during the weekday field visit. Access is convenient, as the entrance is located on Station Place opposite the entrance to the train station.

Alternative 4: Building Land Technologies Lot

The Building Land Technologies parking lot is located on the northwest corner of the intersection of Atlantic Street at Washington Boulevard. The surface lot is paved, providing parking for approximately 300 vehicles, and presently is not in use. Discussions with ProPark indicate that 100 spaces are available for use within this parking lot. Walking access is inconvenient, at nearly a third of a mile from the Transportation Center. Transit access is provided via CT Transit Bus on the number 44 line; however, buses only run every 30 minutes during the peak hour.

Alternative 5: Surface Lot on Walter Wheeler Drive

This privately-owned surface lot is located on Walter Wheeler Drive east of Atlantic Street. The lot is paved, gated, and presently not in use. The lot provides parking for approximately 250 vehicles. Walking access is inconvenient, at over half a mile from the Transportation Center. Transit access via CT Transit Bus is provided on Atlantic Street, as described under Alternative 4 above.

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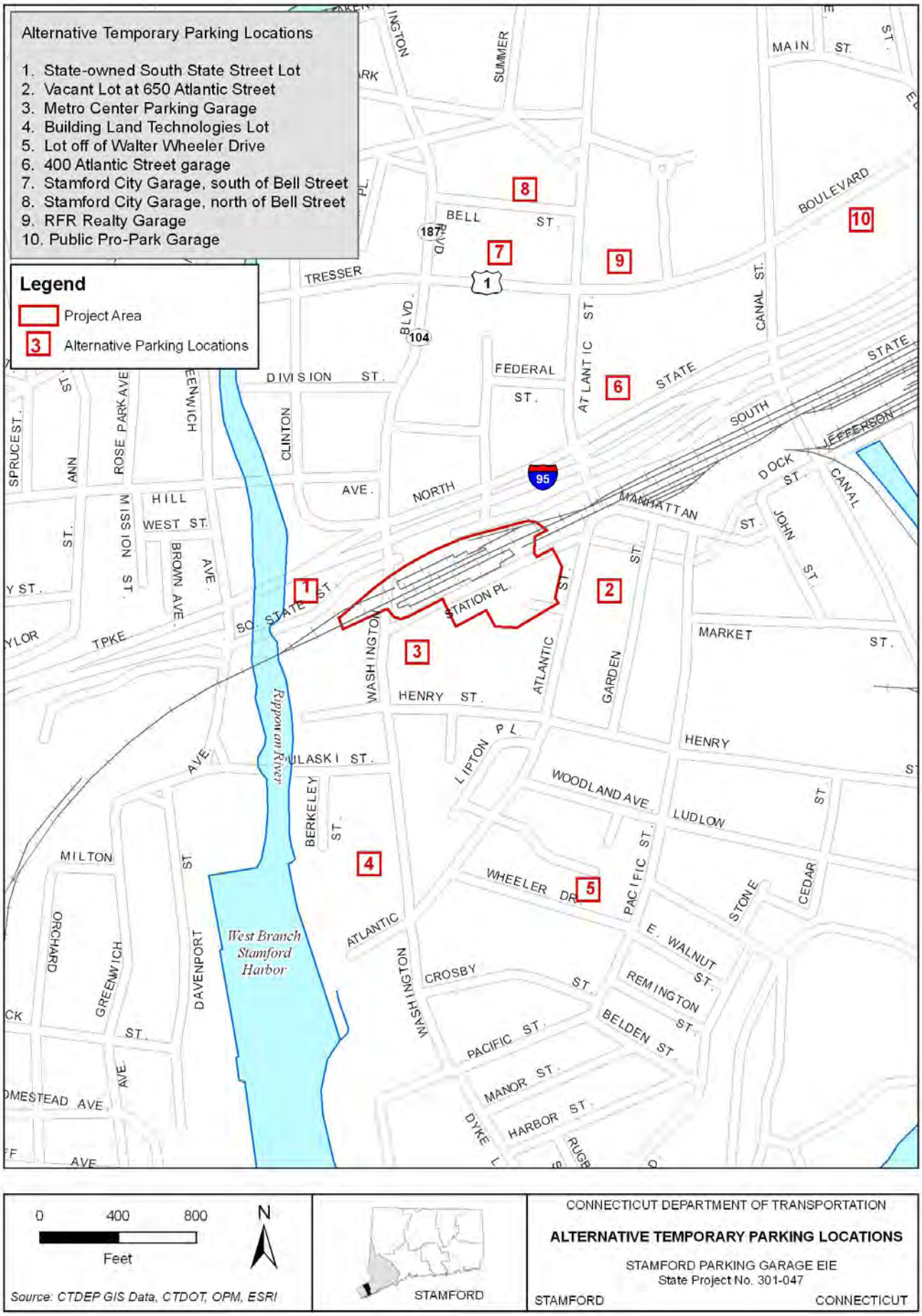

Figure 2-1. Alternative Temporary Parking Locations

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Alternative 6: 400 Atlantic Street Garage

This privately-owned garage is located on the northeast corner of North State Street at Atlantic Street, with access provided via Tresser Boulevard. The garage has excess capacity for approximately 150 vehicles. Pedestrian access to the lot is convenient, with an approximately 900-foot walk to the Stamford Transportation Center. However, no public access is currently permitted for security reasons. Access is provided only for employees and visitors of UBS.

Alternative 7: City of Stamford Surface Lot

The surface parking lot located between Tresser Boulevard and Bell Street, west of Atlantic Street, provides 238 parking spaces. This is a pay parking lot, with a central meter system. Utilization of the lot was observed to be approximately 75 percent during the weekday field visit. Pedestrian access is inconvenient, with a walking distance in excess of a third of a mile. Transit access is provided at Atlantic Street on several bus lines.

Alternative 8: City of Stamford Garage

This City of Stamford parking garage is located on the north side of Bell Street, west of Atlantic Street. The garage provides 918 parking spaces with a central meter system. The garage was observed to be approximately 60 percent utilized during the weekday field visit. Approximately 300 parking spaces may be available. Pedestrian access is inconvenient, with a walking distance of nearly half a mile. Transit access is provided at Atlantic Street on several bus lines.

Alternative 9: RFR Realty Garage

The RFR Realty Garage is located on the northeast corner of Atlantic Street at Tresser Boulevard, adjacent to the Stamford Town Center Mall. The garage provides three underground levels and five aboveground levels. Approximately 200 parking spaces are available. Pedestrian access is inconvenient, with a walking distance of nearly half a mile. Transit access is provided at Atlantic Street on several bus lines or on Tresser Boulevard on the number 43 line.

Alternative 10: Public Pro-Park Garage

This garage is located east of Canal Street, between North State Street and Tresser Boulevard, adjacent to the Marriot Hotel. The garage provides three levels of parking on a pay-basis. Utilization was observed to be approximately 85 percent during the weekday field visit. Discussions with ProPark indicate that approximately 120 parking spaces are available. Pedestrian access is inconvenient, with a walking distance of over half a mile to the Transportation Center. Transit access is available via the number 43 bus line; however, service only runs every 20 to 30 minutes.

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Other Alternatives Considered

Three other alternative sites were considered for temporary parking. The first is a property that was acquired by the City of Stamford for the Mill River Greenway on the west side of Washington Boulevard, between Park Place West and Whittaker Place. Due to a gap between funding needs and availability this site may be available for use as temporary parking (Susan Prosi, Senior Regional Transportation Coordinator, South Western Regional Planning Agency, personal communication, February 21, 2010). Direct shuttle service between this site and the Stamford Transportation Center could be provided on Washington Boulevard. The existing site is undeveloped, and as such would require the construction of a temporary parking lot. The lot is also located farther from the Stamford Transportation Center (approximately 1/2 mile) than any of the other alternatives. This alternative was eliminated from further consideration since other alternatives exist that are significantly closer to the Stamford Transportation Center and that require no infrastructure improvements.

The second site is the existing parking garage at the University of Connecticut-Stamford campus. The facility is reported to have structural issues, and areas of the structure are presently restricted from use. Discussions in 2009 focused on improvements to the garage and expansion of the facility to provide housing and other support services (Susan Prosi, Senior Regional Transportation Coordinator, South Western Regional Planning Agency [SWRPA], personal communication, February 21, 2010). This alternative was eliminated from further consideration based on the facility's restricted use and safety considerations.

The third site considered is the recently constructed Royal Bank of Scotland (RBS) building and parking garage. The garage provides a total of 2,000 parking spaces. Further research indicated however that the parking is likely to be fully utilized, as the building provides one million square feet of office space and is expected to serve 3,000 employees. This alternative was therefore eliminated from further consideration due to the lack of available spare parking.

2.5 Design Alternatives

CTDOT to provide information for completion of this section.

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3 Existing Environmental Conditions and Analysis of Impact

3.1 Land Use, Zoning, and Local and Regional Development Plans

3.1.1 Existing Conditions

Land Use

The Stamford Transportation Center is located within the downtown of Connecticut's fourth largest city, adjacent to an urban transportation corridor containing Interstate 95 and the rail line. A mix of commercial and residential land use surrounds the Stamford Transportation Center.

Land use zones within the city are identified in the *Stamford Master Plan* (RPA, 2002), which classifies the project area as a transition area within the downtown called, "Downtown Collar Mixed Use." The Downtown Collar area is intended to be a transition zone providing a variety of uses served by mass transit and pedestrian access. Located to the north is a Downtown Corridor area, one of the two most intensively developed land use area types in the city and intended to provide for offices and other compatible land uses. To the south is a Residential Medium Density Multifamily land use area. This land use zone is for areas in transition from lower to medium density or characterized by a mixture of multifamily housing types and other uses such as schools, places of worship and institutions.

Zoning

The Stamford Transportation Center, including the existing parking garage, is located within the General Industrial zone. Adjacent zoning districts include the Transportation Center Design District (TCDD) zone to the southwest, the additional General Industrial to the east, and General Commercial, Limited Business, and the Central City South district to the north. Commercial and municipal parking areas are permitted by right within the General Industrial zone. Section 11 of the Stamford Zoning Regulations (as amended through June 16, 2009) outline specific requirements for public garages, service stations, and automatic car washing establishments, the most relevant to the Stamford Transportation Center parking garage being the requirement that new construction or expansion of a public garage cannot be located within 200 feet from a public park or playground, school, hospital, church, public library, theater, or building for public assembly.

Municipal Land Use Plan

The *Stamford Master Plan* was completed by The Regional Plan Association (RPA) and Phillips Preiss Shapiro Associates, Inc. (PPSA) in 2002 to guide Stamford's growth through the year 2010. The plan's overarching theme includes orienting the next generation of growth into the downtown and a series of neighborhood centers with good transit access. The document emphasizes recycling large underutilized parcels near the city core, rediscovery of the waterfront

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(including the Mill River and the harbor), a network of open spaces and trails, and high quality development that is mixed-use and pedestrian friendly.

As discussed above, the Stamford Transportation Center is located within a land use category called "Downtown – Collar Mixed Use," a transition zone between the core downtown area to the north and mixed-use and medium density multifamily residential development to the south. The *Stamford Master Plan* recommends that development within the Collar area should consider factors such as: (1) compatibility with adjacent residential areas, (2) superior design, (3) public amenities, (4) pedestrian enhancements, (5) proximity to mass transit and (6) shared parking. The plan recommends that all new construction and façade renovation in the area should be subject to review based upon land use and urban design standards (RPA, 2002).

The *Stamford Master Plan* stresses that a more dense development strategy should be undertaken surrounding the Transportation Center and that the developments should use shared and/or public parking, when possible. It identifies several common resident complaints about the existing conditions at the Transportation Center including inadequate parking, lack of pedestrian comforts going to and from the Center, inconvenient bus connections, and the need for improved passenger pickup areas. Because of this, one of the objectives of the *Stamford Master Plan* is to amplify the importance of the Transportation Center as a regional and local transit resource by promoting transit-friendly development there. A new parking garage is listed as one of the anticipated measures to improve the Transportation Center.

Transportation Planning

South Western Region Long Range Transportation Plan 2007-2035 (2007)

The South Western Region Metropolitan Planning Organization (SWRMPO) has been designated by the state and federal governments as the transportation policy board for the South Western Region of Connecticut. The *South Western Region Long Range Transportation Plan 2007-2035* (LRTP), developed in cooperation with SWRPA and Transportation Technical Advisory Group (TTAG), serves as a blue print for transportation planning within the eight municipal members of the South Western Region, including Stamford. It is an update of the Region's *Long Range Transportation Plan 2004-2030*, and reflects the current state of the region, identifies future transportation needs, and plans for the entire region. The goals of the LRTP are to provide safe, efficient, cost effective and balanced transportation systems that promote mobility, access and choice with minimum adverse impacts and optimal investment of available resources in the transportation systems.

The LRTP specifically identifies the improvement and expansion of rail parking and replacement of Stamford Transportation Center garage parking as near-term priority projects.

South Western Region Rail Station Parking Study (2009)

The South Western Region Rail Station Parking Study prepared by the South Western Regional Planning Agency (SWRPA, 2009) examined the many aspects of rail station parking in the region, including:

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- Roles and responsibilities related to managing and operating rail station parking and parking facilities;
- Cost of rail station parking (annual/monthly permits, daily/hourly rates);
- Permitting process used to manage wait lists, issue permits and enforce parking/permit rules and regulations;
- Capacity of rail station parking facilities (structures and surface lots); and
- Websites with parking information and services for commuters.

The *Rail Station Parking Study* identified rail transit is a vital piece of the Region's transportation network - providing access not only to neighboring communities, but also to major New England and East Coast metropolitan centers. It identifies automobile access and parking as critical to effective operation of the regional rail transit system. The demand for rail station parking in the Region is high. To promote the goals and objectives of the Plan, adequate rail station parking must be provided, managed, and operated.

At the time of the study, the Stamford Transportation Center parking garage had a waiting list of 908 (2 years, estimated waiting time) [1]. Other stations on the New Haven line have waiting lists with wait times of up to 5 years. *The Rail Station Parking Study* recommended that municipalities in the region explore all options for increasing and maximizing existing parking capacity to accommodate an increasing demand including constructing parking structures (decks or garages). All recommendations are based on key findings and are consistent with the goals and objectives of the *South Western Region Long Range Transportation Plan 2007-2035*.

The *Rail Station Parking Study* states that the Stamford Transportation Center is the busiest station on Metro-North's New Haven Line after Grand Central Terminal. SWRPA interviewed the State and the Stamford Transportation Center's property manager during the process of drafting this report and they stated that one of the pressing issues regarding rail station parking at the Stamford station was insufficient parking capacity.

Moving Forward: Connecticut's Transportation Strategy – Report and Recommendations of the Transportation Strategy Board (2007)

The Transportation Strategy Board (TSB) recommended in the *Moving Forward: Connecticut's Transportation Strategy* report that the replacement of the Stamford rail station parking garage be expedited. In a letter from the South Western Region Metropolitan Planning Organization (SWRMPO) to the Governor and TSB on this plan, they commented that rail station parking was the issue of greatest concern. This concern is further reinforced by various letters from SWRMPO in which they have stated that some of their priorities include increasing rail parking at South Western Region New Haven Line stations, particularly those east of Westport to meet existing demand and reduce traffic on area highways and arterials.

[1] Note that data provided by CTDOT indicates that as of July 15, 2009, the waiting list for monthly parking privileges at the garage numbered 957 individuals

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Connecticut on the Move: Strategic Long-Range Transportation Plan 2008 – 2035 (2009)

The *Connecticut on the Move: Strategic Long-Range Transportation Plan 2008 – 2035*, prepared by the State of Connecticut Department of Transportation, identified transportation investment goals in determining their financial investment priorities including: maintaining the existing system in a state of good repair and providing strategic capacity improvements. The plan specifically identifies the construction of the Stamford Rail Station parking facility as an important effort.

2009 Master Transportation Plan 2009- 2016 (2009)

The *2009 Master Transportation Plan* (MTP) was prepared by the State of Connecticut's Department of Transportation to guide future planning, construction, reconstruction, rehabilitation, etc for the public transportation sector within the State. The Stamford rail station, specifically parking lot/garage improvements, was included in the list of projects identified by CTDOT for implementation during the 2009-2016 period.

Stamford Transportation Center Master Plan (Anticipated 2010)

The City of Stamford is in the process of preparing a master plan for the Stamford Transportation Center. Details of the *Stamford Transportation Center Master Plan* were unavailable as of the preparation of this EIE.

3.1.2 Impact Evaluation

Land Use

There would be no change in land use if either the No-Action or Proposed Action alternatives are pursued. Both would continue a transportation-related use within a land use area identified as a mixed-use transition zone providing pedestrian access and mass transit. Neither alternative would adversely impact the surrounding land uses, although the Proposed Action would better support the surrounding land uses by increasing convenient access to mass transit.

Zoning

Although state projects are exempt from local zoning requirements, CTDOT attempts to avoid conflict with local regulations. The Proposed Action and No-Action alternatives are both allowable uses by right with the General Industrial zoning district, will not result in enlargement of a parking structure within 200 feet from specific uses outlined in Section 11 of the Zoning Regulations, and will not adversely affect nearby zoning districts.

Municipal Land Use Planning

The No-Action alternative is not consistent with the *Stamford Master Plan*, as it does not address existing parking issues at the Transportation Center or work to advance the Transportation Center as a regional and local transit resource.

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The Proposed Action is consistent with the goals and objectives outlined in the *Stamford Master Plan* as it addresses provision of adequate parking at the Transportation Center and will help maintain the Transportation Center and a local and regional transit resource.

Transportation Planning

Regional and state-wide transportation planning documents have identified the importance of rail transit and the need for adequate parking. The expansion of parking at the Stamford Transportation Center has been specifically identified as a planning goal in both regional and state transportation planning documents. The No-Action Alternative is not consistent with transportation planning goals or the state and region because it will not address identified parking needs to support rail transit. The Proposed Action is consistent with the goals and objectives outlined in the regional and state transportation plans because it will provide improved transportation facilities to support new and existing development while utilizing an already developed location, minimizing disturbance of currently undeveloped areas.

3.1.3 Mitigation

No mitigation is necessary or proposed since the Proposed Action is consistent with applicable land use, zoning, and planning initiatives.

3.2 Consistency with State and Regional Plans

3.2.1 Existing Conditions

Conservation and Development Policies Plan for Connecticut 2005-2010

The *Conservation and Development Policies Plan for Connecticut 2005-2010* (C&D Plan) provides the policy and planning framework for administrative and programmatic actions and capital and operational investment decisions of state government (OPM, 2005). The C&D Plan outlines broad-based growth management principles designed to encourage sustainable development that balance human needs with conservation of environmental and socioeconomic resources.

The growth management principles reflect a desire to avoid land use trends that encourage sprawl and the subsequent disproportionate consumption of land and resources that results. These principles encourage the revitalization of areas with existing infrastructure and capacity to support growth and the development of currently undeveloped areas that is consistent with long-term sustainability of the state's resources.

According to the C&D Plan's Development Locational Guide Map, the project site is located in a "Regional Center" *(Figure 3-1)*. Regional Centers are identified in the C&D Plan as being land areas that contain traditional core area commercial, industrial, transportation, specialized institutional services, and facilities of intertown significance and also contain Census tracts or blocks that meet population density and/or demographic criteria outlined in the plan. The C&D Plan goal for Regional Centers is to redevelop and revitalize the economic, social, and physical

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environment of the state's traditional centers of industry and commerce. Regional Centers have the highest development priority in the C&D Plan.

Regional Plan of Conservation and Development, 2006-2015

The South Western Regional Planning Agency (SWRPA) is the regional planning agency for the municipalities of Darien, Greenwich, New Canaan, Norwalk, Stamford, Weston, Westport and Wilton.

The *Regional Plan of Conservation and Development, 2006-2015* is an advisory document developed by the SWRPA that is intended to 1) evaluate conditions, trends, and issues of regional significance, 2) recommend policies that will address regional issues, and 3) promote regional cooperation in solving those issues.

The basic goals of the Plan include:

- Encouraging municipal land-use planning that recognizes the need to direct development to those areas with the infrastructure, including transportation, to best accommodate it.
- Preserving the region's dwindling supply of permanent open space and, whenever possible, add to it through either outright acquisition of open space or through conservation easements.
- Improving and expanding the region's public transportation system, including the New Haven Line Railroad, bus transit services and facilities that support transit use.
- Encouraging the preservation and adaptive reuse of historic structures.
- Maintaining the region's strong business climate by building on those assets that stimulated the region's business growth in the first place: viable transportation facilities, attractive communities, good schools and a well-educated and trained workforce.

3.2.2 Impact Evaluation

The No-Action Alternative is inconsistent with both the state and regional conservation and development plans because it fails to encourage redevelopment, revitalization, and improvement of existing transportation infrastructure.

The Proposed Action is consistent with the state and regional conservation and development plans described above. Specifically, it exemplifies redevelopment of an existing urban feature, focusing development in an already disturbed area, and is consistent with regional and state-wide goals to maintain and improve the state's transportation facilities.

3.2.3 Mitigation

No mitigation is necessary or proposed since the Proposed Action is consistent with state and regional conservation and development plans.

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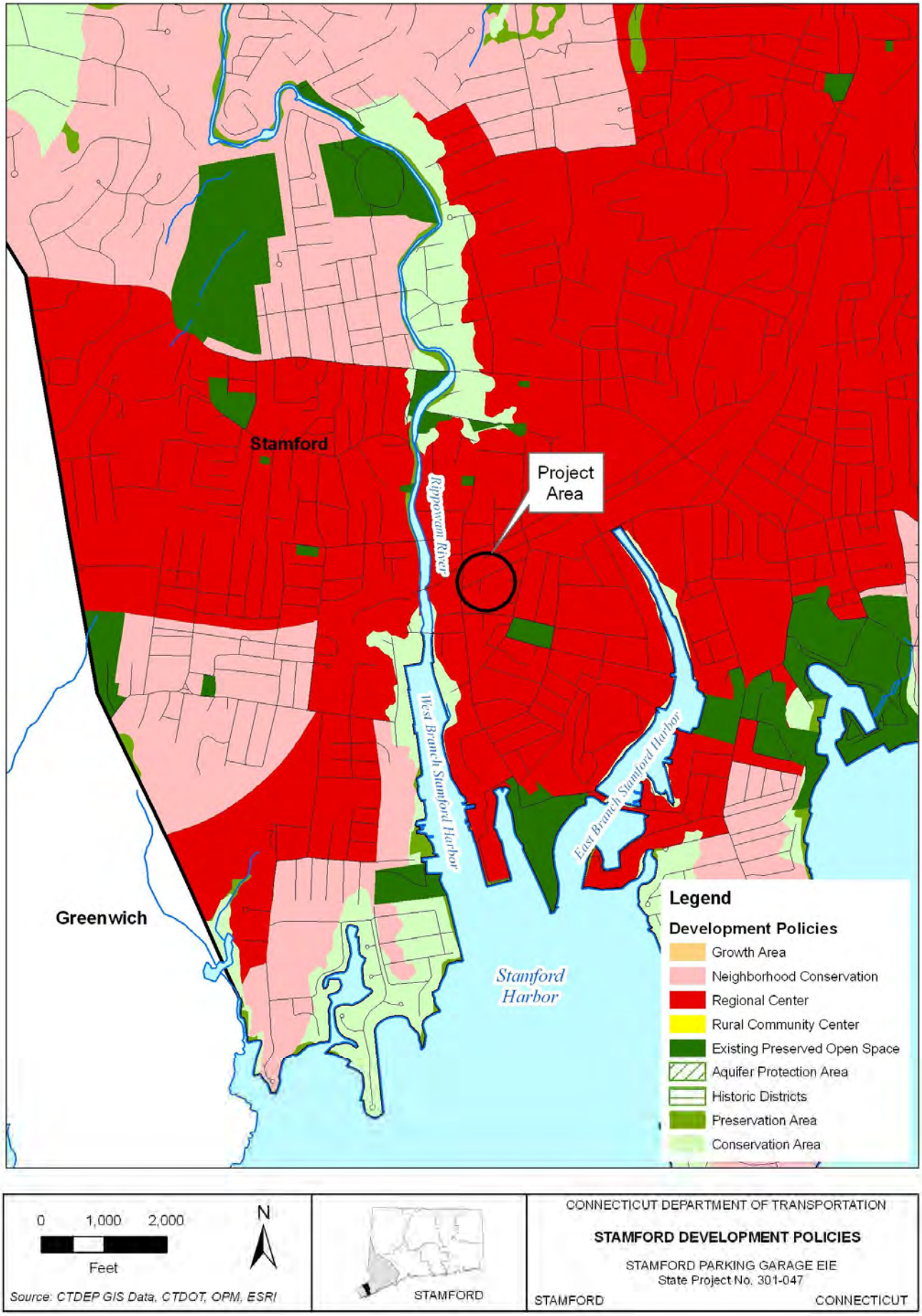

Figure 3-1. Stamford Development Policies

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3.3 Traffic and Parking

3.3.1 Existing Conditions

Adjacent Roadway Network

The roadway network adjacent to the Stamford Transportation Center includes the following roads (*Figure 3-2*):

- Interstate 95 (I-95)
- Greenwich Avenue
- Washington Boulevard
- North State Street
- South State Street
- Station Place
- Atlantic Street
- Canal Street
- Dock Street (referred to as the Stamford Urban Transitway)

Interstate 95 is a limited access highway that traverses the City of Stamford along an east-west alignment just north of the Stamford Transportation Center. The highway provides access to New York City to the southwest and the cities of Bridgeport and New Haven to the northeast. Within the City of Stamford, I-95 provides three lanes in each direction with a posted speed limit of 55 miles per hour.

Greenwich Avenue is a two-lane bi-directional roadway which runs generally north and south through South Stamford. This roadway serves as one of the primary corridors connecting Downtown Stamford and Interstate 95 with the industrial and residential neighborhoods of the southwest section of Stamford. The roadway also serves as a connection to the Town of Greenwich. The limits of Greenwich Avenue are the intersection with West Main Street and Tresser Boulevard to the north and the intersection with Selleck Street, Southfield Avenue, and Davenport Street to the south. At its intersection with Pulaski Street, Greenwich Avenue makes a 90 degree turn to the west before turning south again at a sharp horizontal curve just west of Davenport Street.

Washington Boulevard is a principal arterial roadway running north/south through Stamford, designated as Route 137 north of Tresser Boulevard and State Route 493 between Tresser Boulevard and Station Place. The roadway provides two lanes in each direction along the majority of its length, with turning lanes at key signalized intersections. South of Station Place, the roadway narrows to a single lane in each direction and is classified as a collector roadway. Washington Boulevard terminates at Cold Spring Road to the north and at Pacific Street in the Harbor Point area to the south.

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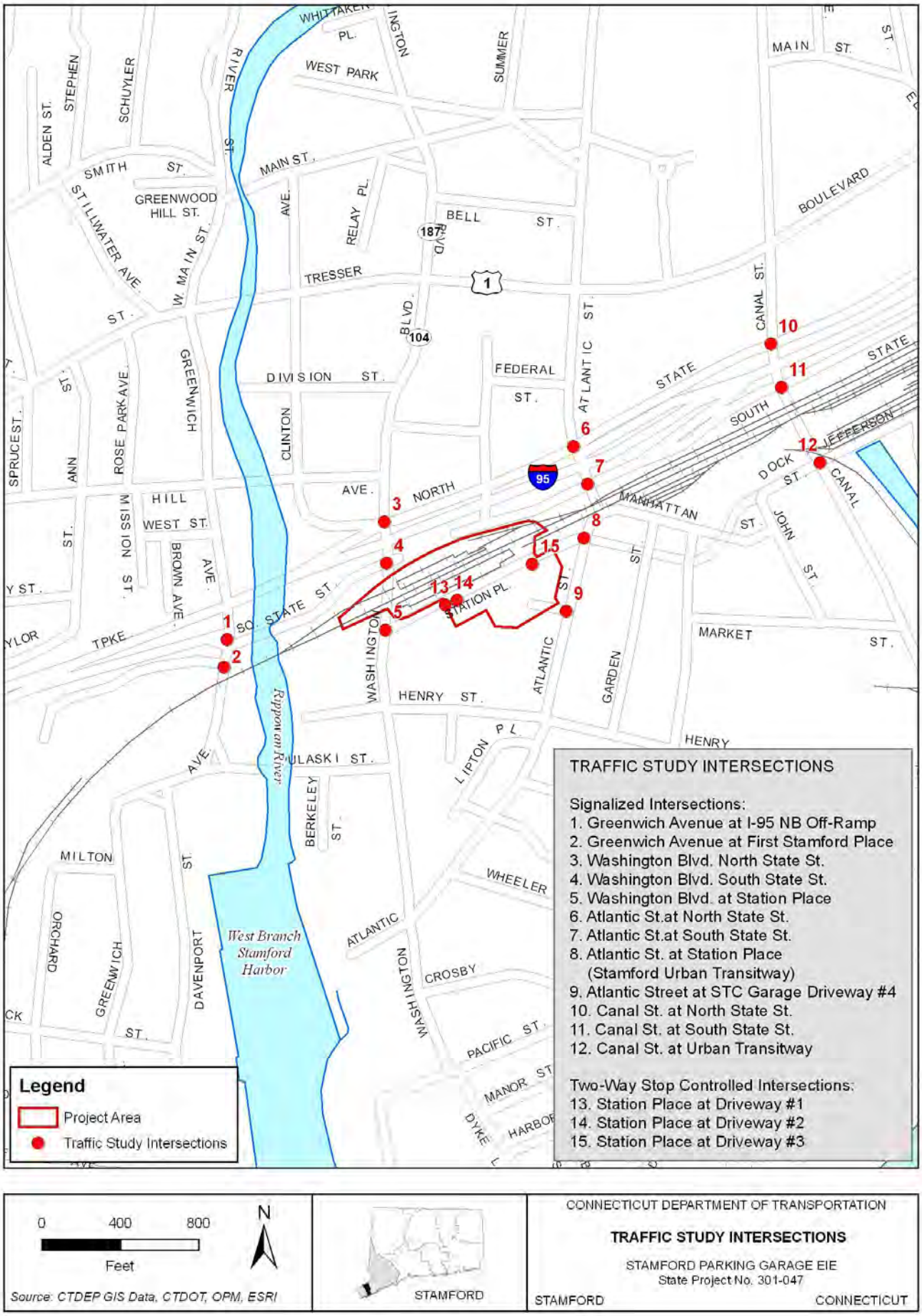

Figure 3-2. Traffic Study Intersections

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North and South State Streets are each one-way roadways functioning as frontage roads along I-95 through the Stamford downtown area from Washington Street east to Elm Street. Both roads are classified by CTDOT as minor arterial roadways. The roads typically provide three to four lanes with traffic signals and turning lanes at the major cross road intersections.

Atlantic Street is classified by CTDOT as a minor arterial roadway, providing two lanes in each direction along the segment north of Station Place. South of Station Place, the roadway narrows to one lane in each direction and is classified as a collector. Atlantic Street begins at Broad Street to the north and terminates at its intersection with Washington Boulevard to the south.

Canal Street is classified by CTDOT as a collector roadway, providing two lanes in each direction north of I-95 and one lane in each direction south of I-95. The roadway begins at Route 1 (Tresser Boulevard) to the north and terminates at Ludlow Street to the south.

Dock Street begins at Atlantic Street opposite Station Place and continues east to Canal Street, where it becomes Jefferson Street. The roadway was recently extended as part of the Stamford Urban Transitway corridor, providing two lanes in each direction, including one which is designated for high occupancy vehicles and buses. Turn lanes are provided at its intersections with Atlantic, Pacific and Canal Street. The continuation of the corridor along Jefferson Street is presently under construction.

Study Area Intersections

The adjacent roadway network includes the following intersections, all of which are controlled by traffic signals:

- Greenwich Avenue at I-95 northbound (NB) Off-Ramp & McCullough Street
- Greenwich Avenue at First Stamford Place
- Washington Boulevard at North State Street and I-95 southbound (SB) On-Ramp
- Washington Boulevard at South State Street & McCullough Street
- Washington Boulevard at Station Place
- Atlantic Street at North State Street
- Atlantic Street at South State Street & I-95 NB Off-Ramp
- Atlantic Street at Station Place & Dock Street
- Canal Street at North State Street
- Canal Street at South State Street
- Canal Street at Dock Street/Jefferson Street

The study area also includes the four driveway intersections for the existing parking garages:

- Station Place at Garage Driveway 1 (West Entrance)
- Station Place at Garage Driveway 2 (West Exit)
- Station Place at Garage Driveway 3 (East Exit)
- Atlantic Street at Garage Driveway 4 (South Driveway)

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The Atlantic Street driveway intersection is controlled by a traffic signal, while the remaining three are controlled by stop signs for exiting vehicles.

Traffic Volumes

Existing 2009 traffic volumes for each of the study area intersections were provided by the CTDOT Bureau of Policy and Planning. The traffic volumes were obtained from traffic studies recently performed for other developments within the study area as well as new turning movement counts which were performed at each of the intersections along Station Place. Traffic volumes were provided for the morning and afternoon peak hours of adjacent street traffic. These traffic volumes are depicted in *Figures 3-3 and 3-4).*

Capacity Analysis

Capacity analyses for both signalized and unsignalized intersections were conducted using Synchro Professional Software, version 7.0.

In discussing intersection capacity analyses results, the term level of service (LOS) is used to describe the operating condition of the road or intersection. LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

This definition LOS as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, is taken from the 2000 *Highway Capacity Manual* published by the Transportation Research Board.

In discussing two way stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street, and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay, therefore they are not rated with a level of service.

Under the existing conditions, the intersections along North State Street operate poorly during the morning peak hour at LOS E and LOS F (*Table 3-1*). The intersection of Greenwich Avenue at the I-95 Northbound Off-Ramp and McCullough Street operates poorly at LOS E, while the intersection of Atlantic Street at South State Street and the I-95 Northbound Off-Ramp operates at LOS F.

During the afternoon peak hour, the intersection of Washington Boulevard at South State Street operates poorly at LOS F. The remainder of the study area signalized intersections operate acceptably at LOS D or better during the afternoon peak hour.

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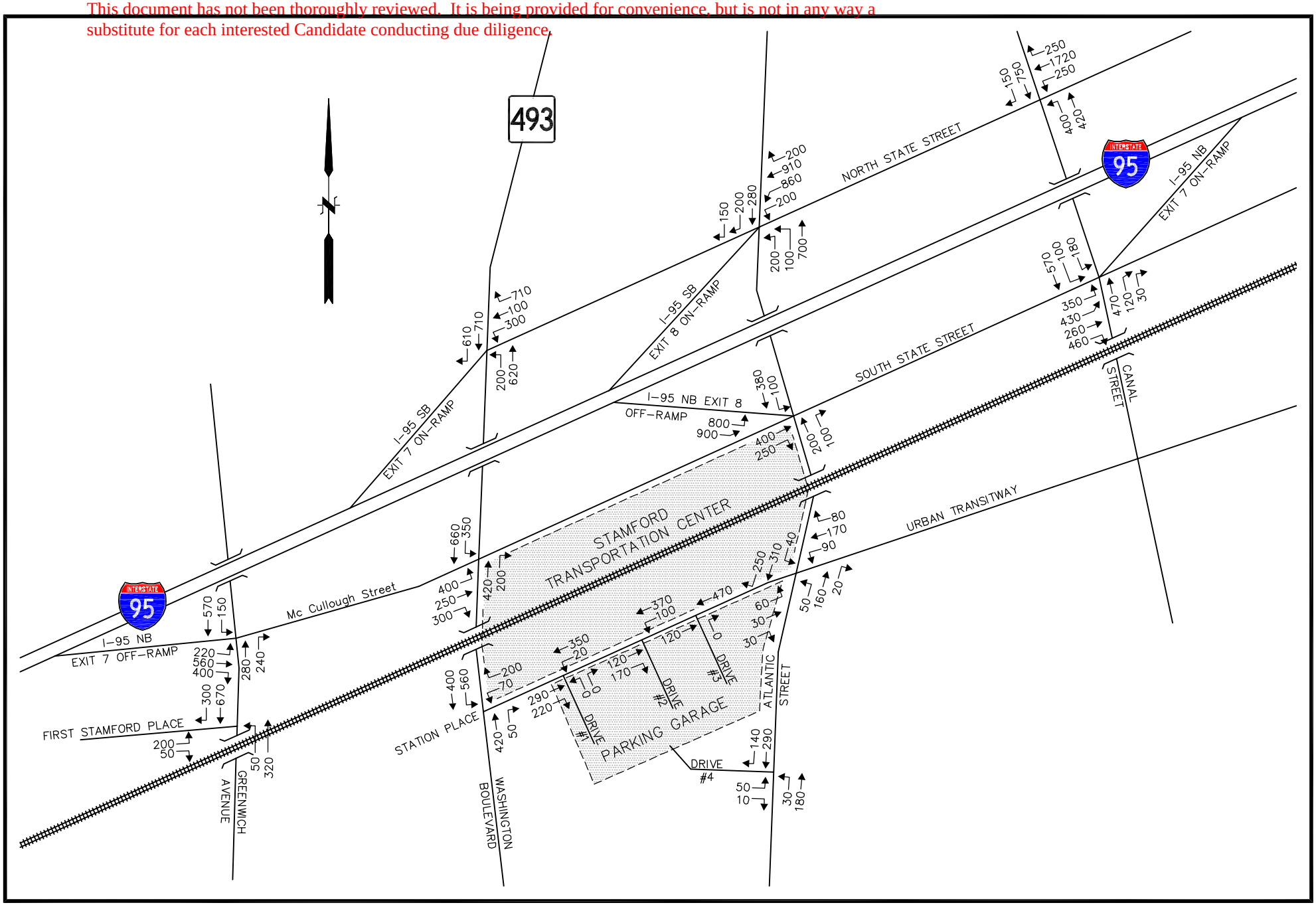

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CONNECTICUT DEPARTMENT OF TRANSPORTATION
2009 EXISTING TRAFFIC VOLUMES
AM PEAK HOUR
STAMFORD TRANSPORTATION CENTER PARKING GARAGE EIE

STAMFORD CONNECTICUT

PROJ. No.: 20072097.B20
DATE: JANUARY 2010

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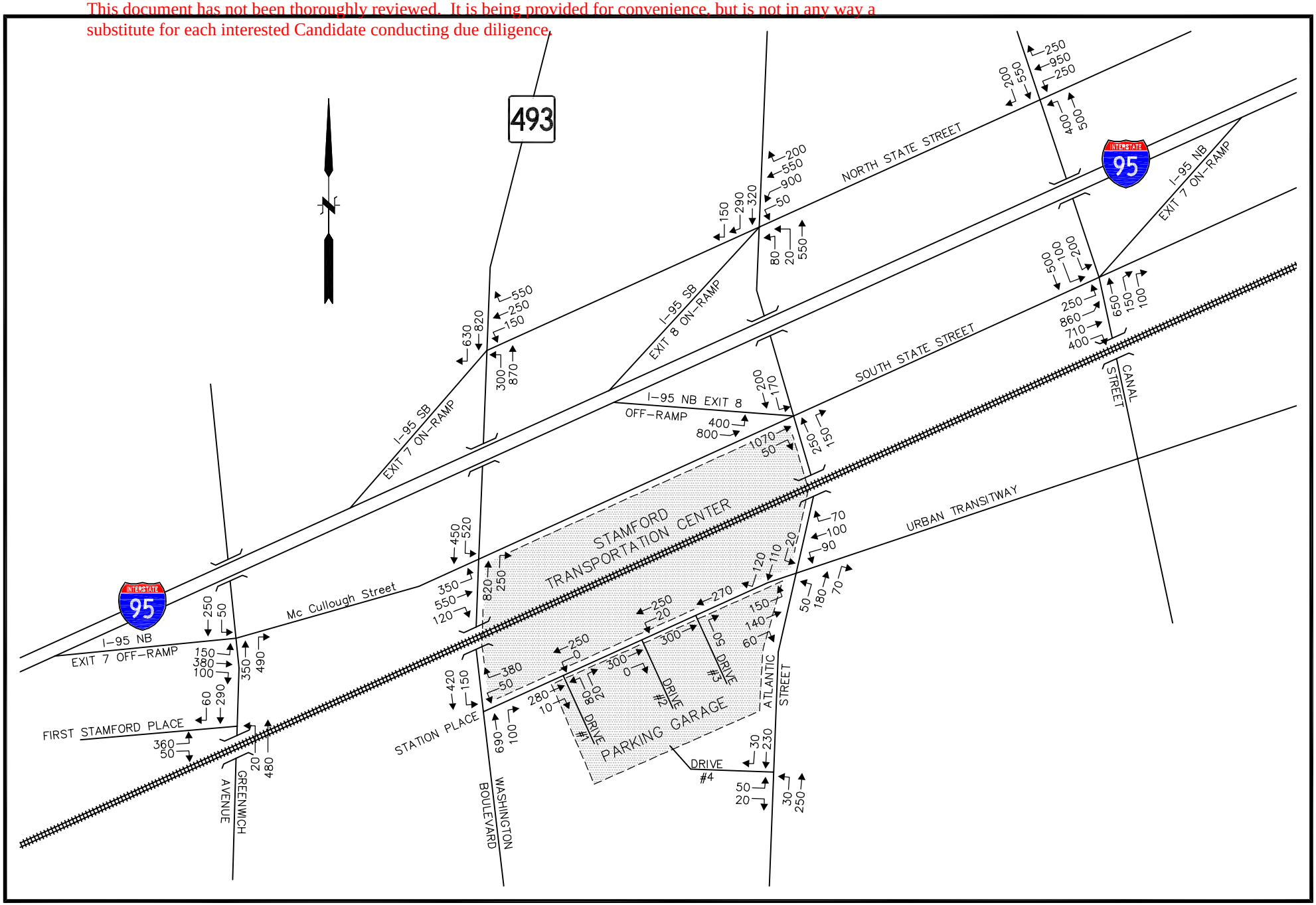

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CONNECTICUT DEPARTMENT OF TRANSPORTATION
2009 EXISTING TRAFFIC VOLUMES
PM PEAK HOUR
STAMFORD TRANSPORTATION CENTER PARKING GARAGE EIE

STAMFORD CONNECTICUT

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The existing unsignalized driveway intersections for the existing parking facilities at the Stamford Transportation Center each operate efficiently at LOS B or better during both the morning and afternoon peak hours.

Table 3-1. 2009 Existing Conditions Levels of Service

Intersection	AM Peak Hour	PM Peak Hour
Signalized Intersections		
Greenwich Avenue at I-95 NB Off-Ramp	E	B
Greenwich Avenue at First Stamford Place	C	D
Washington Boulevard at North State Street	E	D
Washington Boulevard at South State Street	D	F
Washington Boulevard at Station Place	B	C
Atlantic Street at North State Street	F	C
Atlantic Street at South State Street	F	D
Atlantic Street at Station Place/Dock Street	C	C
Canal Street at North State Street	E	D
Canal Street at South State Street	C	D
Canal Street at Dock Street	*	*
Atlantic Street at Garage Driveway 4	A	A
Two-Way Stop Controlled Intersections		
Station Place at Driveway 1		
Westbound Left	A	A
Northbound	A	A
Station Place at Driveway 2		
Westbound Left	A	A
Station Place at Driveway 3		
Northbound	A	B

* Intersection not analyzed in existing condition due to ongoing construction

Parking

Existing parking at the facility includes 1,970 in the two garages at the Stamford Transportation Center, including 720 spaces in the original portion of the garage constructed in 1984 and 1,250 spaces in the expansion portion, constructed in 2002. As stated in *Section 1.3*, a high demand exists for parking at the site, with a waiting list for monthly parking privileges consisting of 957 people as of July 15, 2009.

The Stamford Transportation Center has a Major Traffic Generator Certificate from the State Traffic Commission (STC), which is required for developments with 200 or more parking spaces that have the potential to generate traffic on a state highway. The existing certificate

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number is 394A, which was issued in 2000 for construction of the expansion portion of the garage structure.

Travel Demand Management

The City of Stamford and SWRPA are considering strategies to encourage existing businesses and future development to implement Travel Demand Management (TDM) and other volume reduction measures throughout the study area, as further capacity improvements are not feasible at the majority of the intersections. These measures could include incentives for use of carpooling, transit, flex work hours, telecommuting, and walking/biking to work or the Stamford Transportation Center. These strategies would allow for better utilization of the available capacity throughout the Stamford roadway network.

3.3.2 Impact Evaluation

The impact of the Proposed Action was evaluated for 2012, the year in which construction of the project is anticipated, and for the future design year of 2029, which reflects an approximately 20-year planning window. These years were evaluated for background traffic conditions which account for background traffic growth and traffic impacts resulting from other developments occurring in the project area while assuming that existing parking and trip generation at the site remain in their current condition (i.e., No-Action Alternative), and the Proposed Action, to determine the incremental impact of the project on traffic conditions. Supporting documentation for the traffic impact evaluation is included in *Appendix B*.

It is important to note that the Stamford Urban Transitway Project, which includes the extension of Dock Street to Atlantic Street (completed) and improvements to Jefferson Street and Cherry Street (under construction at the time of writing this EIE), will benefit traffic operations in the study area upon completion and improve access/egress to the Stamford Transportation Center. The four-lane transitway will provide a parallel east-west conduit to North and South State Street and improved transit flow via High Occupancy Vehicle (HOV) Bus lanes. This additional roadway capacity will reduce future vehicle delays on the frontage roads. It was included in the 2029 Proposed Action and No-Action analyses presented in the following sections.

No-Action Traffic Volumes

Background traffic volumes for the 2012 and 2029 build years were provided by the CTDOT Bureau of Policy and Planning. The volumes were developed using the Department's regional model to forecast growth within the study area. Estimated traffic volumes from other developments expected to be completed within the study area were also included in the background traffic volumes to estimate future roadway volumes. These developments include:

- Atlantic Center
- Davenport Landing
- Harbor Point
- Metro Green
- Park Square West

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- Royal Bank of Scotland
- Sound View Farms
- Stamford Town Center
- Trump Park
- Yale & Town

Background volumes also assume the continued presence of the existing portion of the garage rather than closure of the structure. The 2012 No-Action traffic volumes are depicted in *Figures 3-5 and 3-6)*, while the 2029 No-Action traffic volumes are depicted in *Figures 3-7 and 3-8)*.

Trip Generation

The replacement garage will provide a net increase of 280 parking spaces compared to existing conditions. The existing conditions traffic volumes indicate that the existing parking complex, which provides a total of 1,970 parking spaces, attracts 740 trips during the morning peak hour of adjacent street traffic and 310 trips during the afternoon peak hour of adjacent street traffic. During the evening, the peak hour for the station does not appear to coincide with that of the adjacent roadway traffic due to the travel time from Grand Central Station in Manhattan.

It is expected that the additional parking spaces will generate trips in a similar proportion to parking spaces under the Proposed Action. It is therefore expected that the additional parking will generate 105 additional trips during the morning peak hour and 44 additional trips during the afternoon peak hour under the 2012 and 2029 Proposed Action conditions, as shown in *Table 3-2*.

Table 3-2. Trip Generation

Description	Size (# of spaces)	Trips Generated AM Peak			Trips Generated PM Peak		
		Entering	Exiting	Total	Entering	Exiting	Total
Existing Garage	1,970	680	60	740	90	220	310
Proposed Action	280	96	9	105	13	31	44
Future Total	2,250	776	69	845	103	251	354

The additional trips generated by the parking spaces were distributed according to zip code data available from the Stamford Transportation Center Garage Permit Waiting List provided by CTDOT. The majority of trips attracted by the additional parking spaces will be from residents of Stamford north of the transportation center. A smaller percentage of trips will arrive via I-95 and Route 1 from adjacent towns. The trip distribution is provided in *Figure 3-9*, with the trip generation volumes provided in *Figures 3-10 and 3-11*.

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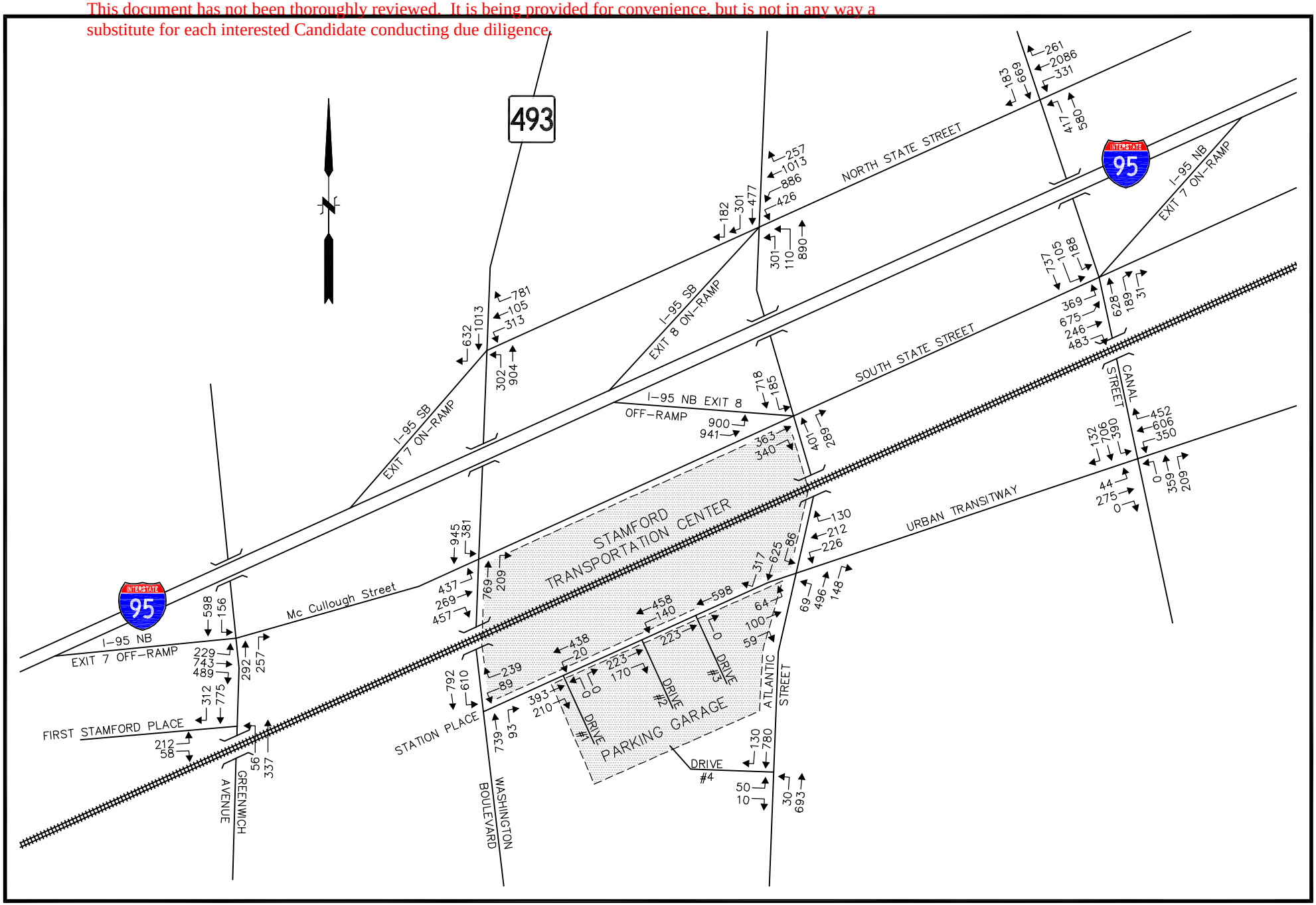

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DATE: JANUARY 2010

3-5

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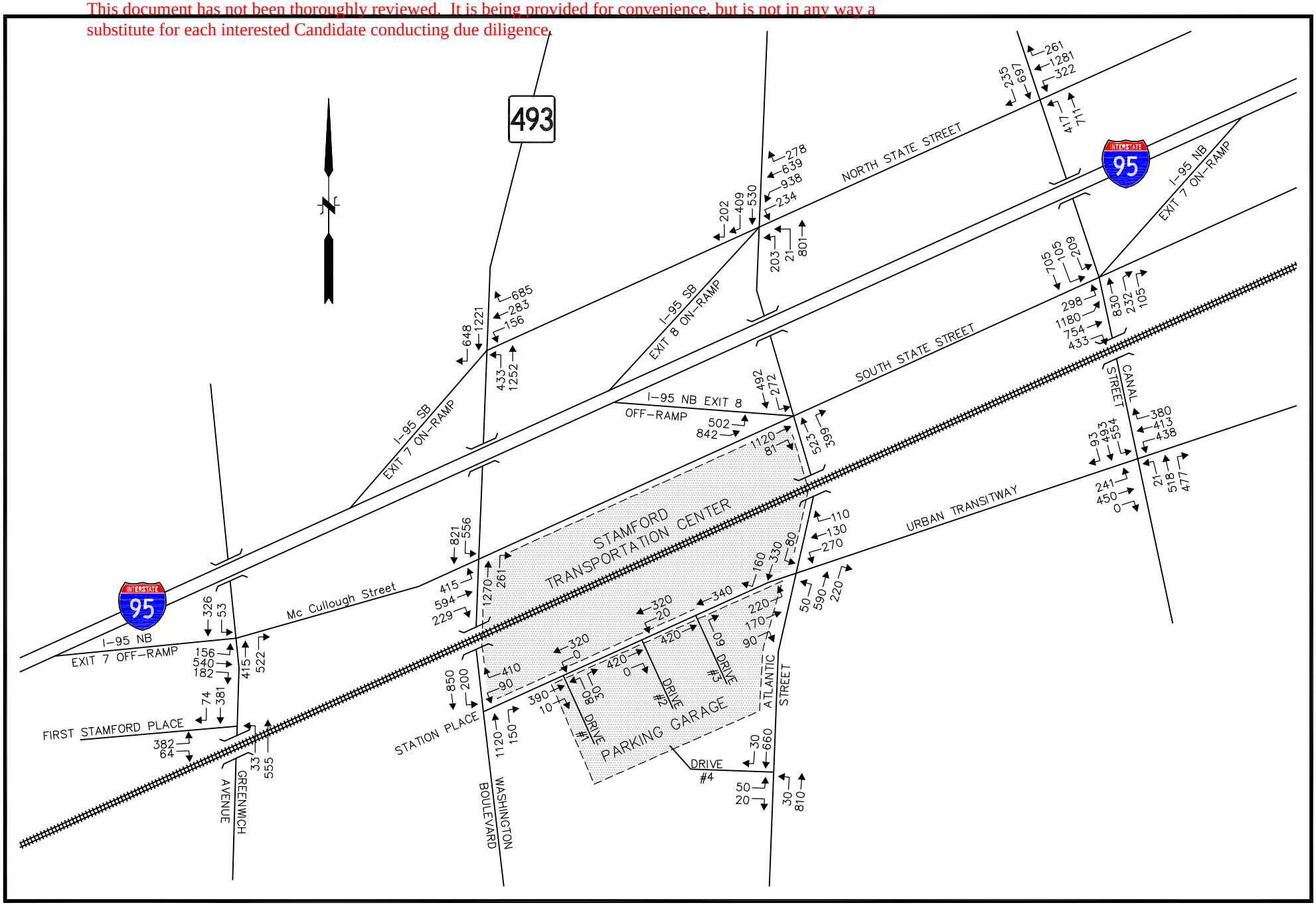

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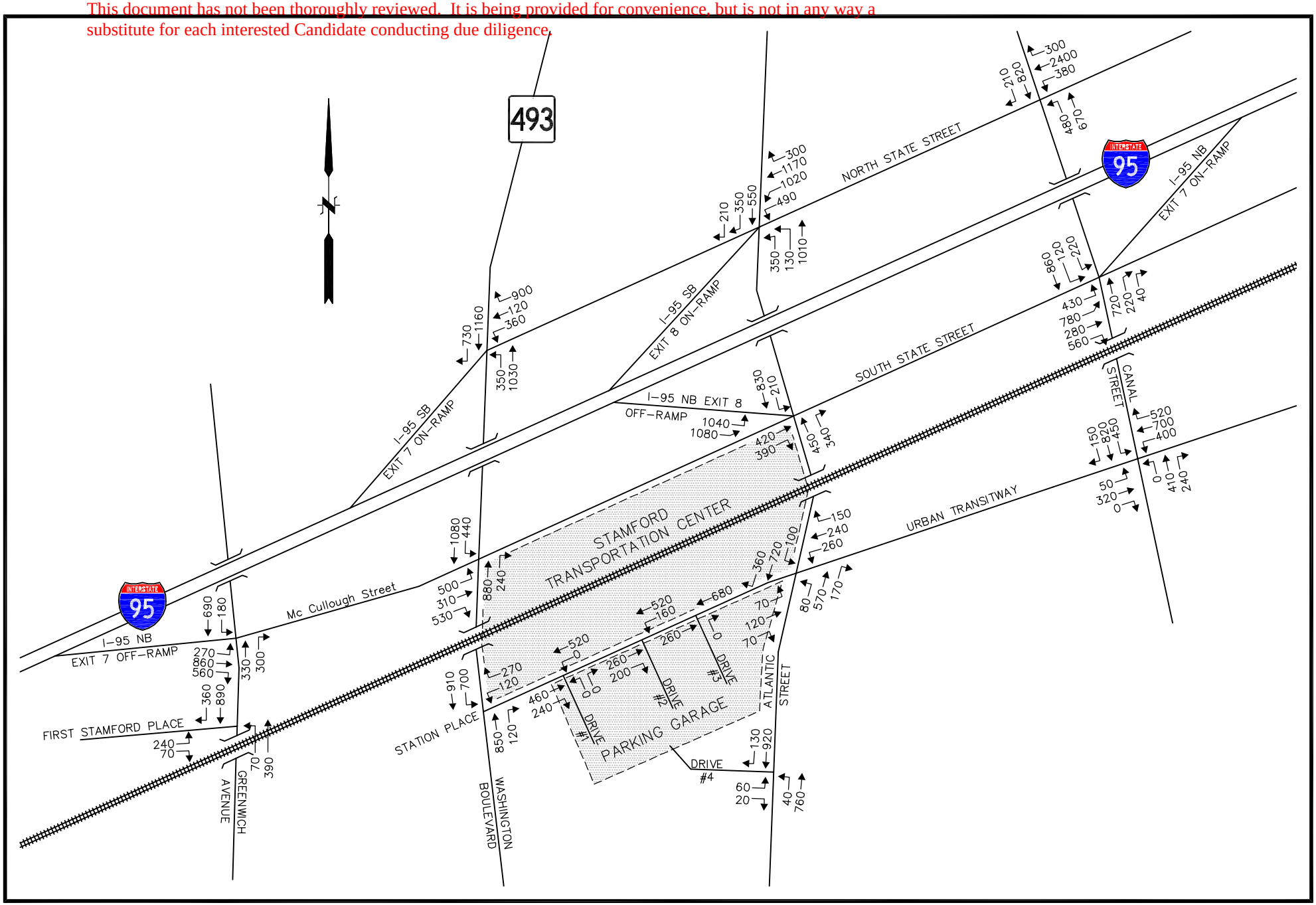

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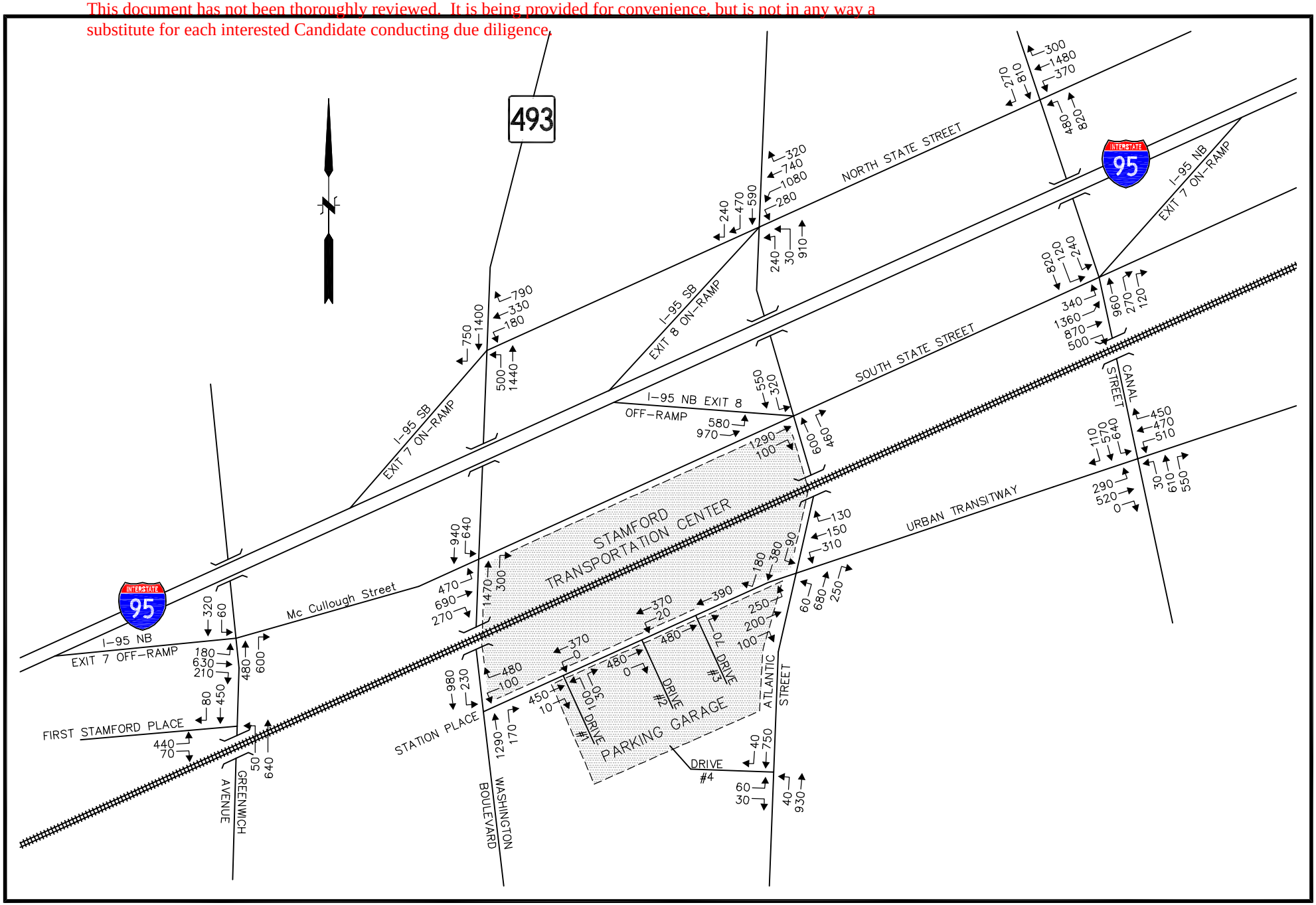

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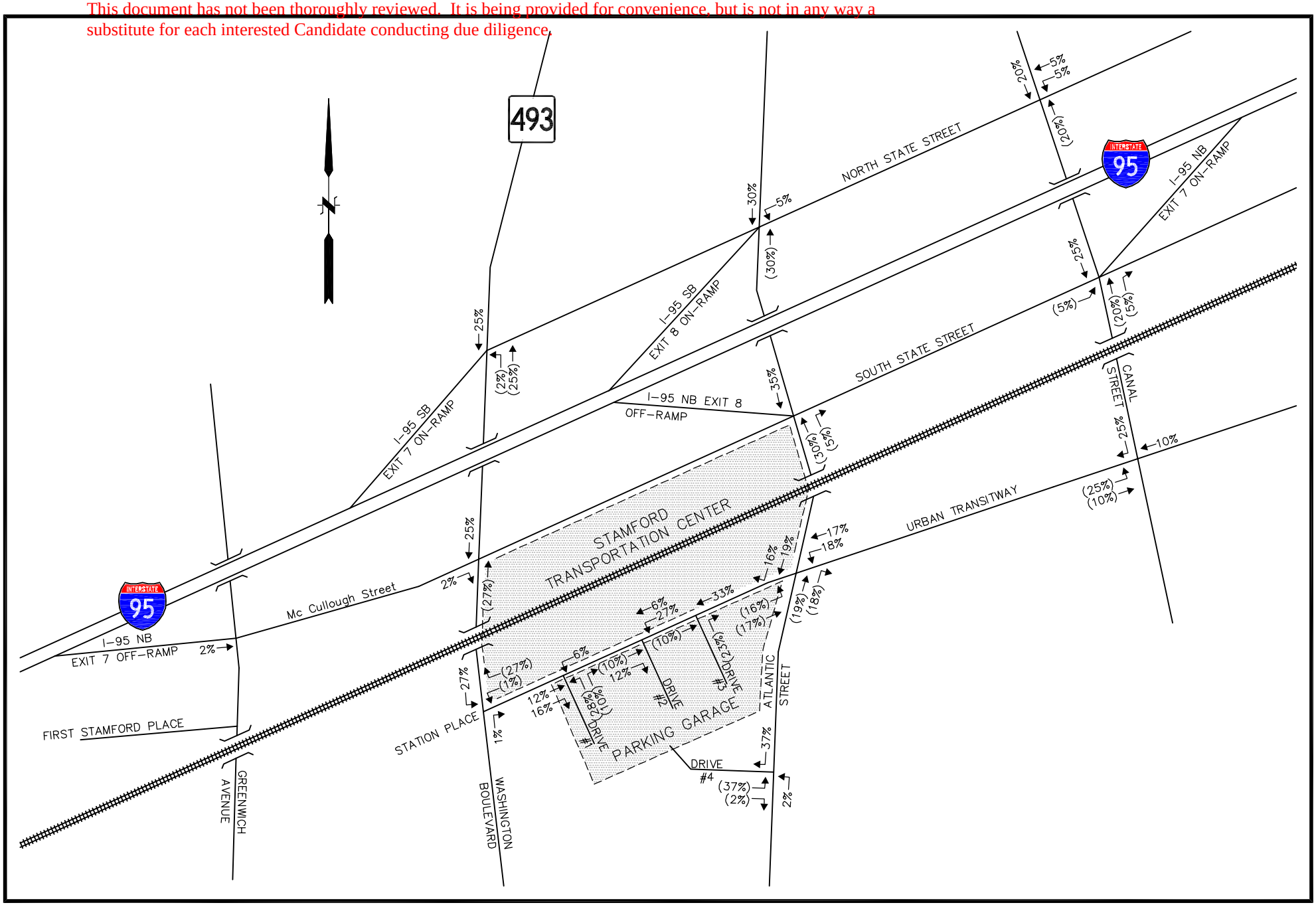

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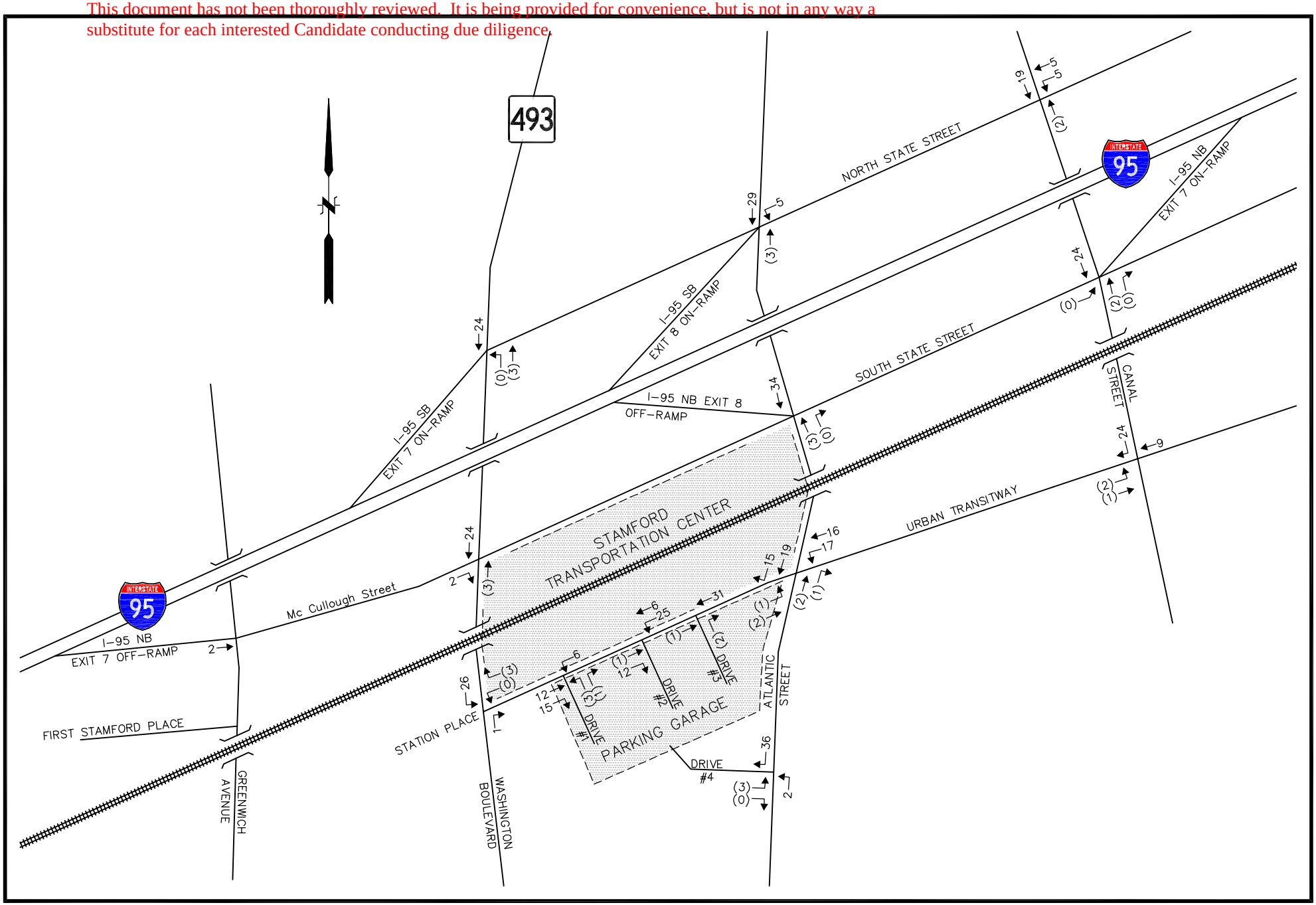

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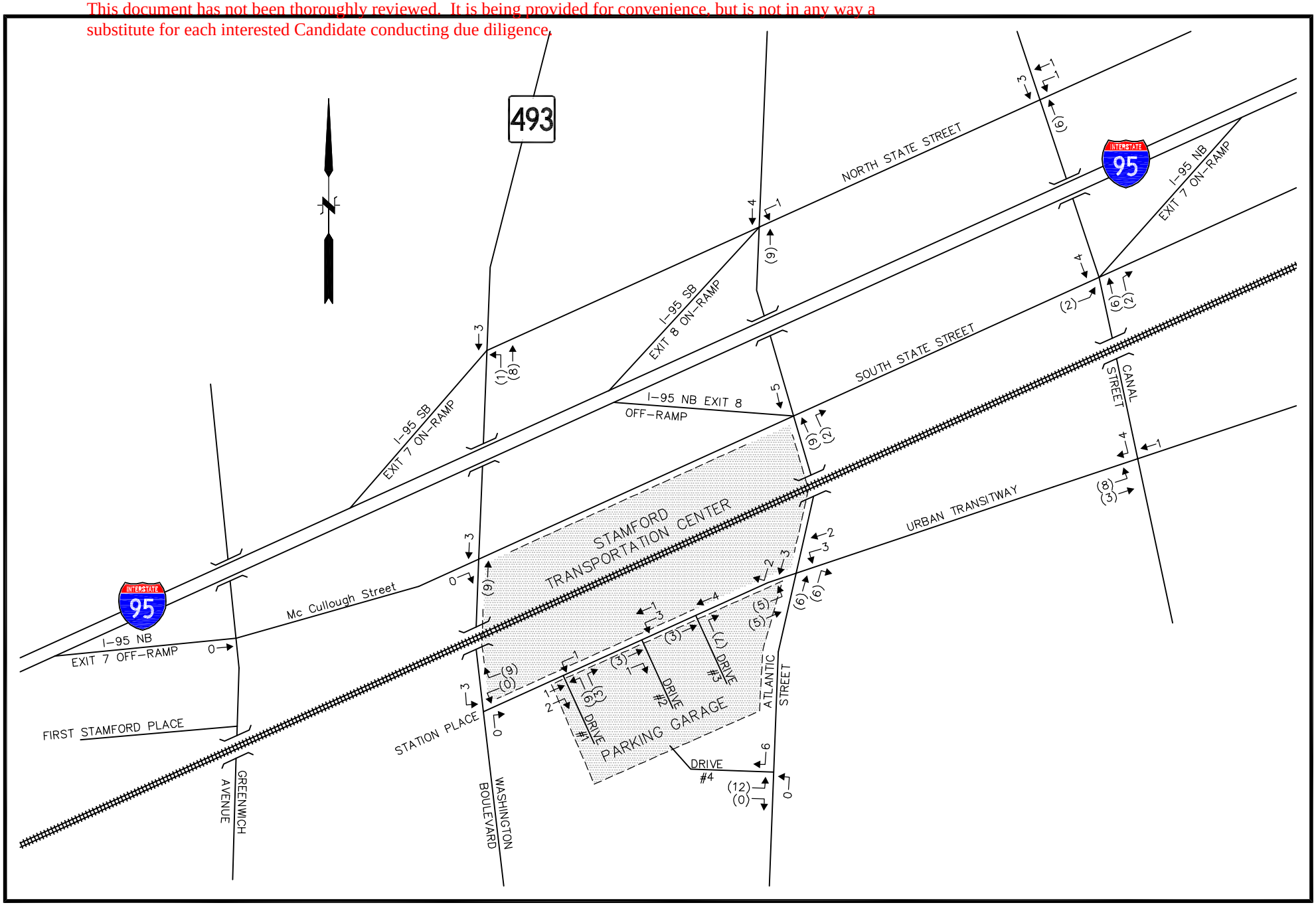

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Proposed Traffic Volumes

The trip generation traffic volumes were added to the 2012 and 2029 No-Action traffic volumes to estimate the 2012 and 2029 Proposed Action traffic volumes, which are provided in *Figures 3-12, 3-13, 3-14 and 3-15*.

Capacity Analysis

The results of the capacity analysis for the 2012 Proposed Action conditions are provided in *Table 3-3*. The analysis indicates that significant levels of delay are expected throughout the study area network during both peak hours under the No-Action condition. Nine of the twelve signalized intersections are expected to operate at LOS E or LOS F during at least one of the peak hours. However, the additional traffic volumes generated by the Proposed Action are not expected to cause a decrease in level of service or significant increase in delay at any of the study area intersections.

The unsignalized driveway intersections for the Stamford Transportation Center garage are expected to operate efficiently at LOS C or better during both peak hours under the No-Action condition. No impact to LOS is expected as a result of the additional trips generated by the Proposed Action.

Table 3-3. 2012 Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Signalized Intersections				
Greenwich Avenue at I-95 NB Off-Ramp	E	E	C	C
Greenwich Avenue at First Stamford Place	E	E	D	D
Washington Boulevard at North State Street	F	F	F	F
Washington Boulevard at South State Street	F	F	F	F
Washington Boulevard at Station Place	C	C	C	C
Atlantic Street at North State Street	F	F	E	E
Atlantic Street at South State Street	F	F	F	F
Atlantic Street at Station Place/Dock Street	C	C	D	D
Canal Street at North State Street	F	F	F	F
Canal Street at South State Street	D	D	F	F
Canal Street at Dock Street	D	D	F	F
Atlantic Street at Garage Driveway 4	A	A	A	A
Two-Way Stop Controlled Intersections				
Station Place at Driveway 1				
Westbound Left	A	A	A	A
Northbound	A	A	C	C
Station Place at Driveway 2				

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Table 3-3. 2012 Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Westbound Left	A	A	A	A
Station Place at Driveway 3				
Northbound	A	A	B	B

The results of the capacity analysis for the 2029 Proposed Action conditions are provided in *Table 3-4*. The results are similar for the 2029 and 2012 Proposed Action conditions. Nine of the twelve signalized intersections operate at LOS F during at least one peak hour, while six of those intersections operate at LOS F during both peak hours. Once again, there is no impact to LOS and no significant increase in vehicle delay at any intersection as a result of the additional trips generated by the Proposed Action. Each of the unsignalized driveway intersections is expected to continue to operate efficiently at LOS C or better under the 2029 Proposed Action conditions.

Table 3-4. 2029 Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Signalized Intersections				
Greenwich Avenue at I-95 NB Off-Ramp	F	F	D	D
Greenwich Avenue at First Stamford Place	F	F	E	E
Washington Boulevard at North State Street	F	F	F	F
Washington Boulevard at South State Street	F	F	F	F
Washington Boulevard at Station Place	D	D	C	C
Atlantic Street at North State Street	F	F	F	F
Atlantic Street at South State Street	F	F	F	F
Atlantic Street at Station Place/Dock Street	C	C	D	D
Canal Street at North State Street	F	F	F	F
Canal Street at South State Street	F	F	F	F
Canal Street at Dock Street	E	E	F	F
Atlantic Street at Garage Driveway 4	A	A	A	B
Two-Way Stop Controlled Intersections				
Station Place at Driveway 1				
Westbound Left	A	A	A	A
Northbound	A	A	C	C
Station Place at Driveway 2				
Westbound Left	A	A	A	A
Station Place at Driveway 3				

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Table 3-4. 2029 Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Northbound	A	A	B	B

Figure 3-12

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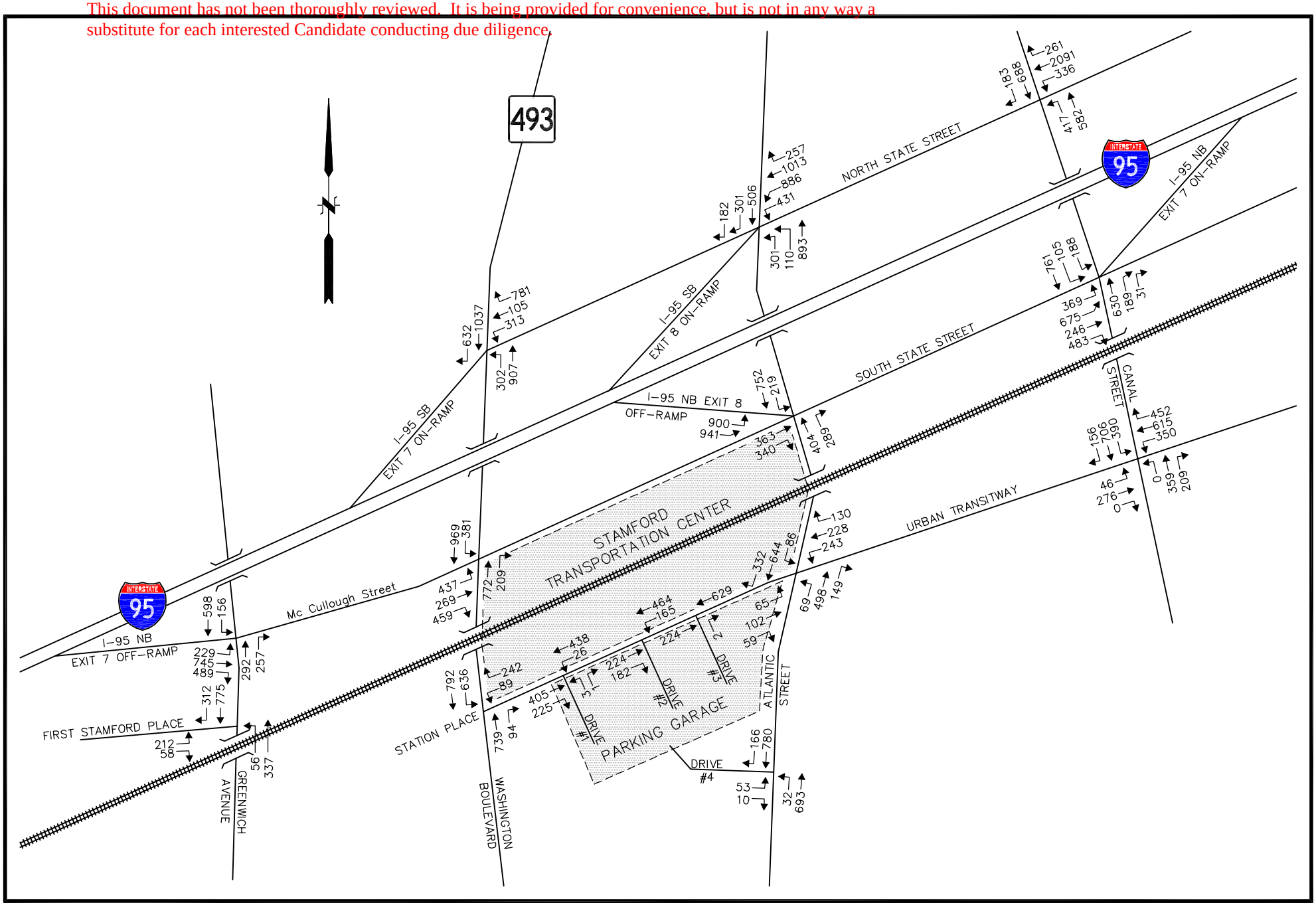

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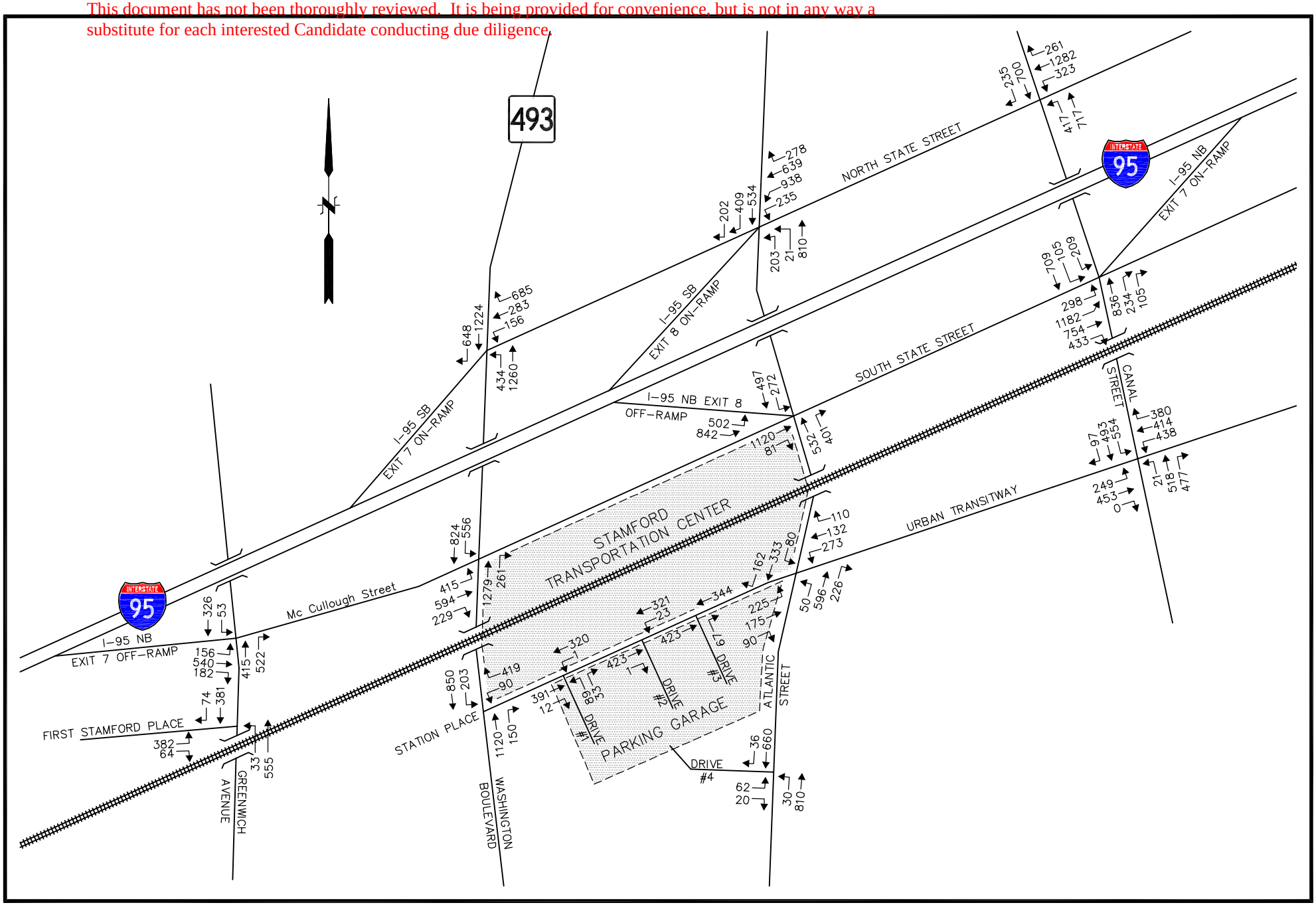

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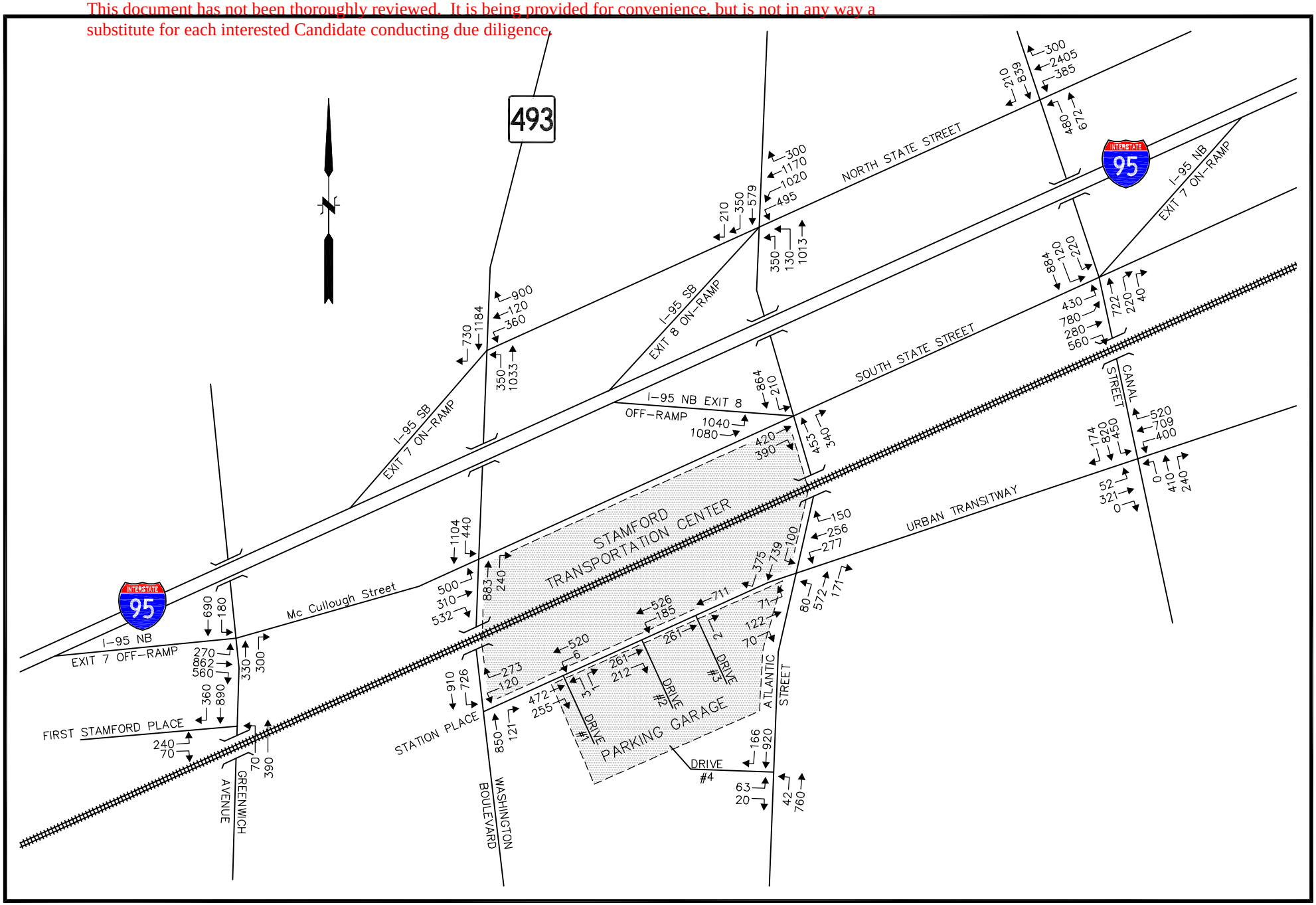

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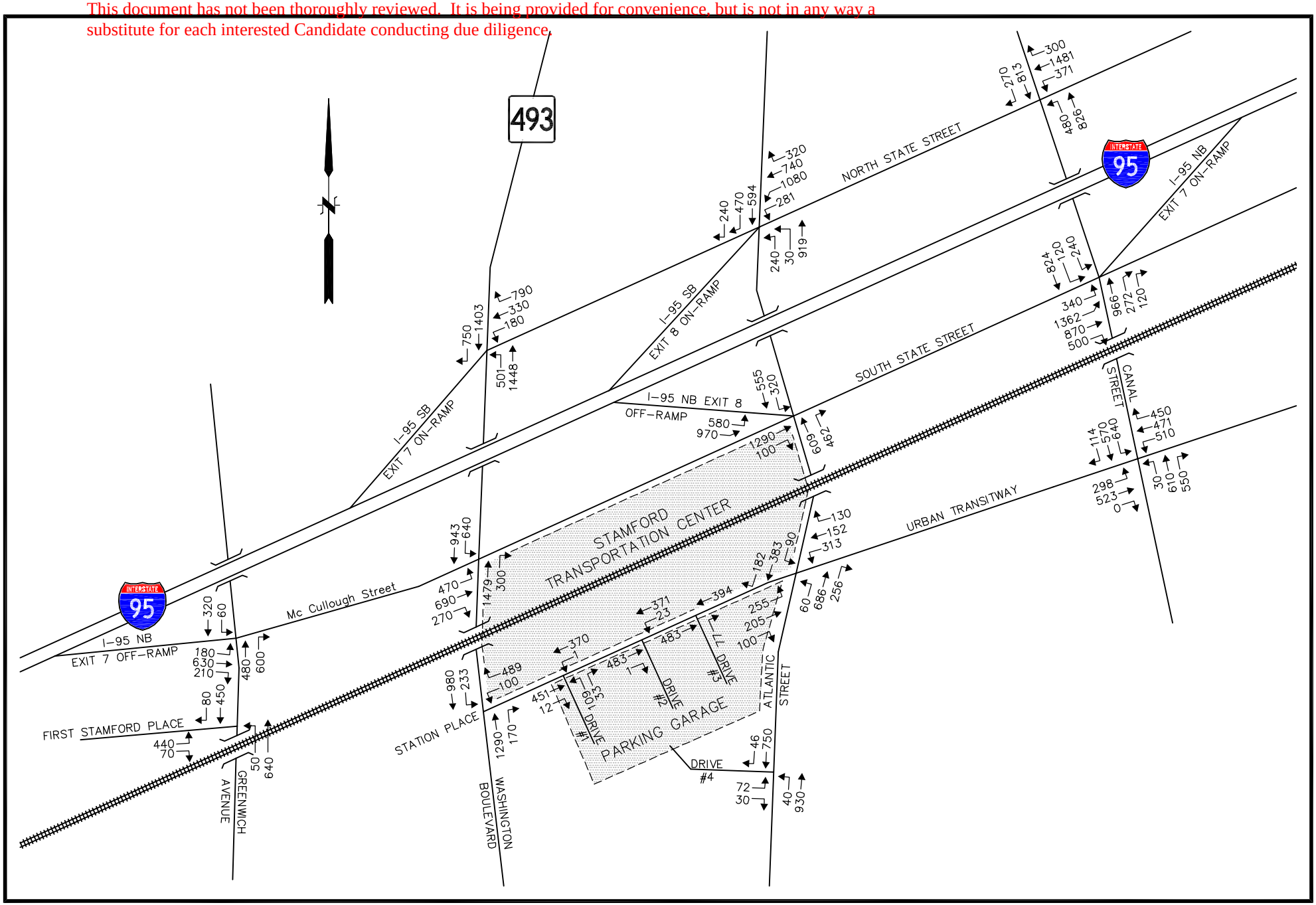

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Parking

Under the No-Action Alternative, the current level of available parking will remain at the facility until such time that the original portion of the garage becomes unsafe for use and it is closed. Parking will be reduced from 1,970 spaces to 1,250 spaces, which is at odds with increasing ridership and parking demand at the facility.

Under the Proposed Action, an additional 280 parking spaces would be provided in the replacement structure. Although these spaces will not fully address the waiting list, the increase will partially fulfill the existing parking demand, which is advantageous compared to replacing the original portion of the garage with a structure of equal size.

The replacement parking garage will require a new Major Traffic Generator Certificate from the STC since the existing structure is already certified and the project will add more than 50 additional parking spaces. The new certificate will be number 394B.

During construction of the replacement garage, temporary loss of parking at the facility will result from demolition of the original portion of the garage until it is completed. Temporary parking alternatives during the construction period are addressed in *Section 2.4.2*.

3.3.3 Mitigation

While significant delay persists throughout the study area network during the morning and afternoon peak hours, the majority of the delay is due to high existing traffic volumes combined with background traffic volume growth and new developments proposed throughout the city.

Since no decrease in LOS and no significant increase in vehicle delay is expected as a result of the additional trips generated by the Proposed Action, no traffic mitigation is necessary or proposed.

3.4 Considerations Relating to Pedestrians and Bicyclists

3.4.1 Existing Conditions

The existing Stamford Transportation Center provides excellent access for both pedestrians and bicyclists. Sidewalks are provided along all of the roadways leading into the transportation center, including Station Place, Washington Boulevard, Atlantic Street, and Dock Street. A pedestrian connection is also provided from North State Street underneath I-95 between Washington Boulevard and Atlantic Street. The connection provides pedestrian traffic signals where it crosses North State Street and again at South State Street.

Two overhead enclosed pedestrian footbridges are provided between the existing parking garage and the station. One footbridge provides access directly to the station concourse from the original garage structure, while the other footbridge serves the station platforms from the garage expansion. Three at grade crosswalks with ADA compliant sidewalk ramps are also provided between the parking garage and the station.

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Bicycle access to the transportation center is provided via a bicycle lane on Dock Street, which was incorporated as part of the Stamford Urban Transitway project. The station provides bicycle racks on both the north and south sides for riders arriving in bicycles.

3.4.2 Impact Evaluation

The No-Action Alternative will not adversely impact pedestrian access at the rail station in the short term. In the long term, following continued degradation and closure of the original portion of the garage, the pedestrian footbridge that accesses the station concourse, the west footbridge, will no longer serve a purpose, although access will be possible at grade and from the garage expansion.

Demolition of the existing parking garage will likely require the removal of the west pedestrian footbridge. It is expected that the footbridge will be replaced in kind under the Proposed Action. No impact is expected for bicycle access.

3.4.3 Mitigation

No mitigation is necessary or proposed since the Proposed Action is not anticipated to result in adverse impacts to the pedestrian and bicycle facilities at the Stamford Transportation Center.

3.5 Considerations Relating to Local Transit

3.5.1 Existing Conditions

The Stamford Transportation Center provides access local transit within the City of Stamford and surrounding municipalities via a bus terminal located north of the station on the opposite side of South State Street. The terminal functions as a hub for the Stamford sub-system of CT Transit, with buses connecting to locations throughout Stamford, Greenwich, Darien, and other nearby Towns. Buses enter and exit the terminal via the driveways located on North State Street beneath the I-95 viaduct. A shuttle bus stand is also provided adjacent to the railroad station along the south side of South State Street for the Commuter Connection shuttles which provide local transportation in the Downtown area.

A taxi stand is provided along the north side of Station Place adjacent to the railroad station. Taxis queue up behind the existing garage awaiting passengers, entering the taxi stand from Station Place westbound.

The Stamford Urban Transitway will include dedicated bus/HOV lanes providing a direct connection to and from the neighborhoods east and south of the station. CT Transit will modify the routes of four local bus lines in order to utilize this new corridor once the construction is complete, resulting in reduced delay and improved level of service for bus passengers. The routes will include CT Transit Routes 43 and 44 as well as the east and central lines for the Commuter Connection.

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3.5.2 Impact Evaluation

The No-Action alternative will not affect local transit facilities at, or access to, the Stamford Transportation Center.

The Preferred Alternative is not expected to impact transit access at the Stamford Transportation Center. The increased parking will provide a benefit not only to users of Metro-North but also for drivers accessing the bus terminal adjacent to the railroad station.

3.5.3 Mitigation

The Proposed Action is not anticipated to result in adverse impacts to the transit facilities associated with the Stamford Transportation Center. Therefore, no mitigation is necessary or proposed.

3.6 Air Quality

3.6.1 Existing Conditions

Mesoscale Analysis

Under the authority of the U.S. Clean Air Act, as amended, the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for concentrations of six air pollutants: carbon monoxide (CO); nitrogen dioxide (NO_2); ozone (O_3); particulate matter 2.5 microns or smaller in diameter ($PM_{2.5}$) and ten microns or smaller in diameter (PM_{10}); sulfur dioxide (SO_2); and lead. Connecticut adopted the national standards, listed in *Table 3-5* and subsequently developed a State Implementation Plan (SIP) to attain and maintain these standards. Primary standards are established to protect public health; secondary standards are established to protect plants and animals and to prevent economic damage.

Table 3-5. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards
	Level	Averaging Time	
Carbon Monoxide (CO)	9 ppm (10 mg/m^3)	8-hour (1)	None
	35 ppm (40 mg/m^3)	1-hour (1)	
Lead (Pb)	0.15 µg/m^3 (2)	Rolling 3-Month Average	Same as Primary
	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide (NO_2)	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
	0.100 ppm	1-hour (3)	None
Particulate	150 µg/m^3	24-hour (4)	Same as Primary

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Table 3-5. National Ambient Air Quality Standards

	Primary Standards			
Matter (PM_{10})				
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual (5) (Arithmetic Mean)	Same as Primary	
	35 µg/m^3	24-hour (6)	Same as Primary	
Ozone (O_3)	0.075 ppm (2008 standard)	8-hour (7)	Same as Primary	
	0.08 ppm (1997 standard)	8-hour (8)	Same as Primary	
	0.12 ppm	1-hour (9)	Same as Primary	
Sulfur Dioxide (SO_2)	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m^3)	3-hour (1)
	0.14 ppm	24-hour (1)		

Source: EPA National Ambient Air Quality Standards (NAAQS), EPA 40 CFR part 50
(1) Not to be exceeded more than once per year.
(2) Final rule signed October 15, 2008.
(3) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
(4) Not to be exceeded more than once per year on average over 3 years.
(5) To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.
(6) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective December 17, 2006).
(7) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
(8) a. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
b. The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
c. EPA is in the process of reconsidering these standards (set in March 2008).
(9) a. EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
b. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.

Air monitoring is conducted throughout Connecticut by the CTDEP. Data collected at the monitoring sites help establish background air quality levels.

The State of Connecticut is divided into two air quality districts: the Greater Connecticut district, which includes Hartford, New London, Tolland, Windham and Litchfield counties, and the New York-Northern New Jersey-Long Island (NY-NJ-CT) district. The NY-NJ-CT district includes Fairfield, New Haven and Middlesex counties in southwestern Connecticut, including Stamford and the project site. Each district is assigned an attainment or non-attainment status with respect to the NAAQS listed in *Table 3-5*.

The entire state is currently in attainment for CO, NO_2, Pb, SO_2 and PM_{10} (EPA, 2010). The state attainment status implies that all regions of the state are in compliance with all standards (i.e., short term and long term; primary and secondary) for a particular pollutant.

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Non-attainment for an air pollutant is assigned when one or more of the standards for the pollutant have been violated in one or more regions of Connecticut. The non-attainment designation that is subsequently applied to a region can reflect the "degree" of non-attainment depending upon a number of factors including the air pollution history in the region, previous designation of the region as either attainment or non-attainment, lack of air pollutant monitoring in the region, and inferences made based on pollutant monitoring performed in adjacent or similar regions (CTDEP, 2005a).

In December 2008, EPA designated both Fairfield and New Haven Counties as non-attainment for $PM_{2.5}$. The CTDEP submitted a State Implementation Plan (SIP) to address the 1997 $PM_{2.5}$ standard in November 2008. A particulate matter measuring station is located at Bridgeport, which mimics the density of development in the downtown Stamford region, providing an estimate of existing conditions in Stamford. At the Bridgeport site, the 3-year average of the weighted annual mean $PM_{2.5}$ concentration from 2006 to 2008 was 12.4 $\mu g/m^3$, which does not exceed 15.0 $\mu g/m^3$ standard. In addition, the 3-year average of the 98th percentile of 24-hour concentrations from 2006 to 2008 at the Bridgeport site is 33.1 $\mu g/m^3$, which does not exceed the 35 $\mu g/m^3$ standard (EPA, 2008).

Ozone concentrations to be compared to the NAAQS for ozone are calculated by taking the 3-year average of the annual 4th highest daily maximum 8-hour ozone averages. Currently the entire state of Connecticut is designated as non-attainment for ozone based on the 2008 ozone standard of 0.075 ppm (CTDEP, 2009). It is important to note that the EPA issued a final rulemaking on March 12, 2008 that tightened the 8-hour ozone standard from effectively 0.085 ppm to 0.075 ppm.

The ambient ozone concentrations at a given location are less dependent on the amount of local emissions than on meteorological conditions, especially wind direction, temperature, and the amount of sunlight. The CTDEP operates an ozone monitoring station located in Greenwich, Connecticut, approximately 5 miles west of Stamford. In 2008, the fourth-highest daily maximum 8-hour average ozone concentrations measured at the Greenwich station was 0.088 ppm, and the three-year average remains above the standard (EPA, 2008), indicating elevated ozone concentrations in the region.

Microscale Analysis

Mobile Sources

Mobile sources refer to emission sources that are designed to move from one location to another during normal operations such as, automobiles, buses, trucks, etc. Carbon monoxide (CO) and ozone are the criteria pollutants of concern. Carbon monoxide is produced by the incomplete combustion of carbon-containing fuels and can found in significant concentrations in vehicle exhaust.

Emissions of PM_{10} and $PM_{2.5}$ are also potential concerns, particularly from diesel engines, which will be primarily limited to the construction-period impacts from diesel-powered construction equipment and is discussed in *Section 3.21*. Analysis of SO_2 and NO_2 is not warranted, since

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transportation sources emit a very small percentage of the total emitted SO_2 (due to the relatively small percentage of sulfur in gasoline and diesel fuels) and particulate emissions (compared with the combustion of fossil fuels for space heating and power generation, incineration, industrial processes and construction activities). While NO_2 is emitted by motor vehicles, it is of primary concern due to its role in the formation of photochemical oxidant smog. Smog is typically measured by ozone formation, which is a regional problem and not unique to Connecticut.

Estimated CO concentrations associated with existing conditions in the project area are described as part of the impact evaluation in *Section 3.6.2*.

Stationary Sources

There are no major stationary sources of air pollutants associated with the existing parking garage or the Stamford Transportation Center. Other minor stationary sources may exist in the general vicinity associated with fuel burning equipment, or heating, ventilation and air conditioning equipment in surrounding buildings, including a back-up generator for the proposed parking structure.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) include 21 air toxics associated with mobile sources that are a subset of the 188 air toxics defined by the Clean Air Act. Of these 21, the EPA has identified six as being priority MSATs, including benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acetaldehyde, acrolein, and 1,3-butadiene. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. (FHWA, 2006)

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using

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EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050 (FHWA, 2009).

MSATs are not currently monitored in the project area. However, the CTDEP conducted a Toxic Air Study in Connecticut (TASC) from 1999-2003 to provide data on ambient levels of toxic air pollutants, also called hazardous air pollutants (HAPs), in Connecticut. This monitoring is the most recent available data and was conducted in the immediate vicinity of six stationary sources of HAPs, and one background site. The closest monitoring location to the project area was approximately 5 miles to the west in Greenwich, Connecticut (CTDEP, 2005b).

The monitoring data showed that for the majority of the air toxics, the levels appear low when compared against Connecticut Department of Public Health proposed annual hazard limiting values (HLVs). For three chemicals, formaldehyde, acetaldehyde and manganese, the ambient levels may be of concern, but were at concentrations similar to those found in other parts of the United States. The study concluded that the carbonyl concentrations (i.e., formaldehyde and acetaldehyde) are likely dominated by motor vehicles, and the same may be true of manganese (NESCAUM, 2005).

Travel Demand Management

The City of Stamford and SWRPA are considering strategies to encourage existing businesses and future development to implement TDM and other volume reduction measures throughout the study area, as further capacity improvements are not feasible at the majority of the intersections. These measures could include incentives for use of carpooling, transit, flex work hours, telecommuting, and walking/biking to work or the Stamford Transportation Center. TDM measures that reduce congestion, reduce vehicle miles of travel, or reduce vehicle trips will also lower emission levels.

3.6.2 Impact Evaluation

Stationary and mobile sources are generators of air pollutants. Greater vehicle volume or increases in the vehicle congestion, especially at intersections, have the potential to lead to increased emissions. Mesoscale or regional air quality impacts are assessed through a conformity determination prepared by CTDOT. Microscale analyses are performed on the project level.

The No-Action Alternative would have no impact on mesoscale air quality although the identified lack of parking at the Stamford Transportation Center is not generally advancing measures to increased access to mass transit and reduce vehicle miles traveled, and subsequent emissions, on regional roadways.

As discussed in *Section 3.1.1*, the Proposed Action is identified in the *South Western Regional Planning Agency Long Range Transportation Plan 2007-2035*. It is not included in the latest regional or state Transportation Improvement Plan because at the time of the TIP preparation the

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preferred scope, cost and funding sources had not yet been developed (Email from Susan Prosi to Leigh Walton at Pitney Bowes, dated Oct 27, 2009).

The 1990 Clean Air Act Amendments (CAAA) require State Implementation Plans (SIPs) to demonstrate how states with non-attainment and maintenance areas will meet federal air quality standards. The U.S. Environmental Protection Agency (EPA) issued final rules on transportation conformity (amended as 40 CFR 93 in 1999) which describe the methods required to demonstrate SIP compliance for transportation projects. The Conformity process ensures that transportation projects contained in Long Range Plans of the regional metropolitan planning organizations (MPOs) and State Transportation Improvement Programs (STIPs) meet the goals of the NAAQS by means of each state's Statewide Implementation Plan (SIP). The proposed project is included in the *South Western Regional Planning Agency Long Range Transportation Plan 2007-2035*.

In general, the conformity process dictates that a proposed project not cause any new violations of NAAQS for pollutants of concern, or increase the frequency or severity of existing violations, or delays the attainment of NAAQS.

As mentioned above, the entire state, including the New York-Northern New Jersey-Long Island (NY-NJ-CT) district, is in moderate non-attainment for ozone. The CTDOT performed an ozone air quality conformity analysis (CTDOT, 2009a). Both CTDOT and the SWPRA have determined that projects included in the *South Western Regional Planning Agency Long Range Transportation Plan 2007-2035* and the *South Western Region FFY 2010-2013 TIP* conform to the air quality requirement of 40 CFR 93.

The NY-NJ-CT district is in non-attainment for $PM_{2.5}$. The CTDOT performed a $PM_{2.5}$ air quality conformity analysis (CTDOT, 2009b). Both CTDOT and the SWPRA have determined that projects included in the *South Western Regional Planning Agency Long Range Transportation Plan 2007-2035* and the *South Western Region FFY 2010-2013 TIP* conform to the air quality requirement of 40 CFR 93. In addition, although the Proposed Action is located in a $PM_{2.5}$ non-attainment area, a $PM_{2.5}$ localized or "hot spot" analysis is not required since the project is not of the type listed in 40 CFR 93.123(b)(1).

The Stamford Transportation Center is located in a CO maintenance area and therefore is required to perform a localized or "hot spot" analysis for projects affecting intersections at a Level of Service (LOS) D, E or F or that will change to a D, E, or F because of traffic volumes related to the project in compliance with 40 CFR 96.123(a)(1)(ii). The CO microscale analysis to determine localized impacts is presented in the following section.

Microscale Analysis

At the local or microscale level, CO is the transportation-related pollutant of concern. In order to assess local air quality impacts from the Proposed Action, a microscale air quality modeling analysis for CO was conducted. The No-Action Alternative is used as a baseline for comparison.

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Methodology

The traffic impact analysis described in *Section 3.2* identified roadway intersections with poor level of service (LOS) in the existing and future year conditions. Based on the traffic impact analysis results and CTDEP and EPA air quality modeling guidelines, study intersections listed in *Table 3-6* were considered for microscale air quality modeling.

EPA screening procedures in the guidance document *Guidelines for Modeling Carbon Monoxide from Roadway Intersections* (EPA, 1992) was used to select locations for detailed analysis. The EPA guidance specifies that all signalized locations with existing or projected LOS of D or worse should be ranked by total volume and by delay, and that detailed modeling should be conducted for at least the three worst intersections in each ranking.

Traffic volumes and LOS (delay of traffic) for the existing conditions in 2009, the no-build conditions in 2012 and 2029, and the build conditions in 2012 and 2029 were calculated using Synchro Professional Software, Version 7. Twelve signalized intersections and three two-way stop controlled intersections were analyzed in the project vicinity (*Figure 3-2*). The network includes the latest available volumes provided by CTDOT and represents the existing 2009 roadway conditions and the 2012 and 2029 No-Action volumes provided by the CTDOT Bureau of Planning. The intersection capacity analysis was calculated during the weekday morning and afternoon peak hours. The results of the traffic analysis are provided in *Table 3-6*.

For the purposes of the air quality modeling, a ranking of the traffic volumes and LOS for each category (existing 2009 conditions and Proposed Action conditions for 2012 and 2029) were completed for the peak morning and afternoon hours for the 12 signalized intersections, totaling 6 categories at each intersection. The three intersections with the highest traffic volumes in each category are highlighted in *Table 3-6*. The intersections in each category with a LOS of D, E or F are also highlighted. The numbers of high-ranking traffic volumes and poor level of service are tallied in the last two columns of *Table 3-6*.

The EPA guidance recommends that the top three intersections with the highest volumes and the top three intersections with the worst delay (LOS) be modeled. As shown in *Table 3-6*, three intersections tied for the third highest traffic volume. In addition, there are four intersections with a LOS of D or worse for all six modeling scenarios considered. Three of these intersections are also ranked within the top three for highest volumes. Therefore, a total of six intersections were modeled in the microscale air quality analysis:

- Washington Boulevard at North State Street
- Washington Boulevard at South State Street
- Atlantic Street at North State Street
- Atlantic Street at South State Street
- Canal Street at North State Street
- Canal Street at South State Street

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Table 3-6. Summary of Intersection Volumes and LOS Rankings

Signalized Intersections	Weekday Morning						Weekday Afternoon						Number of Volume Counts in Highest 3	Number of LOS Ratings D, E, or F
	2009 Existing		2012 Proposed		2029 Proposed		2009 Existing		2012 Proposed		2029 Proposed			
	Volume (vph)	Delay (LOS)	Volume (vph)	Delay (LOS)	Volume (vph)	Delay (LOS)	Volume (vph)	Delay (LOS)	Volume (vph)	Delay (LOS)	Volume (vph)	Delay (LOS)		
Greenwich Avenue at I-95 NB Off-Ramp	2,420	**E**	2,766	**E**	3,192	**F**	1,770	B	2,194	C	2,480	**D**	0	4
Greenwich Avenue at First Stamford Place	1,590	C	1,750	**E**	2,020	**F**	1,260	**D**	1,489	**D**	1,730	**E**	0	5
Washington Boulevard at North State Street	**3,250**	**E**	4,077	**F**	4,677	**F**	**3,570**	**D**	**4,690**	**F**	**5,402**	**F**	**4**	**6**
Washington Boulevard at South State Street	2,580	**D**	3,495	**F**	4,009	**F**	3,060	**F**	4,158	**F**	4,792	**F**	0	**6**
Washington Boulevard at Station Place	1,700	B	2,592	C	3,000	**D**	1,790	C	2,832	C	3,262	C	0	1
Atlantic Street at North State Street	**3,800**	**F**	**4,880**	**F**	**5,617**	**F**	**3,110**	C	**4,269**	**E**	4,914	**F**	**5**	5
Atlantic Street at South State Street	3,130	**F**	**4,208**	**F**	**4,797**	**F**	3,090	**D**	4,247	**F**	**5,086**	**F**	**3**	**6**
Atlantic Street at Station Place/ Stamford Urban Transitway	1,290	C	2,605	C	2,983	C	1,160	C	2,452	**D**	2,812	**D**	0	2
Atlantic Street at STC Garage Driveway #4	700	A	1,734	A	1,971	A	610	A	1,618	A	1,868	B	0	0
Canal Street at North State Street	**3,940**	**E**	**4,558**	**F**	**4,906**	**F**	3,100	**D**	3,935	**F**	4,541	**F**	**3**	**6**
Canal Street at South State Street	2,970	C	3,677	**D**	4,256	**F**	**3,920**	**D**	**4,865**	**F**	**5,614**	**F**	**3**	5
Canal Street at Urban Transitway	0	-	3,559	**D**	4,096	**E**	0	-	4,094	**F**	4,766	**F**	0	4

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Ambient CO concentrations are typically at their highest near street intersections where motor vehicles are idling in a queue or moving at low speeds. The maximum ambient CO concentrations at the subject intersections were estimated using the EPA model CAL3QHC, version 2.0 (EPA, 1995). CAL3QHC is a line source dispersion model and traffic algorithm for estimating vehicular queue lengths at signalized intersections. The CO microscale analysis examined existing conditions (2009), build scenario at opening year (2012) and build scenario at design year (2029) during peak traffic conditions.

CO concentrations are estimated at specified locations, called sensitive receptors, which are located in the vicinity of the subject intersection where the maximum CO concentrations are likely to occur and where the general public is likely to have access. These receptors are chosen according to the criteria described in the Guidelines for Modeling Carbon Monoxide From Roadway Intersections (EPA, 1992) and the locations are shown in *Appendix C*. Receptors are generally located within 100 feet of an intersection, where people are waiting to cross the roadway, along sidewalks adjacent to the subject intersections and associated traffic queues. Receptors are generally located at least 10 feet outside of the mixing zone of the free flow and queue links, which is the edge of the roadway.

The maximum modeled CO concentrations are calculated as 1-hour averages and converted to 8-hour average concentrations using a conservative multiplication factor of 0.7. The CTDEP recommends conservative background ambient CO concentration of 3.0 ppm, which is added to the 8-hour estimates for comparison to the NAAQS.

CAL3QHC requires various meteorological, site, and traffic information as model inputs. EPA recommended values were used for meteorological parameters including wind speed, stability class, and mixing height. A 360 degree range of wind directions was considered in 10 degree increments. Values of meteorological variables used in the modeling analysis are provided in *Appendix C*.

The lane configurations and site layout of the modeled intersections under full build conditions were used to obtain free-flow and queue link coordinates and other site-specific input parameters. The existing intersection geometry was used to represent the proposed conditions. Signal timing (average red time and signal cycle length), traffic volumes, and other traffic parameters for the existing and Proposed Action conditions were estimated from traffic counts and peak hour capacity analyses performed as part of the traffic impact analyses (*Section 3.2*). Values of traffic and site variables used in the analysis are provided in *Appendix C*.

CO emission factors for idling and moving vehicles, which are required as inputs to CAL3QHC, were calculated using the EPA mobile source emission factor model MOBILE6.2 (EPA, 2003). Emission factors for the subject intersections were calculated for 2009, 2012 and 2029. The MOBILE6.2 model runs were performed using input parameter values typically used by the CTDEP, interpolated for the project completion year, as well as site-specific information for each intersection (see *Appendix C*). The emission factors associated with Interstate 95 (freeway freeflow), Interstate 95 ramps, local streets, and idling speed of 2.5 mph were selected for use in CAL3QHC (*Table 3-7*). Input and output files for MOBILE6.2 are included in *Appendix C*.

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Table 3-7. MOBILE6.2 Emission Factors

Road Type and Vehicle Speed	Emission Factor		
	2009	2012	2029
Freeway Freeflow @ 55 mph (g/mi)	12.524	10.832	8.738
Local @ 30 mph (g/mi)	11.730	10.150	8.189
Ramp Freeflow @34.6 mph (g/mi)	14.972	12.574	9.784
Idle @ 2.5 mph (g/mi)	26.778	22.538	17.797
Idle rate (g/hr)	66.945	56.345	44.493

Analysis Results

Results of the microscale analysis for the subject intersections are summarized in *Table 3-8*. The table shows the estimated maximum 1-hour and 8-hour CO concentrations for existing (2009) conditions, as well as the No-Action and Proposed Action conditions for the 2012 opening year and the 2029 design year. The concentrations in the table include the assumed regional background 8-hour CO concentration of 3 ppm. Model results at each receptor location are included in *Appendix C*.

Although the study area intersections are predicted to experience increased traffic resulting from the Proposed Action, the maximum 1-hour and 8-hour CO concentrations at the subject intersections are predicted to remain constant or decrease as compared to existing conditions. The steady or decreasing emissions over time is largely due to newer vehicles with lower emission rates replacing older vehicles. Furthermore, the CO concentration estimates are well below the 1-hour and 8-hour CO standards of 35 and 9 ppm, respectively. Estimated maximum 8-hour CO concentrations are generally within 2 to 3 ppm of the assumed ambient 8-hour background CO concentration of 3.0 ppm. The microscale air quality analysis demonstrates that the Proposed Action will not result in exceedance of the CO NAAQS.

Stationary Sources

There are no proposed mechanical or other features of the replacement parking garage that would create significant new stationary sources of air emissions. Therefore, no air quality impacts from stationary sources will result from the Proposed Action.

Mobile Source Air Toxics

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of an environmental impact evaluation.

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Table 3-8. Predicted Maximum CO Concentrations for Existing and Proposed Conditions

Air Quality Standard[3]	Maximum CO Concentration (ppm)[1,2]									
	1-Hour					8-Hour				
	35 ppm					9 ppm				
	2009	2012		2029		2009	2012		2029	
Intersection	Existing	Opening Year (No-Action)	Opening Year (Proposed Action With Mitigation)	Design Year (No-Action)	Design Year (Proposed Action With Mitigation)	Existing	Opening Year (No-Action)	Opening Year (Proposed Action With Mitigation)	Design Year (No-Action)	Design Year (Proposed Action With Mitigation)
Washington Boulevard at North State Street	7.5	7.5	7.6	7.1	7.1	5.2	5.2	5.3	5.0	5.0
Washington Boulevard at South State Street	7.1	7.0	7.0	6.8	6.8	5.0	4.9	4.9	4.8	4.8
Atlantic Street at North State Street	7.8	7.8	7.8	7.3	7.3	5.5	5.5	5.5	5.1	5.1
Atlantic Street at South State Street	8.2	8.0	8.0	7.5	7.6	5.7	5.6	5.6	5.2	5.3
Canal Street at North State Street	8.2	7.9	7.9	7.4	7.4	5.7	5.5	5.5	5.2	5.2
Canal Street at South State Street	7.6	7.5	7.5	7.1	7.1	5.3	5.2	5.2	5.0	5.0

[1]Maximum of CO concentrations calculated at all receptor locations.

[2]CTDEP recommended 8-hour background CO concentration of 3.0 ppm, and a multiplication factor of 0.7 to convert from 1-hour to 8-hour averages.

[3]Connecticut and National Ambient Air Quality Standards (NAAQS).

While a basic analysis of the likely MSAT emission impacts of the No-Action Alternative and Proposed Action are included in this document, available technical tools do not enable the prediction of project-specific health. A further discussion of the uncertainty associated with project-specific health impacts due to MSATs is included in *Appendix C*.

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the Federal Highway Administration (FHWA) entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives* (FHWA, 2009).

The FHWA developed a tiered approach for analyzing MSATs, depending on specific project circumstances. The FHWA has identified three levels of analysis:

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1. No analysis for projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The Proposed Action has low potential for MSAT effects and therefore the qualitative analysis presented below is justified.

When comparing MSAT emissions from different alternatives, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Proposed Action is slightly higher than that for the No-Action Alternative, because of the increased capacity of the proposed parking garage that would not otherwise occur in the area. This increase in VMT means MSAT generated by the Proposed Alternative would probably be higher than the No-Action Alternative in the study area. There could also be localized differences in MSAT from indirect effects of the project such as associated access traffic, or emissions of evaporative MSAT (e.g., benzene) from parked and idling cars.

The number of trips generated from the Proposed Action is approximately 14% greater than in the No-Action Alternative. For both the No-Action and Proposed Action Alternatives, emissions are virtually certain to be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72% from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future than they are today. Consequently, no adverse impact to air quality resulting from MSAT emissions is anticipated to occur from the Proposed Action.

Project-Level Conformity Determination

As discussed above, Federal regulations concerning the Clean Air Act Amendments conformity of transportation projects developed, funded or approved by the USDOT and by metropolitan planning organizations (MPOs) are contained in 40 CFR 93. The Proposed Action is within the boundary of the South Western Regional Planning Agency MPO and the respective Regional Transportation Plans is the *South Western Regional Planning Agency South Western Region Long Range Transportation Plan 2007-2035*, adopted May 8, 2007.

In accordance with 90 CFR 93.115(a), the applicable criteria and procedures for determining the conformity of a project which is not from a conforming Transportation Plan and TIP are listed in Table 1 of 40 CFR 93.109(b). All of these criteria have been determined to be satisfied for the Proposed Action as follows:

- Transportation Control Measures (TCMs) – This project does not interfere with the implementation of any TCM in the current State Implementation Plan (SIP).

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- Currently Conforming Plan and TIP – The *South Western Region Long Range Transportation Plan 2007-2035* and the *2011 Statewide Transportation Improvement Program (STIP)*, were found to be in conformance. The Proposed Action is included in the *South Western Region Long Range Transportation Plan 2007-2035*.

- CO, PM_{10} and $PM_{2.5}$ Hot Spots – The project will not contribute to any new violations of the existing CO standards as demonstrated by the microscale analysis. PM_{10} and $PM_{2.5}$ hot spot analyses are not required since the project is not of the type included in 40 CFR Part 93.123(b)(1).

- PM_{10} and $PM_{2.5}$ Control Measures – There are no PM_{10} or $PM_{2.5}$ control measures in the current approved State Implementation Plan (SIP). However, a revision to the SIP for $PM_{2.5}$ was submitted to EPA on Nov 18, 2008 and EPA has yet to take action on this SIP revision. These control measures consist of the following: (1) Control of sulfur dioxide emissions from power plants and other large stationary sources, Section 22a-174-19a of the Regulations of Connecticut State Agencies (RCSA) (*submitted in part*); (2) VOC reductions from the manufacture and use of adhesives and sealants, RCSA section 22a-174-44; (3) Outdoor wood burning furnace restrictions, Section 22a-174k of the Connecticut General Statutes; and (4) *General Permit to Construct and/or Operate a New or Existing Distributed Generation Resource* (CTDEP, 2008). The Proposed Action will not interfere with any of the proposed control measures if they are approved as part of the SIP.

- Emissions Budget and/or Interim Emissions – This project is included in the current *South Western Region Long Range Transportation Plan 2007-2035* and has been demonstrated to be consistent with the motor vehicle emissions budgets in the State Implementation Plan as evidenced by (1) *Connecticut Department of Transportation Ozone Air Quality Conformity Determination Report for the 2007 Regional Transportation Plans and the FY 2007-2011 Transportation Improvement Programs*, revised September 2009; and (2) *Connecticut Department of Transportation PM 2.5 Air Quality Conformity Determination Report for the 2007 Regional Transportation Plans and the FY 2007-2011 Transportation Improvement Programs*, revised September 2009.

In summary, the Proposed Action has been determined to be in conformity with the Clean Air Act, as amended, pursuant to applicable U.S. EPA regulations.

3.6.3 Mitigation

Mesoscale and Microscale Analysis

It is not anticipated that any short or long-term adverse air quality impacts from increased traffic will occur as a result of the Proposed Action. Therefore, no traffic-related air quality mitigation measures are required.

No mitigation measures are necessary to reduce stationary sources of air pollution since no increases in these sources are expected. Construction-related air quality impacts and associated mitigation are discussed in *Section 3.21*.

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MSAT Mitigation Strategies

No specific mitigation for MSATs is proposed since, under the Proposed Action in the design year (2029), reduced MSAT emissions are expected in the immediate area of the project due to EPA's MSAT reduction programs. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will result in substantial reductions in MSAT emissions that, over time, will cause region-wide MSAT levels to be significantly lower than today.

3.7 Noise

3.7.1 Existing Conditions

The Federal Transit Administration (FTA) has established a similar set of metrics based on land use category for noise impacts from transit projects, as presented in *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06, May 2006). These criteria are presented in *Table 3-9*. While no specific allowable levels of noise are presented, methodology for assessing no impact, moderate impact, and severe noise impacts for the different land use categories are provided based on existing ambient noise conditions (FTA, 2006).

Table 3-9. FTA Land Use Categories and Metrics

Land Use Category	Noise Metric	Description of Land Use Category
1	Outdoor Hourly Equivalent Sound Level L_{eq} (h)	Tracts of land where quiet conditions are essential to the intended purpose of the land. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor day-night average sound level L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Hourly Equivalent Sound Level L_{eq} (h)	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

In support of the 1999 FONSI for the construction of the parking garage expansion noise monitoring and modeling was performed in 1996. The modeling and monitoring results reported in the FONSI are summarized in *Table 3-10*. The results show that at the time of the parking garage expansion existing noise levels (Leq) were measured or estimated to range from 62 to 65 dBA in the residential areas and 67 to 68 dBA in adjacent commercial areas. The 1999 FONSI also modeled future (2020) noise conditions with and without the parking garage expansion. The results, which are presented in *Table 3-10,* show a 1 to 2 dBA increase over the 1996 ambient conditions regardless of the construction of the garage expansion, a result which likely reflects the influence mobile noise sources from the Interstate 95 and rail corridor on

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ambient sound conditions in the area of the Stamford Transportation Center. The modeled "2020 Build Condition" is expected to provide a conservative estimate of current ambient noise conditions in the project area.

Table 3-10. Estimated Sound Levels from 1999 FONSI for the Stamford Transportation Center Parking Garage Expansion

Receptor	Location	1996 Noise Levels L_{eq} (dBA)	No-Build with Background Growth 2020 L_{eq} (dBA)	2020 Built Condition** L_{eq} (dBA)
1	Atlantic Street	65†	67	67
2	Atlantic Street	62*	64	64
3	Henry Street	64*	64	64
4	MetroCenter	68†	69	69
5	Station Place	67*	68	68

*Monitoring results
† Model prediction
**Assumed to provide a conservative estimate of 2010 existing conditions

In order to identify any stationary noise sources associated with the existing parking garage, a site visit was conducted on February 19, 2010. On the north side of the existing portion of the garage structure is a small vent, which was observed while it was operating and did not generate significant noise. An emergency generator and pad-mount transformer are located at the corner of Atlantic Street and the southern access road for the garage expansion, but are not significant sources of noise.

3.7.2 Impact Evaluation

The No-Action Alternative will not result in a change to noise levels received at sensitive receptors located near the Stamford Transportation Center.

In order to determine potential noise impacts resulting from the Proposed Action, the methodology outlined in *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06, May 2006) was used. The FTA methodology recommends using screening distances to assess impacts to sensitive receptors or land use categories. For a parking facility, the FTA guidance assumes 1000 operations (i.e., trips into and out of the parking garage) during the peak hour or transit activity. The methodology then establishes screening distances within which sensitive receptor should be identified. Those distances are 125 feet for areas with no obstruction between the source (i.e., parking garage) and the receptor, and 75 feet if there is an intervening building. If potential uses within the sensitive land use categories are identified within the screening distance, additional analysis should be performed to assess the potential level of impacts. If none of these uses are identified, no adverse impacts are expected.

Traffic analyses for existing and full-build conditions estimate maximum peak hour trip generation for the full-build garage complex to be 845 vehicles per hour, which is less than the assumed value of 1,000 vehicles per hour in the FTA methodology. Consequently, the screening distances used provide a conservative estimate since they are based on a higher number of operations during the peak hour. Screening distances are 125 feet for areas north

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and west of the original portion of the existing garage structure, and 75 feet for areas east and south of the original structure since the garage expansion intervenes.

During the February 19, 2010 site visit, the project area was screened for potential noise receptors. Northwest of the original portion of the garage structure, land use is dominated by Station Place, the railway station, and the rail line and Interstate 95 corridor. Located east and southeast of the structure are several residences located along Atlantic Street, the nearest of which is located approximately 210 feet from the original portion of the garage. The 2002 garage expansion is located in-between the original portion of the garage and these residences. Several other residences are located along Henry Street, including the new Metro Green Apartments, although these are located farther away from the Transportation Center than the residences along Atlantic Street. A church is located at the corner of Henry Street and Washington Boulevard approximately 500 feet southwest of the garage.

In summary, no land uses in FTA Category 1, 2, or 3 (*Table 3-9*) were identified within the screening distances. Since no land uses that may include sensitive receptors are located within the screening distances, based upon the results of the FTA transit screening methodology, no significant noise impacts from the Proposed Action are anticipated. In addition, no new significant stationary noise sources are anticipated to result from the Proposed Action.

3.7.3 Mitigation

No mitigation is necessary or proposed since no adverse noise impacts are anticipated from the Proposed Action.

3.8 Socioeconomic Resources

3.8.1 Existing Conditions

Demographics

This section provides an overview of the demographics in the vicinity of the Stamford Transportation Center and in City of Stamford, and the surrounding area based on information available from the U.S. Census Bureau, the Connecticut Economic Resource Center, US EPA, and South Western Regional Planning Agency.

According to 2009 data from the Connecticut Economic Resource Center (CERC, 2010) 2000, the Stamford population is approximately 118,067. The population is 49% male and 51% female, with 35% of the population between the ages of 25 and 49. While the population in Stamford increased by approximately 10,000 residents from 1990 to 2009, projections for 2009 to 2014 provided by the Connecticut Economic Resource Center (CERC, 2010) indicate that the populations of both the City and County are expected to decrease approximately 0.6% over the five year period.

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As expected for an urban area, Stamford has an average population density of 3,120 persons per square mile, slightly more than double the population density of Fairfield County and nearly 4.5 times the state-wide population density. The area immediately around the Stamford Transportation Center has a very low population density due to the commercial/industrial character of the area which is a transition from the downtown area north of Interstate 95 and the residential areas in the south end. Population density within the residential areas is typically for the rest of Stamford and is in the range of 1000-7500 persons per square mile (EPA, 2010).

A total of 49,466 housing units were reported in Stamford in 2008, with approximately 46% of those being single units and approximately 54% owner occupied in 2000 (CERC, 2010). These statistics, which are lower than the percentages for Fairfield County and the state as a whole, reflect the multifamily housing and rental units typical of an urban area.

Environmental Justice

Environmental Justice (EJ) populations are described as minority and low income populations. Executive Order 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations requires federal agencies to avoid disproportionately high and adverse human health and environmental effects on minority and low income populations, and Title VII of the Civil Rights Act of 1964 requires nondiscrimination in any federally funded activities. Consideration of EJ populations is considered during current and future planning certification reviews including the development of Statewide Transportation Improvement Program (STIP).

According to the 2000 U.S. Census, the City of Stamford's racial and ethnic composition is 69.8% white, 15.4% Black or African American, 5.0% Asian, 0.2% American Indian and Alaska Native, 6.5% other, and 16.8% Hispanic or Latino of any race. The Stamford population has a lower percentage of white residents compared to the U.S. population average of 75.1%. Stamford has a higher Black or African American and Asian population compared to the U.S. averages of 12.3% and 3.6%, respectively. There is also a higher population of residents of Hispanic or Latino ethnicity in Stamford, as compared to 12.5% nationally. In the area of the Stamford Transportation Center, in residential areas to the north and south, 40% or greater of the residents below to a minority group (EPA, 2010).

According to the U.S. Census data for 2000, the percentage of Stamford families and individuals below the poverty level is less than the U.S. average. In Stamford, 5.4% of families are below the poverty level, compared with 9.2% in the U.S., and similarly 7.9% of individuals in Stamford as compared to 12.4% in the U.S. are below the poverty level. In the area of the Stamford Transportation Center, 30-40% of the population is below the poverty level (EPA, 2010).

Identification of EJ populations in the Stamford area was done as part of the *South Western Region Environmental Justice Annual Assessment* (2007). This report is prepared by SWRPA to assess the Region's transportation planning programs and its products, such as the long range transportation plan and the transportation improvement program, for compliance with the guiding principles of EJ. The goals of this assessment are to assure that transportation plans and programs do not have an adverse impact on communities of concern; ensure full participation

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on the transportation decision-making process; and prevent the reduction or denial of benefits by communities of concern. SWRPA identified communities of concern any U.S. Census block group meeting or exceeding defined thresholds for: percent of minority population, per capita income, percent of households receiving public assistance income, and percent of persons below the poverty level. The Census blocks containing the Stamford Transportation Center were included in the communities of concern, a finding that is consistent with US EPA EJ mapping.

Employment and Income

The total number of employed Stamford residents as of 2008 is estimated by the Connecticut Department of Labor at 63,710 (annual average). As shown in *Table 3-11*, Stamford has a higher unemployment rate than the national, Connecticut, and average rate for the Bridgeport-Stamford Labor Market Area, in which Stamford is one of 25 cities and towns which comprise the LMA. The Labor Market Area (LMA) is defined by the U.S. Bureau of Labor Statistics as an economically integrated geographic area within which individuals can reside and find employment within a reasonable distance or can readily change employment without changing their place of residence.

Table 3-11. 2008 Annual Average Employment

LMA/Towns	Labor Force	Employed	Unemployed	Unemployment Rate
Stamford	66,853	63,710	3,143	4.7
Bridgeport-Stamford LMA	475,900	450,840	25,060	5.3
Connecticut	1,876,144	1,769,233	106,911	5.7
United States	154,286,000	145,362,000	8,924,000	5.8

The Connecticut Department of Labor records employment trends for the state, LMA, and individual towns (*Table 3-12*). Both the labor force and residential employment in the Bridgeport-Stamford LMA and in Stamford have increased between 2000 and 2008. Although the absolute numbers of jobs have increased in this time period, the unemployment rate in Stamford and the Bridgeport-Stamford LMA has increased from 4.3% and 2.1% to 4.7% and 5.3%, respectively.

Table 3-12. Labor and Employment Trends

	2000	2008	# Change	% Change
Labor Force*				
Stamford	63,681	66,853	3,172	4.7
Bridgeport-Stamford LMA	448,048	475,900	27,852	5.9
Employment*				
Stamford	60,947	63,710	2,763	4.3
Bridgeport-Stamford LMA	438,736	450,840	12,104	2.7

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Table 3-12. Labor and Employment Trends

	2000	2008	# Change	% Change
Unemployment Rate (%)				
Stamford	4.3	4.7	0.4%	
Bridgeport-Stamford LMA	2.1	5.3	3.2%	

*Note: By place of residence

Based on household income data provided by the 2000 U.S. Census, the City of Stamford's median household income was $60,556 in 1999 dollars – approximately $4,693 lower than the median household income for Fairfield County. As shown in *Table 3-13*, almost one fifth (8,232 households) of Stamford's households earned between $50,000 and $74,999 in 1999.

Table 3-13. Distribution of Households by Income (1999)

	Stamford		Fairfield County	
	# Households	% of Total	# Households	% of Total
Less than $10,000	3,277	7.2	19,717	6.1
$10,000 to $14,999	2,045	4.5	13,103	4.0
$15,000 to $24,999	3,780	8.3	25,495	7.9
$25,000 to $34,999	4,010	8.8	27,018	8.3
$35,000 to $49,999	5,961	13.1	39,954	12.3
$50,000 to $74,999	8,232	18.1	57,797	17.8
$75,000 to $99,999	5,495	12.1	40,664	12.5
$100,000 to $149,999	6,216	13.7	45,708	14.1
$150,000 to $199,999	2,565	5.6	19,952	6.2
$200,000 or more	3,873	8.5	34,995	10.8
Total	45,454	100%	324,403	100%
Median Household Income	$60,556		$65,249	

Source: 2000 U.S. Census

According to CERC data on businesses in Stamford in 2005, nearly half the establishments and half of the employment was based in the service sector. Businesses in the Trade and Finance, Insurance, and Real Estate Sectors, were the next highest employers, each providing approximately 17% of the employment in Stamford. The top five major employers in Stamford reflect the business profile for the city. In 2006, they were General Electric Capital Corporation, Pitney Bowes, UBS Warburg, Stamford Hospital, and Stamford Town Center (CERC, 2010).

Based on 2000 data presented in the Stamford CERC Town Profile, there is a net influx of working commuters into Stamford. While approximately 16,000 Stamford residents leave the City to commute to work, nearly 24,000 workers commute into Stamford. Most of these commuters are travelling to or from communities located on the New Haven Railroad line (CERC, 2010).

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3.8.2 Impact Evaluation

Demographics

No changes in demographics will result from the No-Action Alternative. Since the Proposed Action involves no addition or removal of residences, nor is it expected to induce growth in the area, no change in demographics will result from the Proposed Action.

Environmental Justice

The Proposed Action represents no change in land use within an EJ community. The local residents may experience temporary inconvenience associated with the construction phase of the project, but the Proposed Action will not result in disproportionately high and adverse human health and environmental effects on EJ populations.

Employment and Income

No change in employment or income would occur if the No-Action Alternative were selected. The Proposed Action would provide construction-related employment during the project construction, but no increase in permanent employment is expected from operation of a newly constructed parking garage. The provision of additional parking under the Proposed Action will provide more convenience for commuters using the Stamford Transportation Center, providing a general benefit to the region's workforce.

3.8.3 Mitigation

Since the Proposed Action will not result in direct or indirect impacts to demographics, EJ populations or employment and income, no mitigation is necessary or proposed.

3.9 Water Quality

3.9.1 Existing Conditions

Surface Water Quality

The Stamford Transportation Center is located in an urban upland context and is not immediately adjacent to any surface waters. Nearby surface waters include the Rippowam River (also known as the Mill River), located 0.2 miles west of the project site; the West Branch of Stamford Harbor at the mouth of the Rippowam River; the East Branch of Stamford Harbor, located 0.3 miles east of the project site; the main body of Stamford Harbor, located 0.7 miles south of the site; and Long Island Sound, located 2.2 miles south of the project site at the mouth of Stamford Harbor. The location of these surface waters is shown in *Figure 3-16*.

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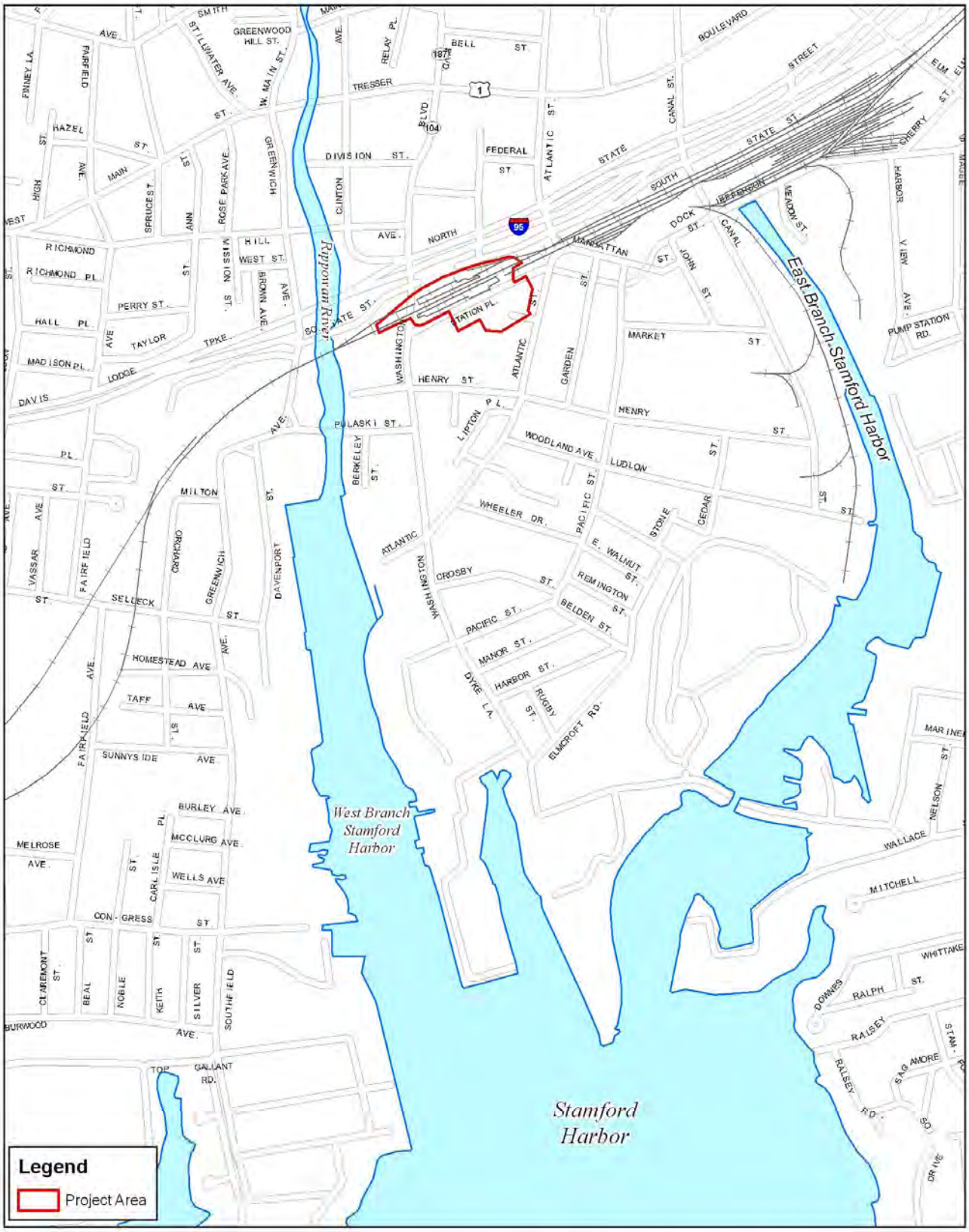

Figure 3-16. Hydrologic Features

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Each of these water bodies has been designated a Water Quality Classification based on Connecticut's Water Quality Standards (CTDEP, 2002). These classifications define which of several designated uses a waterbody has the capability to support. *Table 3-14* and *Table 3-15* present the designated uses associated with each surface water quality classification for freshwater and saltwater, respectively. The water quality classification of each of the surface water bodies near the Stamford Transportation Center are presented in *Figure 3-17*.

Table 3-14. Inland Surface Water Quality Classifications

Class	Freshwater Designated Use
AA	Existing and proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture.
B/AA or C/AA	May not meet Class AA criteria or designated uses with a goal of attaining the criteria.
A	Habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture.
B/A or C/A	May not meet Class A criteria or designated uses with a goal of attaining the criteria.
B	Habitat for fish and other aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply.
C/B or D/B	May not meet Class B criteria or designated uses with a goal of attaining the criteria.
C (shown only as C/B, C/A, or C/AA on maps)	Impaired or partially impaired water quality that results from conditions that may be correctable through appropriate management programs.
D (shown only as D/B or D/A on maps)	Impaired or partially impaired water quality that is not readily correctable through implementation of management programs.

Table 3-15. Coastal Surface Water Quality Classifications

Class	Coastal Waters Designated Use
SA	Habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation.
SB/SA or SC/SA	May not meet Class SA criteria or designated uses with a goal of attaining the criteria.
SB	Habitat for marine fish, other aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.
SC/SB or SD/SB	May not meet Class SB criteria or designated uses with a goal of attaining the criteria.
SC (shown only as SC/SB or SC/SA on maps)	Impaired or partially impaired water quality that results from conditions that may be correctable through appropriate management programs.
SD (shown only as SD/SB or SD/SA on maps)	Impaired or partially impaired water quality that is not readily correctable through implementation of management programs.

In addition, surface waters in Connecticut are assessed periodically and their condition reported to Congress in the biennial State of Connecticut Integrated Water Quality Report, most recently released in 2008. Impairments listed in this report occur when a waterbody does not meet one of its designated uses that are associated with its surface water quality classification. *Table 3-16* lists the designated uses and impairments for water bodies in the project area that were identified in the 2008 Connecticut Integrated Water Quality Report.

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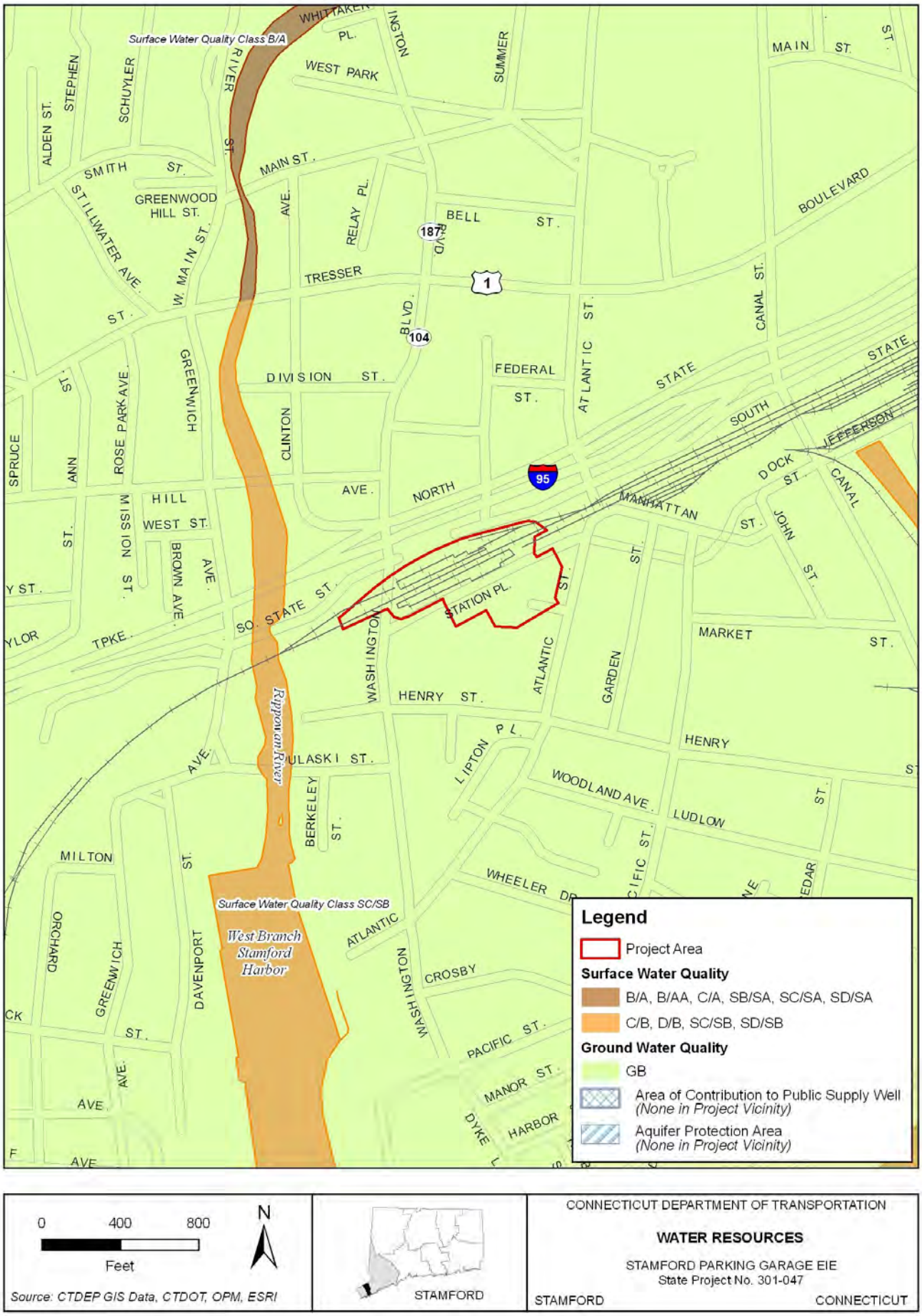

Figure 3-17. Surface and Groundwater Quality Classifications

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Table 3-16. Surface Water Quality Classifications

Waterbody	Water Quality Classification	Impaired Designated Use	Cause	Source
Rippowam River	B/A	Habitat for Fish, other aquatic life, wildlife	Unknown	Unknown
Stamford Inner Harbor (Both Branches)	SC/SB	Commercial Shellfish Harvesting	Fecal Coliform	Waterfowl, non-point source pollution, stormwater, boar sanitary discharges
		Habitat for Fish, other aquatic life, wildlife	Dissolved Oxygen, nutrients, eutrophication	Urban and non-point source stormwater, atmospheric deposition
Stamford Outer Harbor	SB and SB/SA	Parts are supporting, others impaired for direct fish consumption	Fecal Coliform where impaired	Waterfowl, non-point source pollution, stormwater, boar sanitary discharges
Long Island Sound	SA	Commercial Shellfish Harvesting	Fecal Coliform	Waterfowl, non-point source pollution, stormwater, boar sanitary discharges
		Habitat for Fish, other aquatic life, wildlife	Dissolved Oxygen, nutrients, eutrophication	Urban and non-point source stormwater, atmospheric deposition

Groundwater Quality

The site where the Stamford Transportation Center is located is underlain by glacial till as discussed in *Section 3.14*. Across Atlantic Street to the east, soils consist of sands and gravels that are likely to be part of a high-yield aquifer of less than 50 feet in thickness (CTDEP, 2008). Similar to surface water quality classifications, groundwaters in Connecticut are also classified following the Connecticut Water Quality Classifications (CTDEP, 2002). Groundwater below the project site is designated as Class GB (shown in *Figure 3-17*). The potential high-yield aquifer area located east of the site is also designated GB, and is not considered to be an area of contribution to a public supply well.

Designated uses for Class GB groundwater include industrial process water and cooling waters and baseflow for hydraulically connected surface water bodies. Class B groundwater is not suitable for human consumption without treatment and are typically associated with historically urbanized communities where waste discharges, spills or chemical releases, and land use impacts have degraded groundwater quality. Discharges to Class GB groundwater are limited to treated domestic sewage, certain agricultural wastes, certain water treatment wastewaters, discharge from septage treatment facilities subject to stringent treatment and discharge requirements, and certain other biodegradable wastes.

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Existing Drainage

Drainage from the original portion of the parking facility constructed in 1984 is collected in a common drainage system that comingles top deck (i.e., roof) drainage and drainage from the lower covered levels. During the most recent inspection of the structure (Desman Associates, 2006), it could not be determined whether these drainage discharges were treated, nor whether these discharges are received by the municipal sanitary or storm sewer system. As-builts provided by CTDOT indicate that an 8-inch PVC sanitary sewer line from the original parking garage conveys sewage to the east along Station Place, discharging to the sanitary sewer on Atlantic Street. A pipe of this size is unlikely to have sufficient capacity to carry stormwater from the top deck and lower covered levels of the original parking garage.

At the west end of the original structure, an 18-inch reinforced concrete pipe (RCP) carries storm drainage below the original portion of the garage, joins with Station Place drainage in a 24-inch RCP, and continues west toward Washington Street. It is believed that this pipe receives the drainage from the original parking structure since adequate capacity appears to be available.

Stormwater runoff from the parking structure constructed in 2002 is managed in several ways. Drainage from the roof (i.e., top deck) is managed separately from drains provided for the lower levels. Roof runoff is treated by a grit separator and is then discharged to the municipal separate storm sewer system on Atlantic Street, which consists of a 36-inch RCP. Water from floor drains on the lower decks are collected, treated in an oil/water separator, and piped to the municipal sanitary sewer on Atlantic Street.

The CTDEP has established a policy for drainage from parking structures and the treatment of drainage from the 2002 garage expansion is consistent with that policy. In general, stormwater is to be managed by separate systems, with runoff from the top deck to be treated for sediment, oil and grease, such as in a gross particle separator, prior to discharge to a storm sewer system. Drainage from lower decks is to be collected and treated in an oil-water separator with a capacity of at least 1,000 gallons, and then discharged to the sanitary sewer system. The oil-water separator must be cleaned by a licensed waste oil hauler at least once per year. Additionally, washing the floors of the lower levels is eligible for coverage under the *General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* as building maintenance wastewater, although registration is required if greater than 5,000 gallons per day of washwater are generated.

Stormwater runoff from streets surrounding the garage, including Station Place, Atlantic Street, and Washington Boulevard, discharges directly into the Stamford municipal storm drainage system. During recent roadway improvement projects in this area, such as construction of the garage expansion in 2003, and the construction of Phase I of the Stamford Urban Transitway (SUT), CTDOT has installed deep-sump, hooded catch basins to provide a level of treatment, even when there are no or limited increases in impervious area.

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3.9.2 Impact Evaluation

No changes in surface water, groundwater or stormwater quality are anticipated under the No-Action Alternative. Potential impacts to surface water, groundwater, and stormwater that are anticipated to result from the Proposed Action are presented below.

Surface Water Quality

The Proposed Action will occur in an existing urban area with land cover that is dominated by impervious surfaces. Impervious surfaces serve as accumulation areas for oil, sediment, and other contaminants associated with vehicles; prohibit uptake of pollutants by vegetation; and increase the quantity and rate of stormwater runoff by preventing groundwater infiltration. Since the Proposed Action includes replacement of the original portion of the existing parking structure on its original footprint, no new impervious cover at the site would result.

The additional decks and parking and associated increased vehicular trips that would be provided by the replacement structure could increase pollutant loads somewhat through increased tracking of sediment, leaking vehicle fluids, vehicle brake dust, etc. However, the drainage system of the replacement structure will meet current water quality treatment requirements as described in the "Proposed Drainage" section below, resulting in a net improvement over existing conditions.

During construction, soil will be exposed on the site, increasing the potential for erosion of soil and discharge of sediment to receiving waters. Additionally, vehicular fluid spills from construction equipment may also potentially impact surface water quality if they occur before the post-construction stormwater management system is in-place. Erosion and sediment control measures will serve as mitigation during the construction period to prevent erosion and sedimentation, as described in *Section 3.21*.

Groundwater Quality

The Proposed Action is not anticipated to result in adverse impacts to groundwater quality. The project location is currently an urbanized area and development will be limited to the footprint of the existing structure. There is an area of potential soil contamination located below the structure which is addressed in *Section 3.16*. Stormwater runoff from the site will be treated and managed as described in the "Proposed Drainage" section below. If infiltration of stormwater is proposed, as suggested by CTDEP in their scoping comment letter (*Appendix A)*, it would only be stormwater generated by exposed parking decks, such as the top deck which is likely to be more dilute than runoff from lower decks, which would then subsequently be treated to a level appropriate for groundwater infiltration.

The *2004 Connecticut Stormwater Quality Manual* does not recommend infiltration of stormwater generated by land uses with potential for higher pollutant loads, but suggests that it may be allowable if appropriate pretreatment is provided. During detailed design, the feasibility of providing adequate treatment for infiltration of stormwater from the top deck will be considered. Infiltration would then be included in the design if it was found to be compatible with the underlying Class GB groundwater.

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Proposed Drainage

The proposed drainage for the replacement garage structure will be consistent with current CTDEP requirements for multi-level parking structures. Runoff from exposed levels is likely to include large quantities of water with relative low concentrations of pollutants, similar to stormwater from a surface parking area. This runoff will be managed as stormwater consistent with the CTDEP requirements, with the first inch of runoff treated for medium and coarse-grained sediment as well as oil and grease in an appropriate treatment system such as a hydrodynamic separator. Treated stormwater from the exposed levels would then be discharged to the Stamford storm sewer system. An operation and maintenance plan for the treatment system would be implemented to ensure that it continues to function properly.

CTDEP also recommends in its scoping comment letter dated July 3, 2008 (*Appendix A*) that infiltration of post-treatment stormwater be considered. As discussed in the Groundwater Quality section, infiltration of stormwater from a land use with potential for higher pollutant loads is not recommended by the *2004 Connecticut Stormwater Quality Manual*, although the manual states that it may be performed with implementation of adequate pretreatment. In the case that infiltration is included in the design, stormwater discharges larger than the capacity of the infiltration system would be discharged to the Stamford storm sewer system.

CTDEP requires that drainage from interior levels of the garage be collected separately, treated, and discharged to the sanitary sewer. Drainage from these areas is likely to include tracked water from vehicles, drippage from the upper floor, and windblown precipitation, and is thus likely to be small in quantity but relatively concentrated. Additionally, washing of these levels will generate washwater that cannot be discharged to surface water as it is not an allowable non-stormwater discharge. CTDEP recommends treatment of this water in an oil-water separator with a capacity of at least 1,000 gallons that must be cleaned by a licensed waste oil hauler at least once per year. Washing the floors of the lower levels is eligible for coverage under the *General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* as building maintenance wastewater, although registration is required if greater than 5,000 gallons per day of washwater are generated.

Consistency with the CTDEP requirements and providing adequate treatment for infiltration of stormwater will prevent adverse impacts to surface and groundwater quality. In general, beneficial affects are likely as no new impervious surfaces are anticipated and improved treatment of stormwater from the Proposed Action will occur.

3.9.3 Mitigation

The proposed stormwater management measures will mitigate potential impacts to surface and groundwater quality following construction, and erosion and sediment control measures that are consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control* will mitigate potential erosion and sedimentation impacts during construction. No other mitigation is required or proposed.

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3.10 Hydrology and Floodplains

3.10.1 Existing Conditions

Southern Stamford is located along Long Island Sound and is subject to coastal flooding impacts in certain areas. The East and West Branch of Stamford Harbor have associated mapped 100-year flood zone as delineated by the Federal Emergency Management Agency (FEMA). The Rippowam River also has an associated 100-year flood zone, with an additional 500-year flood zone extending further landward along much of its length. The project area does not include any of these flood zones. The Rippowam River upstream of Pulaski Street has associated FEMA floodway and state-designated Stream Channel Encroachment Lines (SCELs). Floodplain and hydrologic features near the site are presented in *Figure 3-18*.

Low-lying areas in City of Stamford are protected from flooding by the Stamford Hurricane Barrier, which is an Army Corps of Engineers flood control structure. The northernmost portion of the East Branch of Stamford Harbor is protected from flooding by a navigational tide gate that is raised to prevent flood surges from inundating low-lying areas. There is no tide gate for the West Branch since a dike associated with the barrier continues up its eastern edge, keeping flood surges out of inland areas.

Storm drainage system outfalls that receive drainage from areas below peak flood elevations are equipped with automatic tide gates that prevent backflow into the storm drainage system when water levels in the Sound would otherwise cause backflow in the storm drainage system. Since closure of the valves prevents interior drainage (stormwater from areas located inland of the hurricane barrier) from discharging, a system of pumps is used during floods to keep inland areas from flooding. An assessment of the drainage system in the area (Milone & MacBroom, 2006) indicates that the majority of the project site drains to the Dyke Street Pumping Station at the corner of Dyke Lane and Elmcroft Road. However, a portion of the original parking garage area as well as drainage from Station Place, drains north by gravity away from the flood control system, as shown on the as-built grading and drainage plan associated with construction of the garage expansion in 2002 (CTDOT, 2004)

A portion of the ground surface at the recently-constructed Stamford Urban Transitway (SUT) lies below the elevation of peak high tides. Although this area is protected by the Hurricane Barrier, drainage discharges to Stamford Harbor by gravity, and there have been instances of localized flooding of 3 to 4 inches during extreme tide events. The Stamford Transportation Center is located west of this area on slightly higher ground, and, as such, it is not likely to be flooded. Additionally, since adjacent catch basins discharging to the pump station manage interior drainage.

3.10.2 Impact Evaluation

The No-Action Alternative includes no changes at the project site such that no impacts are anticipated.

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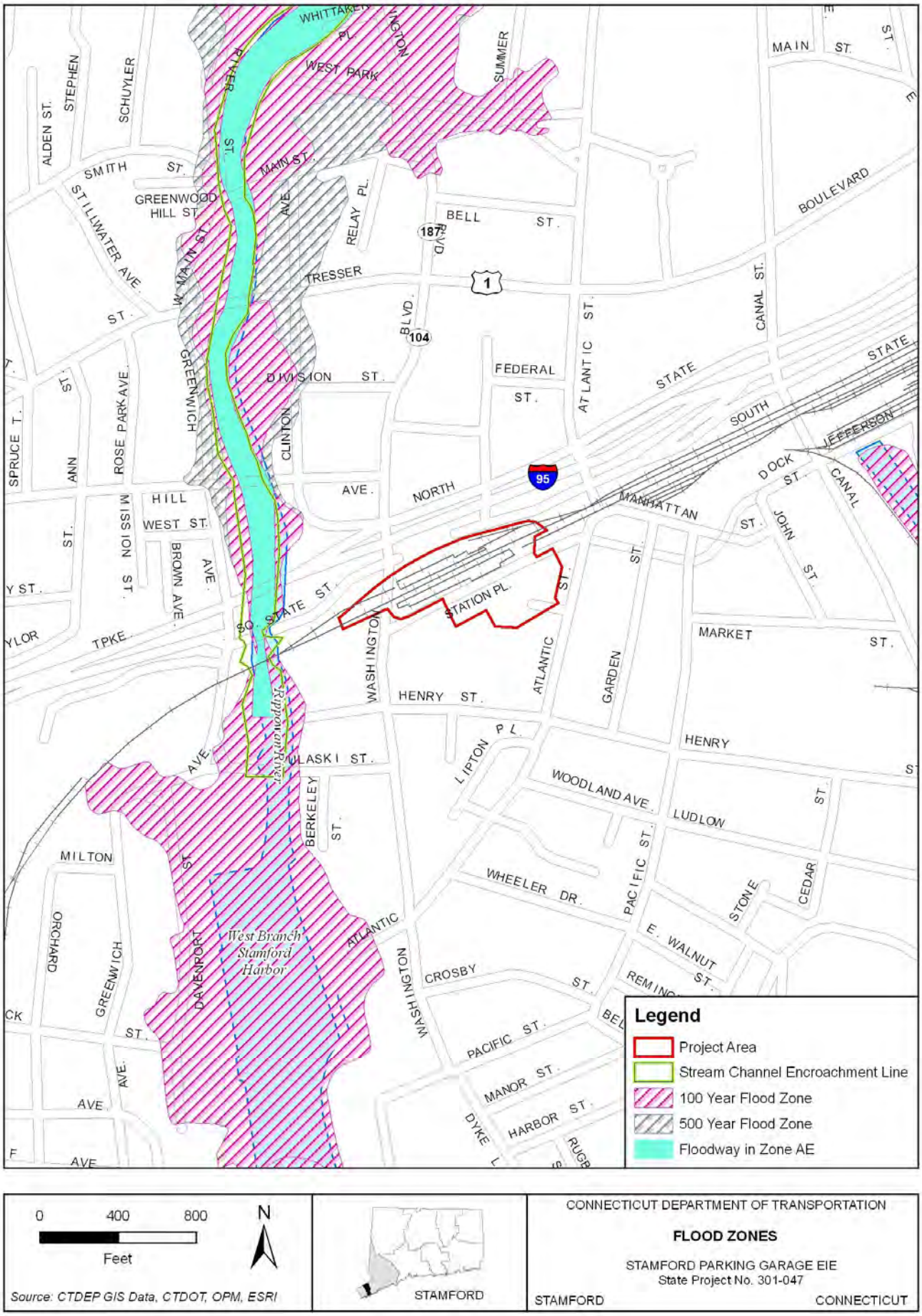

Figure 3-18. Floodplain and Hydrologic Features

This document has not been thoroughly reviewed. It is being provided for convenience, but is not in any way a substitute for each interested Candidate conducting due diligence.

The project site is located outside of the 100-year and 500-year flood zones as well as the regulatory floodway and SCELs, such that no adverse impacts related to fill or obstruction in these areas will occur. Since the project is limited to redevelopment within the footprint of the existing structure, no new impervious cover is proposed and therefore no adverse impacts related to runoff volume or peak flow rates are anticipated.

Retention or detention of stormwater is generally not recommended for sites that are located in the lower portion of a watershed to avoid peak flows from the site that could potentially coincide with peak flows from the larger watershed, which could increase the downstream flooding potential. These concerns may be especially relevant for flows received by the pumping station associated with the Stamford Hurricane Barrier, as an increase in peak storm flows received by the pumps could exceed capacity, resulting in localized flooding. The design of the replacement parking garage drainage system should address this concern and evaluate if stormwater retention or detention is warranted.

An additional concern relates to the apportionment of stormwater discharges from the area surrounding the garage. The replacement parking garage could modify the quantity of stormwater discharged and the tie-in locations to the municipal storm drainage system (e.g., if areas that currently drain west to Atlantic Street are piped to the east instead). The proposed discharge quantity and peak flows from the project site should be evaluated with respect to the available capacity of the municipal storm drainage system to ensure that adequate capacity exists.

3.10.3 Mitigation

The project site is located outside of regulatory flood zones. Additionally, no new impervious cover is proposed, and no adverse impacts related to runoff volume or peak flow rates are anticipated. Therefore, no mitigation is anticipated to be necessary. However, the design of the replacement garage drainage system should include an evaluation of the available capacity of the municipal storm drainage system if changes are proposed to the discharge quantity or the existing tie-in locations to the drainage system. The design should also address the potential for peak flows from the site to coincide with peak flows from the larger watershed and whether on-site stormwater retention or detention is warranted. A CTDEP Flood Management Certification will be required for the Proposed Action.

3.11 Wetlands

3.11.1 Existing Conditions

Field reconnaissance of the project site was conducted by a certified soil scientist from Fuss & O'Neill, Inc. on September 24, 2009 to evaluate the site and adjacent areas for the presence of regulated wetlands and watercourses. Based on the field reconnaissance, no wetland soils or watercourses were identified at or adjacent to the Stamford Transportation Center and existing parking garage.

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3.11.2 Impact Evaluation

No wetland or watercourse impacts are anticipated for any of the alternatives considered due to the absence of these resources at or adjacent to the Stamford Transportation Center and existing parking garage.

3.11.3 Mitigation

Since no wetland or watercourse impacts are anticipated, no mitigation is required or proposed.

3.12 Coastal Resources

3.12.1 Existing Conditions

The Stamford Transportation Center is located within the Connecticut Coastal Area and the Connecticut Coastal Boundary as shown in *Figure 3-19*. These areas are subject to the Connecticut Coastal Management Act (CCMA) in the Connecticut General Statutes (CGS) Section 22a-90 through 22a-113. Projects proposed within the coastal boundary must be consistent with the CCMA, which is generally administered by municipalities through the planning and zoning process. In the case of an action by a State Agency, such as the proposed project, CTDEP Office of Long Island Sound Programs (OLISP) performs coastal consistency reviews.

The project area is located within Shorelands and near Developed Shorefronts according to the Stamford *Coastal Resources Map* (1987). The *Connecticut Coastal Management Manual* (CTDEP, 2000) describes Shorelands as upland areas within the coastal boundary that are not coastal hazard areas nor are subject to dynamic coastal processes. They contain no tidal wetlands, beaches and dunes, or other sensitive water-dependent resources. They are important as they contribute runoff and sediment to coastal areas, provide scenic views, and are developable. A project in Shorelands is consistent with the CCMA if it avoids adverse impacts to adjacent sensitive coastal resources.

Developed Shorefronts are coastal areas that have limited natural resource value, but instead are valued for their economic contribution. These areas serve as transportation and commercial centers, support boating opportunities, and provide cultural and historic value. The Stamford Transportation Center is adjacent to these areas. A project near these areas is consistent with the CCMA if adverse impacts to adjacent sensitive coastal resources are avoided. Redevelopment of Developed Shorefront areas themselves should improve public access to coastal resources, and should be reserved for intensive water-dependent uses if possible (CTDEP, 2000).

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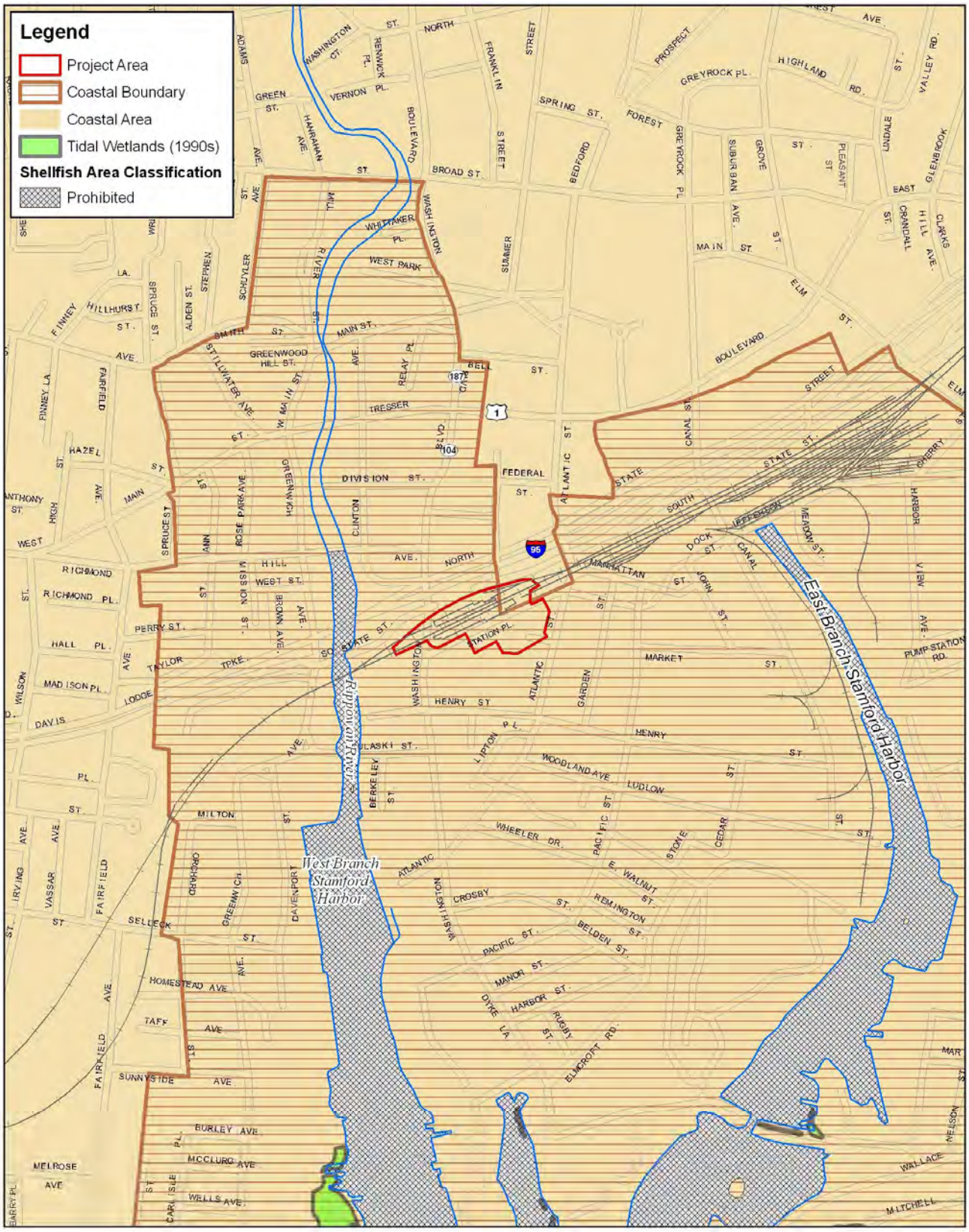

Figure 3-19. Coastal Resources

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3.12.2 Impact Evaluation

The No-Action Alternative would involve no construction and no direct or indirect impacts on coastal resources.

The Proposed Action is consistent with coastal zone management policies for general transportation use as it upgrades and improves existing transportation facilities in the coastal area as the primary means of meeting transportation needs following CGS Section 22a-92(b)(1)(F).

A second coastal management policy related to railways requires "that shoreline rail corridors be designed and constructed so as (i) to prevent tidal and circulation restrictions and, when practicable, to eliminate any such existing restrictions, (ii) to improve or have a negligible adverse effect on coastal access and recreation and (iii) to enhance or not unreasonably impair the visual quality of the shoreline" (CGS section 22a-92(c)(1)(G). The Proposed Action does not include work within an area of tidal flow, will not affect coastal access and recreation, and will not impair the visual quality of the shoreline as addressed in *Section 3.17*.

The Proposed Action is also consistent with policies for Shorelands because it will avoid impacts to adjacent sensitive coastal resources. Erosion and sediment controls will be implemented during construction to prevent discharges to adjacent coastal resources, including coastal waters. Following construction, the stormwater drainage system for the replacement parking garage will provide improved stormwater treatment measures compared to the existing garage (as discussed in *Section 3.9*), which will result in a beneficial impact to coastal waters that ultimately receive the discharge. Additionally, the Proposed Action will not result in a loss of public access to the shorefront, impact significant habitat or species, or alter cultural sites.

3.12.3 Mitigation

Measures to prevent discharge of stormwater pollutants to coastal waters are discussed in *Section 3.9*. A Coastal Zone Consistency Concurrence will be required from OLISP, and a Flood Management Certification from CTDEP will be required for changes in discharges to the state-owned drainage system. Permitting through these programs will ensure that potential impacts are appropriately mitigated.

3.13 Flora/Fauna/Threatened and Endangered Species

3.13.1 Existing Conditions

The area of the Stamford Transportation Center and existing parking garage consists primarily of impervious surfaces, including asphalt, buildings, and concrete. The site provides minimal ecological diversity and wildlife habitat. Existing flora is very limited, consisting of landscaping in the parking areas and along the perimeter of the site. Existing fauna that may be found at the site and surrounding area includes those typical of an urban setting such as squirrels, pigeons, raccoons, and mice.

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A review of the Connecticut Natural Diversity Database mapping for the City of Stamford indicates no documented occurrences of state or federal endangered or threatened species in the project area *(Figure 3-20)*.

3.13.2 Impact Evaluation

No impacts to flora, fauna, or threatened and endangered species are anticipated for the Proposed Action.

3.13.3 Mitigation

Since no impacts to flora, fauna, or threatened and endangered species are anticipated, no mitigation is required or proposed.

3.14 Soils and Geology

3.14.1 Existing Conditions

The project area is underlain by surficial deposits consisting of thin glacial till, the majority of which has been disturbed through urbanization. The bedrock geology in the area is primarily schist and gneiss (CTDEP, 1990; reprinted 1996). Soils in the project area are mapped as Urban Land (*Figure 3-21*). Urban Land is land mostly covered by streets, parking lots, buildings, and other structures of urban areas (NRCS, 2010). No Prime Farmland Soils or Soils of Statewide Importance are present near the project site.

3.14.2 Impact Evaluation

No soils or geologic features of national, state, or local importance are located near the project site. As such, no impacts to soils or geology are anticipated for the Proposed Action.

3.14.3 Mitigation

Since no impacts to soils or geology are anticipated, no mitigation is necessary or proposed.

3.15 Cultural Resources

3.15.1 Existing Conditions

Cultural resources include archaeological, historic, and architectural resources. Section 106 of the National Historic Preservation Act of 1966 and Section 4(f) of the Department of Transportation Act of 1966 provides protection for significant cultural resources, which are those listed on or determined to be eligible for the National Register of Historic Places (NHRP). While NRHP properties and districts are located in Stamford, none are within the immediate vicinity of the Stamford Transportation Center or the existing parking garage. The 1999 CEPA document for the Stamford Transportation Center/Parking Garage Expansion

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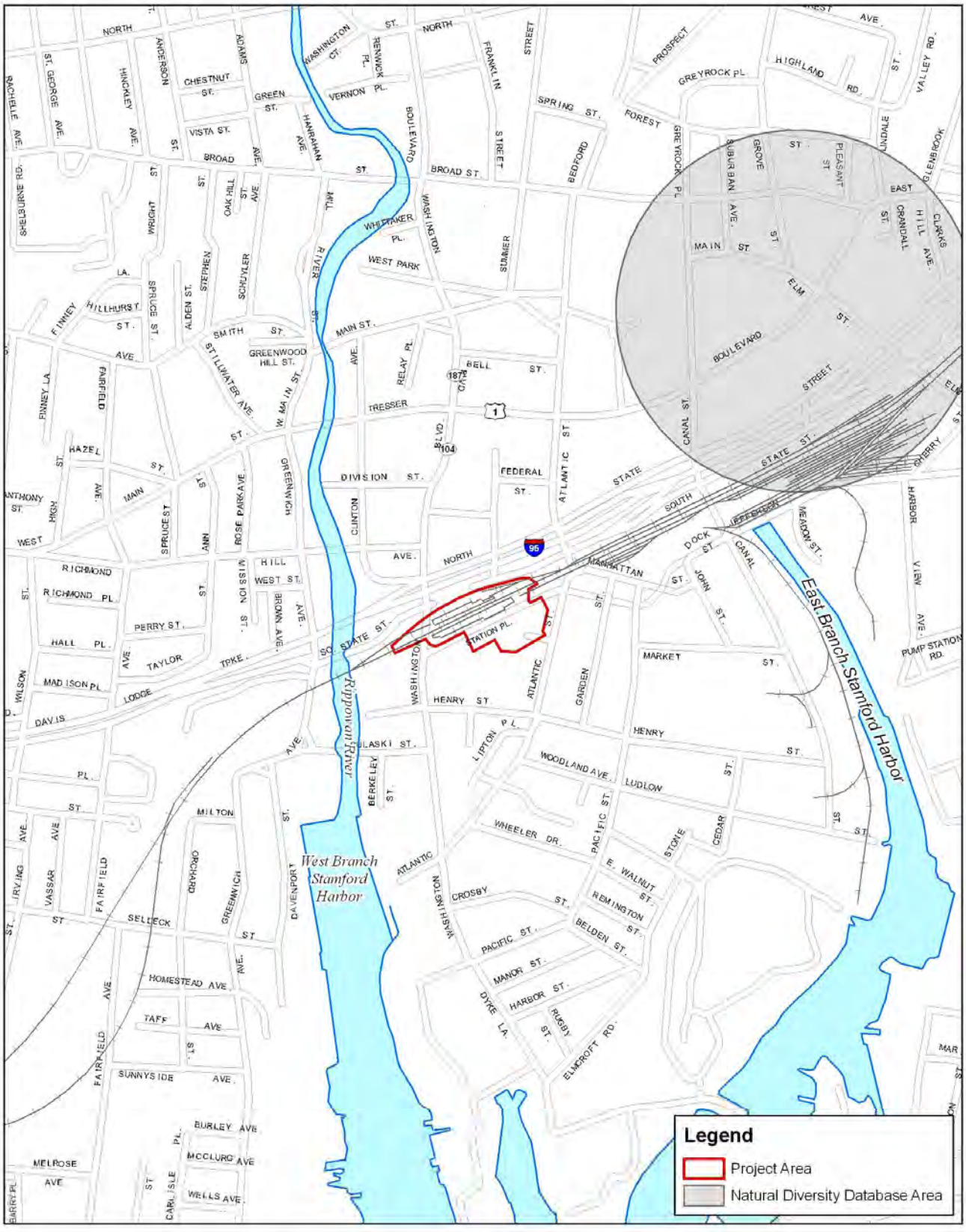

Figure 3-20. Endangered Species Mapping

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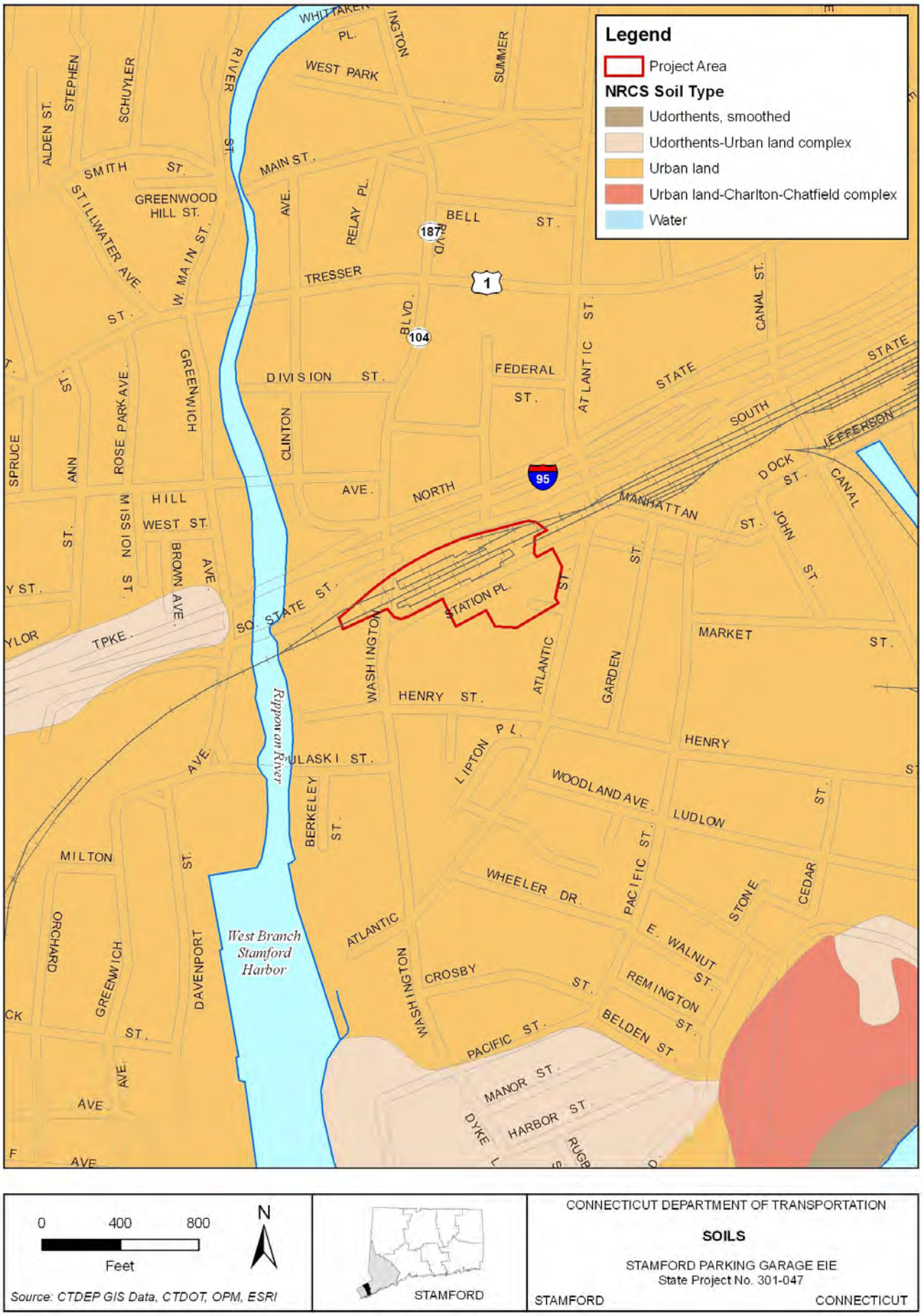

Figure 3-21. Soils

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(CTDOT, 1999) listed two properties at 64 and 68 Henry Street, approximately 0.1 mile from the Stamford Transportation Center, that are included in the City of Stamford inventory of historic places and architectural properties, but are not NRHP eligible.

The Stamford Transportation Center and existing parking garage are located in a highly disturbed urban area, making the area one of low sensitivity for archaeological resources.

3.15.2 Impact Evaluation

The Connecticut State Historic Preservation Office was contacted during project scoping to identify potential impacts to archaeological and historic resources. Based on the determination by the State Historic Preservation Office (*Appendix A*), no impacts to cultural resources are anticipated for the alternatives considered.

3.15.3 Mitigation

Since no impacts to cultural resources are anticipated, no mitigation is necessary or proposed.

3.16 Solid Waste, Toxics, Pesticides, and Hazardous Materials

3.16.1 Existing Conditions

Hazardous Materials

A preliminary site assessment was conducted for the parcel on which the original parking garage is located (i.e., the "project site") and adjacent parcels. This assessment was completed to identify potential environmental concerns and to evaluate the potential for hazardous materials and/or petroleum products to be encountered during future site construction activities. The 1999 *Connecticut Finding of No Significant Impact (FONSI) for the Stamford Transportation Center and Garage Expansion* (CTDOT, 1999) was reviewed to determine the existing condition of the project site as well as to identify nearby areas of concern which may have affected the environmental quality of the soil and/or groundwater at the project site. Additional documents reviewed include environmental investigation reports, state aerial photographs, Sanborn insurance mapping, records present in State of Connecticut and Federal environmental databases (copies of relevant source documents are included in *Appendix D*) and building and land use permits available at the Stamford City Hall. Fuss & O'Neill personnel visited the site and the Stamford City Hall on February 19, 2010. Information obtained from these sources was used to evaluate the potential for hazardous material to be present on the project site.

The original Stamford Transportation Center garage was constructed in 1984 on the parcel located at 437 Washington Boulevard in Stamford, Connecticut. Prior to the construction of the existing 5-floor parking garage, the site was a commuter parking lot for the adjacent Stamford Train Station. Based on the previous land use as commuter parking, it is unlikely that an underground storage tank (UST) ever existed on the site. Aerial photographs of the site indicate that the parcel was paved dating back to at least 1951. The previous aerial photograph from 1934 shows the site as open space that had not yet been developed.

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It is known that an area of soils at the site of the original portion of the garage was contaminated by a release of petroleum at an adjacent property. The release occurred at 433 Washington Boulevard, also referred to as 43 Station Place, from a former rental car facility and vehicle paint shop. The release affected soils at the southwest portion of the garage, as shown in *Figure 3-22*. A total of approximately 468 tons of petroleum contaminated soil were removed from the adjacent parcel in July 1998. However, two post-remediation soil samples confirmed that soil containing petroleum at concentrations exceeding the Connecticut Remediation Standard Regulations (CT RSRs) remain. This soil was left in place to "maintain the structural integrity of the adjacent parking car garage" (Coneco, 2000), which refers to the original portion of the garage.

According to an environmental investigation performed in 2001 by Coneco, contaminated soil at this location was between 10 and 18 feet below the ground surface. Depth to water gauging during this investigation indicates that the groundwater flow direction in this area is to the west/northwest.

The parcels located at 599, 601-603, 605, 611-613, 639 and 641 Atlantic Street were previously acquired by the CTDOT and in 2002 the Stamford Transportation Center parking garage expansion was constructed on these properties. A summary of the past uses and contamination potential at these parcels identified in the 1999 FONSI and adjacent or upgradient parcels that have potential to have impacted soil or groundwater at the project site are presented in *Table 3-17* and *Table 3-18*, and the parcel locations are shown on *Figure 3-22*.

Table 3-17. Current and Historic Uses of Nearby Parcels

Address	Current Use	Former Use	Direction from Subject Parcel
599 Atlantic St.	Parking Garage Extension	Auto. Repair/ Church	East
601-603 Atlantic St.		Photo studio	East
605 Atlantic St.		Beauty Salon	East
611-613 Atlantic St.		Infanti Service Center	East
639 Atlantic St.		Residential/Art Center	East
641 Atlantic St.		Hertz Car Wash	East
655 Atlantic St.	Raphael's Furniture Restoration	Raphael's Furniture Restoration	East
43 Station Pl./433 Washington Blvd.	Commuter Lot	Rental Car Lot/Vehicle Paint Shop	Southwest
64 Henry St.	Parking Lot	Residential	South
68 Henry St.		Residential	South
None		Unknown	South
72 Henry St.	Hertz Car Wash & Gas Station	Unknown	South

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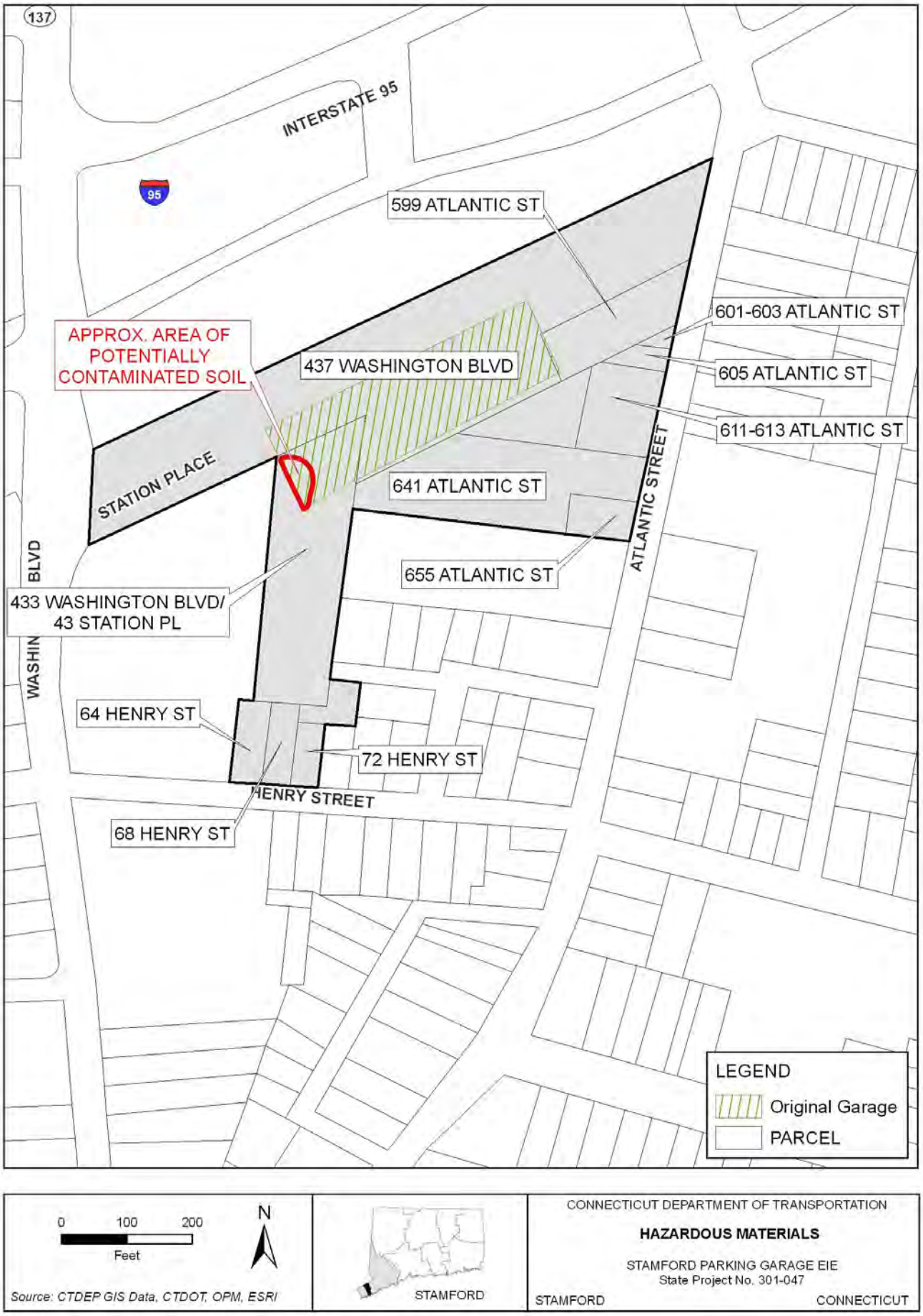

Figure 3-22. Hazardous Materials

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Table 3-18. Contamination Risk on Potentially Affected Parcels

Property	Potential Source	Risk to Project Site	
599 Atlantic St. – Former automobile repair	USTs (unknown) & ASTs (unknown)	Moderate	It is unknown whether the USTs have been removed from the ground and whether contaminated soils were/are present; however a release to soil would likely have been identified during the construction of the 2002 garage expansion.
611-613 Atlantic St. – Former Infanti Service Station	USTs (gas & used oil)	Low	It is unknown whether the USTs have been removed from the ground and whether contaminated soils were/are present; however a release to soil would likely have been identified during the construction of the 2002 garage expansion. The former gasoline pump island was located along Atlantic Street.
	Potential contaminated soil dumping [1]	Low	CTDEP WEED/PERD[2] sampled the potentially contaminated soil but analytes were above the CT RSR [3] criteria.
639 Atlantic St. – Former residence and art studio	UST (heating oil) & chemical storage[4]	Low	It is unknown whether the USTs have been removed from the ground and whether contaminated soils were/are present; however a release to soil would likely have been identified during the construction of the 2002 garage expansion.
641 Atlantic St. – Former Hertz Car Wash Facility	UST (gas)	Moderate	UST was removed [5] and there are no records that samples were collected.
655 Atlantic St. – Existing Raphael's Furniture Restoration	RCRA small-quantity generator of solvents	Moderate	This facility is currently in operation and there is the potential for solvents released to groundwater to have migrated beneath the subject site.
433 Washington Blvd. – Former rental car lot and Former vehicle paint shop	Petroleum contaminated soil	High	Remedial activities conducted in July 1998 document that soil containing contaminant concentrations above the CT RSR criteria were left in place to "maintain the structural integrity of the adjacent parking car garage" at the 437 Washington Blvd. site. [6] Contaminated soil remains in place in the southwestern corner beneath the parking garage.

1. Complaint of dumping contaminated soil (from 11/1997) was identified in the FirstSearch report.
2. WEED/PERD = Waste Engineering and Enforcement Division/ Permitting, Enforcement, and Remediation Division
3. CT RSRs = Connecticut Remediation Standard Regulations
4. Mapping available at the City of Stamford Environmental Protection Bureau showed a mechanical room, silk screening room, dark room and storage room within the residential dwelling.
5. According to the FirstSearch report, the tank was removed in 2009.
6. "Investigation and Remediation Schedule, Property: 43 Station Place, Stamford, CT," October 4, 2000. Coneco Engineers & Scientists.

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This analysis of existing conditions indicates the following potential sources of hazardous material (not including known contamination) and/or contamination either at the project site or at a nearby location which may have migrated onto the subject site:

- Project Site:
  - Former use of the site as a paved parking lot – possible motor oil leaks or spills to the ground surface
  - Current elevators in the central portion of the garage – potential leaks of hydraulic fluid
  - Floor drains on the lower level of the garage – potential gasoline and/or motor oil leaks from automobiles
- Off-Site:
  - 655 Atlantic St. – Raphael's Furniture Restoration – potential migration of possible solvents in groundwater to the site

The CTDEP's policy on upgradient sources of contamination is that a downgradient property owner is not responsible for remediating groundwater contamination flowing onto his or her property from another site, as long as the contamination is present solely as a result of the off-site sources (CTDEP Policy on Upgradient Contamination, Michael Harder, Director of Permitting, Enforcement, and Remediation Division, August 28, 1997).

It is unlikely that a release of hazardous substances and/or petroleum products to the subsurface has occurred from these potential sources since the construction of the existing parking garage in 1984 based on the reported spill history for the site. There have been no reported spills on the site with the exception of two small (<1 gallon) spills of motor oil to the ground surface in August 2000 and April 2004. (FirstSearch, 2010; CTDEP, 2010). The motor oil spill in 2000 was contained and removed, and the CTDEP was notified of this incident. The motor oil spill in 2004 was the result of a container failure and was sanded.

According to a 2006 Condition Assessment Report of the Stamford Transportation Center parking garage (Desman Associates, 2006), floor drains are located throughout the garage structure. Discharges from both roof and lower-level drains of the original portion of the garage are collected in a common system. It is unknown whether the drain network discharges to municipal storm or sanitary systems, although it is believed to discharge to the storm drainage system, as discussed in *Section 3.9*. There is the potential for gasoline and/or other automobile fluids to have impacted soil beneath the garage as a result of cracks in the drainage system or associated piping.

Two elevators are located in the central portion of the original garage adjacent to Station Place, and a machine room is located on the first floor of the garage. There is a potential for hydraulic fluid used in elevator operation and maintenance to have impacted the soil beneath the concrete floor of the garage beneath this area.

There is the potential for gasoline and/or motor oil from automobiles parked on the property prior to the construction of the existing garage to have leaked onto the parking lot pavement. Since cracks in the pavement can provide a pathway for petroleum products to negatively affect the environmental quality of the shallow soil beneath the pavement, the former use of the site

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as a paved parking lot is a potential source from which contaminants may have entered the environment.

Solid Waste, Pesticides and Toxics

Solid waste that is disposed inside the existing parking garage is collected and transferred by a licensed hauler to a licensed disposal facility. The quantity of solid waste generated in the garage is relatively minor and is limited to solid waste collected in on-site trash receptacles located around the facility. Vehicle and railway rolling stock and track maintenance activities are performed at other facilities.

Based on the available information, there has been no known use of herbicides, pesticides, or toxic materials at the project site. There is the potential that maintenance along the existing railroad right of way has involved the use of herbicides.

3.16.2 Impact Evaluation

Hazardous Materials

Under the No-Action Alternative, existing conditions relative to hazardous materials would remain unchanged.

Under the Proposed Action, residual petroleum-contaminated soil from the release at 433 Washington Boulevard may be encountered during demolition and construction activities. Potential construction-period impacts are addressed in *Section 3.21*.

Following construction, the quantity of hazardous or regulated waste generated in the replacement garage is anticipated to be similar to that of existing conditions.

Solid Waste, Pesticides and Toxics

Under the No-Action Alternative, existing solid waste generation, pesticide use, and toxic material conditions would remain unchanged.

The replacement garage is anticipated to result in only minor increases in the amount of solid waste generated as compared to existing conditions. The replacement structure may contain more trash receptacles than the existing structure. Solid waste will continue to be disposed by a licensed waste hauler at a permitted facility. The replacement structure will not require the use of pesticides or herbicides, and the building materials will meet current local, state, and federal codes and regulations relative to toxicity and exposure potential.

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3.16.3 Mitigation

Hazardous Materials

No impacts relative to hazardous materials are anticipated following construction of the proposed project. Therefore, no mitigation is necessary or proposed. Construction-period mitigation measures are discussed in *Section 3.21*.

Solid Waste, Pesticides and Toxics

No impacts relative to hazardous materials are anticipated following construction of the proposed project. Therefore, no mitigation is necessary or proposed. Construction-period mitigation measures are discussed in *Section 3.21*.

3.17 Aesthetics/Visual Effects

3.17.1 Existing Conditions

The Proposed Action site is located with an urban, primarily residential and commercial area along the Interstate 95 and New Haven Rail Line transportation corridor. The site currently contains a five-floor cast in-place reinforced concrete parking structure that is attached to both the Stamford Transportation Center via a pedestrian bridge and to a multi-level parking garage expansion constructed in 2002. As noted in the 2006 *Condition Assessment Report* (Desman Associates, 2006) for the garage, there are significant areas of scaling, delamination and spalling of the deck which, in addition to posing structural issues, detracts from the aesthetic appearance of the garage.

The Stamford Transportation Center, constructed in the mid-1980s, is a two-level building with a gray and red exterior theme. The 2002 parking garage expansion is also reinforced concrete. The photographs in *Figure 3-23* illustrate the existing visual setting of the Stamford Transportation Center and the surrounding area.

3.17.2 Impact Evaluation

The No-Action Alternative would not affect the visual environment as the existing garage would remain in place. However, ongoing deterioration of the concrete would continue to detract from the aesthetic appearance of the parking structure.

Potential visual and aesthetic effects of the Proposed Action were examined from the perspective of how the design will appear and be incorporated into the surrounding area. The construction of a new garage on the footprint of the existing garage would result in little change in the overall visual and aesthetic character of the area surrounding the Stamford Transportation Center. Replacement of the existing garage, now over 20 years old, with a new concrete structure would likely be perceived as a visual improvement. The structure is visually shielded by the expansion portion of the garage, the rail station, and Interstate 95 from most directions. The structure is most visible from the south and west, such as from the newly-constructed Metro Green Apartments on Henry Street.

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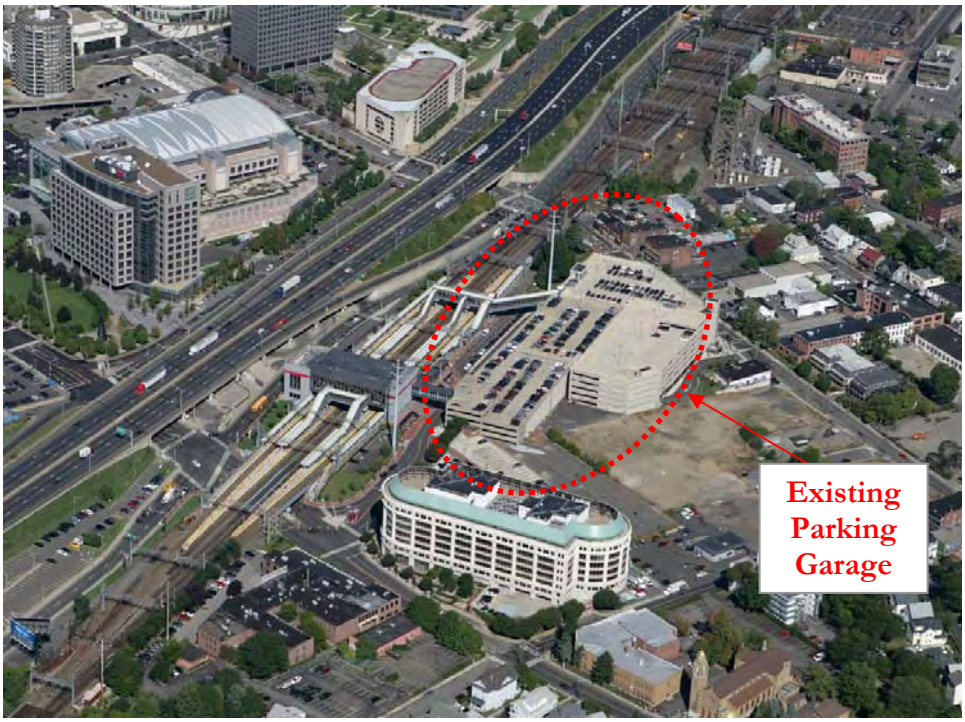
Figure 3-23. Existing Visual Setting of the Stamford Transportation Center Parking Garage



Source: Connecticut Department of Transportation, taken on September 28, 2005.

a. Aerial View of the Existing Parking Garage

Source: Fuss & O'Neill, Inc., July 13, 2009.

b. Intersection of Station Place and Atlantic Avenue, facing northeast

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Figure 3-23. Existing Visual Setting of the Stamford Transportation Center Parking Garage

Source: Fuss & O'Neill, Inc., July 13, 2009.

c. Intersection of Station Place and Atlantic Avenue, facing west

Source: Fuss & O'Neill, Inc., July 13, 2009.

d. Intersection of Station Place and Atlantic Avenue, taken from the northeast corner of the existing garage, facing east

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Since the proposed replacement for the original portion of the structure will contain an additional 280 parking spaces, it is likely that the replacement structure will require additional floors for parking since the existing 720-space structure includes five floors. The need for additional floors will be determined as part of the design process, but could result in the replacement structure being taller than the existing structure, although still not as tall as commercial buildings in the surrounding area.

3.17.3 Mitigation

The Proposed Action would have a neutral or positive impact on aesthetics and the visual setting of the project area. Therefore, no mitigation is necessary or proposed.

3.18 Energy Use and Conservation

3.18.1 Existing Conditions

Energy use at the Proposed Action site consists primarily of electricity to illuminate the existing parking garage and operate the elevator. Since construction of the existing parking garage was authorized prior to January 1, 2009, the garage was not subject to the current high performance construction standards for state-owned buildings described in the Connecticut General Statutes (CGS) 16a-38k-1 through 16a-38k-9.

The New Haven Line is electrified throughout the area and trains serving the Stamford Transportation Center use electricity for operation.

3.18.2 Impact Evaluation

Under the No-Action Alternative, energy demand would remain similar to existing levels.

Unless an exemption is sought and obtained, the construction of a new, replacement parking structure would be subject to the high performance construction standards for state-owned buildings described in the CGS 16a-38k-1 through 16a-38k-9. The standards require that State facility construction projects that are projected to cost $5 million or more, including those of which $2 million or more is state funding and is approved and funded on or after January 1, 2009 meet minimum standards for: energy efficiency and renewable energy; indoor environment; water efficiency; recycling, reuse & sustainability; site selection & development; and operations & procedures. Requirements for energy efficiency state that the base minimum energy performance for all building projects must be twenty-one percent better than the most current Connecticut State Building Code or American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 90.1-2004, whichever is more stringent, and that energy consuming products installed in the building must be Energy Star compliant if the product category has an Energy Star specification.

Although the Proposed Action will result in a facility with approximately 280 more spaces than the existing parking complex, no significant increase in energy demand is anticipated since the new structure will be required to meet the energy efficiency standards described above and the

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primary demand for energy will continue to be electricity to illuminate the parking garage and operate an elevator.

On a regional level, the Proposed Action is anticipated to reduce energy consumption and promote conservation by improving access to and encouraging the use of mass transit. In general, use of mass transit such as commuter rail reduces the consumption of fossil fuel by reducing vehicle miles traveled on regional roadways.

3.18.3 Mitigation

Although no significant impact to energy use is anticipated, compliance with energy efficiency standards for construction and operation of State-owned facilities will promote a reduction in energy consumption associated with the Proposed Action.

3.19 Public Utilities and Services

3.19.1 Existing Conditions

The following is a description of the public utilities located in and around the proposed action location. The 1999 *Connecticut Finding of No Significant Impact (FONSI) for Stamford Transportation Center Parking Garage Expansion* and "As-Built" plans for the Stamford Transportation Center Parking Garage Expansion were used to identify existing utilities in the project area.

Potable Water

Public drinking water in Stamford is supplied by Aquarion Water Company, which operates surface water reservoirs and drinking water wells. The system consists of five reservoirs, including the Laurel and North Stamford Reservoirs in Connecticut and the Mill, Trinity, and Siscowit Reservoirs in New York. The Southwest Regional Pipeline also supplies water from the Hemlocks Reservoir in Fairfield and the Canal Street and Coleytown well fields in Westport. The average daily system demand is 13.4 million gallons per day (Aquarion, 2008).

Aquarion also operates the associated water distribution system that transmits treated water to end users. Drinking water is supplied to the Stamford Transportation Center via an 8-inch pipe along Station Place that connects to mains in both Atlantic Street and Washington Boulevard (CTDOT, 2004). Groundwater quality mapping indicates that there are no aquifer protection areas near the project site as shown in *Figure 3-17*, indicating that no public wells are located in the immediate area.

Sanitary Sewer

Sanitary sewer service is provided via an 8-inch PVC pipe that conveys flows east along Station Place to Atlantic Street. This pipe is intercepted by an 8-inch tile pipe that conveys flows south along Atlantic Street, which transitions into a 10-inch PVC pipe further downstream. The sanitary sewers are owned by the City of Stamford Water Pollution Control Authority and convey flows to the Stamford Water Pollution Control Facility located on Harborview Ave.

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Sanitary sewers from the original portion of the existing garage, as well as the garage expansion structure, connect to these sewer lines. Sanitary sewage generated from the original portion of the garage structure is likely limited to domestic wastewater from an employee lavatory, although the configuration of floor drains cannot be confirmed with available information. Sanitary sewer discharges include floor drainage from covered parking decks from the expansion portion of the parking garage are treated in an oil/water separator and discharged to the sanitary sewer as described in *Section 3.9*.

Stormwater Management

At the west end of the original portion of the garage structure, an 18-inch RCP carries storm drainage below the original portion of the garage. It is likely, but not certain, that the pipe receives the drainage from the top and lower floors of the original garage structure (Desman Associates, 2006; CTDOT, 2004). This line then joins with Station Place drainage in a 24-inch RCP, and continues west toward the municipal storm drainage system in Washington Street, which drains to the north as discussed in *Section 3.10*. Existing stormwater drainage is discussed further in *Section 3.9*.

Stormwater runoff from the expansion portion of the parking structure is managed in several ways. Drainage from the top deck of this structure, which was constructed in 2002, is managed separately from drains provided for the lower levels, from which drainage is collected, treated in an oil/water separator, and piped to the municipal sanitary sewer on Atlantic Street. Top deck runoff is treated by a grit separator and is then discharged to the municipal storm drainage system on Atlantic Street, which consists of a 36-inch RCP. This storm sewer also receives drainage from the eastern portion of Station Place, as well as Atlantic Street and surrounding areas, and conveys drainage south to the Dyke Street Pumping Station as described in *Section 3.10*.

Other Utilities

Electricity is supplied to the subject site by Connecticut Light and Power Company via conduit buried along Atlantic Street. Data service, including telephone and cable, are also provided via buried lines. A 20-inch natural gas supply line owned by Yankee Gas is located along Atlantic Street, and a 16-inch line is also located near the project site.

Northeast Utilities owns and operates a 115 kV electrical transmission line that runs along the north side of Station Place between the rail station and the original portion of the parking garage. The associated conductors are mounted on steel poles, two of which are located approximately 100 feet west and 30 feet north of the garage structure.

3.19.2 Impact Evaluation

Potable Water

Potable water demand will remain similar to that of existing conditions under the No-Action Alternative.

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The Proposed Action will result in an increased number of parking spaces which will require additional parking decks. Periodic deck washdown activities will require additional potable water as cleaning the additional deck area will require more cleaning time to wash the larger area, although the quantity of additional water required is anticipated to be small relative to total system demand. The discharge rate of water used for garage washdown will be similar to washdown activities that occur under existing conditions, such that existing hydraulic supply capacity is expected to be adequate. As such, there will be no significant impacts to potable water from the Proposed Action.

Sanitary Sewer

Sanitary sewer discharges would remain similar to existing conditions under the No-Action Alternative.

As discussed in *Section 3.9*, the design of the replacement parking garage will comply with CTDEP policy for management of stormwater from parking garages, which requires that drainage from all floors other than the roof floor be treated by an oil/water separator and discharged to the sanitary sewer. Sanitary sewer discharges are likely to marginally increase since the lower floor drainage in the original portion of the parking garage, which is believed to currently discharge to the storm drainage system, will be discharged to the sanitary sewer for the replacement garage. The quantity of water discharged to the sanitary sewer from the replacement garage is anticipated to be small since drainage from the lower floors generally results from incidental drippage of rainwater and meltwater from vehicles during storms, wind-blown precipitation that enters the garage along the outer walls, and periodic garage floor washing activities.

Since the original portion of the garage structure contains the employee lavatory, it will be demolished and replaced. It is likely that the quantity of sanitary sewage generated by the replacement lavatory will be similar to that of existing conditions.

Stormwater Management

The No-Action Alternative will not affect stormwater discharges from the existing garage.

No significant impacts to the storm drainage system are anticipated for the Proposed Action. Drainage from lower floors of the original portion of the parking garage, which is likely to have higher pollutant concentrations than stormwater runoff from the roof deck, will be treated by an oil/water separator and then discharge to the sanitary sewer, resulting in reduced pollutant loads to the storm drainage system. Stormwater runoff from the top deck of the replacement structure will also be treated prior to discharge, resulting in an improvement in stormwater quality. Stormwater quality is discussed further in *Section 3.9*. The proposed segregated drainage design may also result in minor decreases in the peak flow rate and volume of water discharged to the storm drainage system. Flood management is discussed further in *Section 3.10*.

Other Utilities

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The No-Action Alternative will not result in significantly different demand on electrical service and other utilities than existing conditions.

As part of the Proposed Action, the replacement garage structure will have additional parking spaces, and will likely require additional parking decks which will require additional lighting. New lighting is often more energy efficient than lighting that may be present within the existing structure. As such, the additional demand on electrical service is likely to be small. The replacement structure will connect to existing telephone and data service, and demand on these services is unlikely to change significantly.

As discussed above, the replacement garage is likely to require additional floors and a taller structure than the original portion of the garage to accommodate the additional parking spaces. Constructing a taller parking structure will bring the top deck closer to the existing 115 kV electrical transmission lines. Adequate clearance must be maintained between conductors and grounded objects as specified by the National Electrical Safety Code (NESC). The NESC contains a category for clearance to roofs accessible to vehicles but not to trucks. A cursory calculation based on the line voltage (not including wind, snow, temperature effects, or other factors) suggests a minimum clear zone of approximately 11 feet horizontally and 17 feet vertically, although applicable load factors are likely to increase these distances somewhat. The replacement parking garage is not anticipated to encroach upon the transmission line clear zone since the footprint of the existing garage is not directly beneath the power lines, which run parallel to but on the opposite side of Station Place from the parking garage. Clear zone distances should be further evaluated during the design phase.

3.19.3 Mitigation

Anticipated impacts to water supply and wastewater are negligible. Therefore, no mitigation for these resources is necessary or proposed. While no mitigation is anticipated to be necessary relative to stormwater management, since the proposed replacement garage is within the footprint of the existing garage and will not increase impervious cover, the design of the replacement garage drainage system should include an evaluation of the available capacity of the municipal storm drainage system, particularly if changes are proposed to the discharge quantity or the existing tie-in locations to the drainage system. The design should also address the potential for peak flows from the site to coincide with peak flows from the larger watershed and whether on-site stormwater retention or detention is warranted. Anticipated impacts on electrical supply and usage are also anticipated to be negligible, requiring no mitigation. CTDOT will coordinate with Northeast Utilities to maintain adequate clear zone distances from the 115 kV transmission power lines.

3.20 Public Health and Safety

3.20.1 Existing Conditions

Health Services

Stamford Hospital is located approximately 1.5 miles from the Stamford Transportation Center is the closest emergency medical provider. Stamford Hospital is a 305-bed, full-service health

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care facility providing inpatient services and an Emergency Department (Level II Trauma Center) that is equipped to handle life-threatening injuries 24 hours a day, seven days a week (Stamford Hospital, 2010).

The City of Stamford Health Department has responsibility for public and environmental health issues in the City including inspection of restaurants, schools, sewer and septic systems, and public bathing areas; investigation of disease outbreaks, and education on health related issues (City of Stamford, 2010).

Public Safety and Emergency Services

The Stamford Police Department serves the entire downtown area as well as portions of the Long Island Sound and the City's coastline – an overall coverage area of 39.9 square miles, 20 square miles of the Sound and 17 miles of coastline. The department is currently staffed by 288 sworn police officers and a support staff of 67 civilian personnel. The City is divided into four patrol districts – all areas are staffed 24 hours a day (City of Stamford, 2010).

Stamford's Fire and Rescue needs are served by a combination of paid and volunteer departments. The Stamford Fire Department responds to fires, motor vehicle accidents, chemical and oil spills, rescue calls and weather-related emergencies. The department also assists other towns and agencies as requested and is comprised of approximately 238 employees, including staff and support personnel, who provide fire and rescue services from nine (9) stations. Station #2, the South End Station, is located approximately 0.5 mile south of the Stamford Transportation Center, at the corner of Washington Street and Atlantic Avenue (City of Stamford, 2010).

The City of Stamford's Emergency Communications Center (commonly referred to as 9-1-1), which services all of the police, fire, and emergency medical calls for the City. On a monthly basis, more than 5,000 "9-1-1 calls" and more than 15,000 "routine" calls are received at the center (City of Stamford, 2010).

The City also operates an Office of Emergency Management which serves as a liaison for the Mayor and city government agencies during public emergencies such as storm events, flooding, power failures, heat waves and evacuations. The Emergency Management Department also maintains the City of Stamford's Emergency Operations (City of Stamford, 2010).

3.20.2 Impact Evaluation

The No-Action Alternative would not result in any to the demand for or provision of public health and safety services in Stamford.

The Proposed Action is anticipated to result in a minor increase in motor vehicle traffic at the Stamford Transportation Center in response to additional parking availability compared to existing conditions. A significant increase in ridership is not anticipated since the replacement garage will only result in a net increase of 280 parking spaces and may simply provide for more convenient parking for rail passengers already utilizing the Stamford Transportation Center. However, minor increases in vehicular traffic and rail passengers are not anticipated to adversely

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affect the public safety at or in the vicinity of the Stamford Transportation Center nor result in adverse indirect impacts by placing a significantly greater demand on public health and safety services in Stamford.

3.20.3 Mitigation

No adverse impacts to public health and safety services are anticipated. Therefore, no mitigation is necessary or proposed.

3.21 Demolition and Construction Period Impacts

The Proposed Action will require demolition of the original portion of the existing parking garage at the Stamford Transportation Center. An evaluation of the associated construction-phase impacts and mitigation measures are described in this section. The existing conditions at the site are not applicable to this section. Additionally, the No-Action Alternative includes no construction and is therefore not discussed.

3.21.1 Impact Evaluation

Traffic

Impacts are anticipated to traffic flow in and around the Stamford Transportation Center during construction. With closure of the existing portion of the garage during construction, two entrance/exit access points and one exit-only access point will be unavailable. It will be necessary for all drivers entering and exiting the remaining section of the garage to enter via the driveway on Atlantic Street unless other temporary access routes are provided during construction.

Internal circulation of the garage structure currently occurs via independent, internal ramps in both the original garage structure and the expansion garage structure, such that the expansion structure can function independently from the original structure with the original structure removed. The separate garage structures are also connected via access ramps that, during construction, would be closed and the voids blocked.

It may be necessary to close the eastbound side of Station Place for certain periods of time as construction dictates. This closure should not impact traffic significantly, as all vehicles entering the garage will be required to use the Atlantic Street driveway. However, it may result in a temporary small increase in delay at adjacent intersections along South State Street if garage traffic is diverted.

Taxi and livery drivers use Station Place exclusively in the westbound direction, as the taxi pickup area is associated with the rail station portion of the transportation center on the north side of Station Place. As such, is it not anticipated that taxi and livery service will be significantly affected.

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Installation of Intelligent Transportation System (ITS) components is planned for the existing garage complex. ITS components, which include display screens that show train schedules and traffic alerts, will be located in both the original and expansion portions of the structure. It is anticipated that installation of these measures will not occur until after the original portion of the parking garage is replaced, in which case, no impacts to the ITS components will occur. There is the potential that installation of the ITS components will occur prior to demolition of the structure. In this case, the affected ITS components, which are anticipated to include display screens on each floor and data conduit connecting the display screens, will be removed during the construction period and replaced following completion of construction.

Parking

The construction of the proposed garage will require the removal of the existing 720 space parking garage. Given the utilization of the existing garage, this will create an average daily deficit of approximately 500 parking spaces during the construction period.

The majority of the American with Disabilities Act (ADA) accessible parking spaces in the garage complex are in the original portion of the garage structure (approximately 34 of a total of approximately 39). As such, demolition of the original portion of the garage will result in a loss of approximately 87% of the transportation center's ADA parking during construction.

Considerations Relating to Pedestrians and Bicyclists

During the interim construction period, pedestrian access between the garage and the transportation center will be restricted to the at-grade crossing and the pedestrian overpass on the east side of the garage due to the removal of the west pedestrian footbridge. This restriction will result in a minor inconvenience to pedestrians walking from vehicles parked in the western side of the remaining parking garage, however the impact should not be significant. Pedestrian and bicycle access from the adjacent roadways will not be impacted.

Considerations Relating to Local Transit

Rail, bus, taxi, and livery service will be maintained throughout the construction period, therefore no significant impacts to local transit are anticipated during the construction period.

Air Quality

Potential construction air quality impacts can occur due to the use of diesel-powered construction vehicles. Diesel air emissions include carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter (PM10 and PM2.5). Emissions from construction equipment are anticipated to be significantly less than the total emissions from other industrial and transportation sources in the region, and therefore, are expected to be insignificant with respect to compliance with the NAAQS. However, potentially localized air quality impacts could occur as a result of diesel exhausts from construction equipment in the vicinity of the project site.

Roadway traffic disruption due to lane closures, detours, and construction vehicles accessing the site can cause congestion which can increase motor vehicle exhaust emissions. These impacts

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will be mitigated by implementing appropriate traffic management techniques during the construction period.

Fugitive dust emissions can occur during demolition, ground excavation, material handling and storage, movement of equipment at the site, and transport of material to and from the site. Fugitive dust is most likely to be a problem during periods of intense activity and would be accentuated by windy and/or dry weather conditions.

Noise

Construction activities are a potential source of short-term noise impacts, which can include both continuous and intermittent noise being received by nearby receptors. It is difficult to reliably predict the sound levels that may occur at a particular receptor or group of receptors as a result of construction activity. Heavy construction equipment is the principal source of noise during construction activity, and the pattern of heavy equipment use is constantly changing as a construction project progresses. *Table 3-19* presents noise levels generated from selected construction equipment that may be present as part of the proposed project (FTA 2006).

Table 3-19. Typical Noise Levels From Construction Equipment

Equipment	Typical Noise Level (dBA) 50 Feet From Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	81
Jack Hammer	88
Loader	85
Rock Drill	98
Saw	76
Shovel	82
Spike Driver	77
Truck	88

In general, sources of noise grouped close together constitute a point source, which have been shown to attenuate by approximately 6 dBA for each doubling of distance (FTA 2006). Residences on Henry Street are the closest to the original portion of the garage structure where there are no intervening structures (such as the garage expansion structure that will remain) are located approximately 535 feet from the original portion of the garage. This distance is greater than three doublings of the 50-foot noise measurement distance presented in the table, or equivalent to a 18 dBA reduction in noise level. At this distance, the loudest impulse noise, the rock drill, is reduced from 98 to 80 dBA, and continuous noise, such as a truck, is reduced from 88 dBA to 70 dBA. These levels are elevated above the estimated ambient sound levels presented in Section 3.7; however, construction noise is exempt under 22a-69-1.8(g) of the

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Connecticut Regulations for Control of Noise due to the temporary nature of construction-related noise.

Community Resources

Community resources include services that exist to improve the health and well being of the public, including schools, health care facilities, emergency response services, public safety, libraries, daycare, and other community organizations. No community resources are housed within the Stamford Transportation Center, and it is unlikely that local community resources depend on parking availability at the Stamford Transportation Center such that parking at the alternative parking locations is not satisfactory. As such, no direct impacts to community resources are anticipated during the construction period.

Stormwater and Water Quality

Activities that result in the disturbance of stabilizing groundcover, including pavement, buildings, landscaping, and natural vegetation, can leave soil exposed and subject to erosion. Soil erosion resulting in discharges to and sedimentation in adjacent receiving waters is associated with adverse impacts to water quality and aquatic habitat.

During the Proposed Action, soils may be exposed following demolition of the original portion of the existing garage structure and associated site work in its immediate vicinity. Since the project location is surrounded by roadways, sidewalks, and the garage expansion structure, each of which must remain in service during construction, exposure of soil will be limited to the proposed structure footprint and the area immediately surrounding it.

Solid Waste, Toxics, Pesticides, and Hazardous Materials

Under the Proposed Action, residual petroleum-contaminated soil from the release at 433 Washington Boulevard may be encountered during demolition and re-construction. Additionally, there is the potential for other contaminated soil or groundwater that has not yet been identified to be encountered during construction, such as during connection to buried utilities. Regulatory requirements may necessitate reporting conditions encountered at this site to a State or Federal regulatory agency. Possible State or Federal regulatory requirements are discussed in Section 3.19.2, along with permits for the handling and transport of potentially contaminated soils at the site.

Additionally, although the original garage structure was constructed in 1984, the potential exists for asbestos containing materials (ACMs) to be present. If disturbed, friable asbestos could be inhaled by workers or the public near the site during construction or released to soil or groundwater where ongoing risk of exposure to the public would remain. Other hazardous and regulated materials could potentially be present, including solvents, lights, ballasts, thermostats, and other similar items.

Demolition of the existing construction will generate a significant quantity of construction and demolition debris that will require management and disposal.

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Construction machinery, fuels, maintenance fluids, paints, solvents, and other hazardous or toxic construction materials may be present at the site during construction period, with potential for exposure to workers and the public.

Safety

The Proposed Action will include demolition and construction activities in a dense urban area near roadways pedestrian routes, and parking areas that will remain partially or completely open during construction. Demolition and construction activities will require heavy equipment operation for construction and material handling, resulting in potential safety impacts to traffic and pedestrians in the surrounding area. Additionally, uneven surfaces, falling objects, trenching, inadequate construction barriers, inadequately rerouting traffic and pedestrians during construction, inadequate signage, and other activities can pose a hazard to the public if not properly managed.

Utilities

Adequate utility service is available in the project area to facilitate construction activities. Planned, temporary electrical outages may be required to connect new construction to existing service. It is not currently anticipated that sewer, water, or gas service lines would need to be relocated to accommodate construction, although temporary disruptions could occur if relocation is required.

3.21.2 Mitigation

Traffic

It may be necessary to provide temporary additional pay stations at the Atlantic Street driveway location in order to accommodate the volume of vehicles exiting during the peak hours. Alternatively, other entrances to the garage expansion structure could be modified temporarily during construction to improve entrance and exit capacity, including the High Top Van entrance and emergency exit on Atlantic Street, or the exit on the west side of the expansion structure located south of the original portion of the garage that is currently used as a taxi idling area but has no existing external access route. Details regarding access to the garage during construction will be established during design and will ensure operation occurs as smoothly as can be provided in the context of site constraints.

Traffic management around the station during construction will be necessary to maintain efficient traffic and pedestrian circulation, particularly given the anticipated usage of off-site parking locations and shuttle system. Impacts to traffic and parking during construction will be mitigated through implementation of a traffic management plan, including construction phasing to minimize disruptions to traffic, establishing haul routes and staging areas, permissible hours of work, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian street crossings.

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ITS components that could be affected by demolition will be removed during the construction period and replaced following completion of construction.

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Parking

As discussed in *Section 2.4*, adequate temporary parking is available in several alternative parking locations near the Stamford Transportation Center, with preferred alternative parking located at two nearby surface parking lots and two nearby parking garages, all of which will require shuttle transportation.

It is important to note that ADA accessibility to the transportation center from the alternative temporary parking areas may be poor. As such, the ADA parking spaces that will be temporarily lost during demolition and construction should be provided in the garage expansion structure that will remain, or in other accessible areas on the transportation center grounds. Replacement ADA spaces will require temporary conversion of approximately 1.5 standard spaces in the expansion portion of the garage structure, such that replacing the 34 lost ADA spaces will require conversion of approximately 51 standard spaces. This additional deficit of 17 standard spaces lost through conversion is small and can be accommodated in the alternative off-site parking areas. The locations of the spaces will be determined during the detailed design process.

It will be necessary to provide detailed detour route signage providing drivers with guidance to the offsite parking lots, as they are not located immediately adjacent to the station. Signage will be required for the duration of the project on the local streets, with "full" signs erected at the existing garage once the available spaces have been occupied. Construction-phase parking mitigation measures should also be included in a traffic management plan for the project.

Considerations Relating to Pedestrians and Bicyclists

No significant construction-period impacts are anticipated. Therefore, no mitigation is necessary or proposed.

Considerations Relating to Local Transit

No significant construction-period impacts are anticipated. Therefore, no mitigation is necessary or proposed.

Air Quality

Potential air quality impacts from diesel exhausts will be addressed through the proper operation and maintenance of construction equipment, and prohibition of excessive idling of engines. Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies limits the idling of mobile sources to 3 minutes.

Additionally, CTDOT will consider requiring diesel powered non-road construction equipment to include retrofit emission control devices or to use clean alternative fuels to reduce diesel emissions, or both. In general, these requirements would apply to diesel powered non-road construction equipment with engine horsepower ratings of 60 that will be used on the project or assigned to the contract for a period in excess of 30 consecutive days.

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CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction (Form 816, 2004) requires contractors to control and abate dust and other potential air pollutants (Section 1.10.04). Potential air quality impacts from fugitive dust will be addressed through the following mitigation measures:

- Reducing exposed erodible earth area to the extent possible through appropriate construction phasing.
- Stabilization of exposed earth with grass, pavement, or other cover as early as possible.
- Application of stabilizing agent (i.e., calcium chloride, water) to the work areas and haul roads.
- Covering, shielding, or stabilizing stockpiled material as necessary.
- Use of covered haul trucks.
- Limiting dust-producing construction activities during high wind conditions.
- Rinsing of construction equipment with water or any other equivalent method to minimize drag-out of sediment by construction equipment onto the adjacent roads.
- Street sweeping of roads within construction areas.

Noise

Potential noise impacts during construction will be addressed through the following mitigation measures, which will be incorporated into the contract specifications for the project:

- Restriction of work to 7:00 a.m. to 9:00 p.m. local time. Although construction noise is exempt under the Connecticut Noise Regulations (22a-69-1 through 22a-69-7.4), those hours of work which are specified for lawn maintenance equipment provide a reasonable estimate of acceptable work hours.
- Proper maintenance of equipment, and advance notification of nearby sensitive receptors of activities that may produce excessive sound levels.
- The Connecticut Department of Transportation standard specification for noise pollution (Form 814A, Section 1.10.05), which states that the maximum allowable level of noise at the residence or occupied building nearest to a project site shall be 90 decibels on the "A" weighted scale (dBA).

Community Resources

No significant construction-period impacts to community resources are anticipated. Therefore, no mitigation is necessary or proposed.

Stormwater and Water Quality

Development and redevelopment projects which disturb one or more total acres of land are required to obtain a permit from the CTDEP under the *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities*. This permit requires that the applicant develop a Stormwater Pollution Control Plan. The plan requires the implementation of measures to prevent pollution in discharged stormwater to be consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control. Appropriate implementation

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of controls in accordance with this general permit and the guidelines will prevent construction-period impacts to stormwater and water quality.

Solid Waste, Toxics, Pesticides, and Hazardous Materials

The subject site has not been entered into a formal state remediation program and is not currently subject to Connecticut Property Transfer Regulations. However, if State funding is to be used for the construction of the replacement structure, it is likely that the site will be required to enter into a voluntary remediation program. Compliance with the Connecticut Remediation Standard Regulations (CT RSRs) will be required if the site is entered into a voluntary remediation program. The RSR residential direct exposure numeric criteria (Res DEC) are likely the appropriate criteria to guide remediation activities at the site since they are risk-based criteria developed to protect human exposure to hazardous material and petroleum products.

The environmental quality of the soil in the southwestern corner of the site has been determined during soil investigation and remediation at the adjacent (433 Washington Blvd.) parcel and it is known that soil containing petroleum concentrations above the Res DEC exists in this area. To protect human health by limiting exposure to hazardous material, petroleum contaminated soil excavated during construction activities should be properly characterized and disposed of off-site at a permitted facility. An environmental professional should oversee the excavation of the garage foundation in the southwestern corner of the subject site. Mitigation will consist of the excavation and off-site disposal of potentially contaminated soil or excavation and relocation of polluted soil below pavement or below the new garage structure, assuming that compliance with all applicable regulatory requirements is possible. The environmental professional will direct the excavation of contaminated soil from this area of the subject site using visual observation, field screening results, and laboratory results from soil samples collected from the excavation limits.

Excavated soil from this area should be stockpiled on polyethylene sheeting. At the end of each work day the soil stockpile should be covered with polyethylene sheeting and the ends of the sheeting secured. The limits of the contaminated soil excavation will be determined in the field based on PetroFlag test kit screening results. Once the screening results indicate that soil containing concentrations of petroleum above the Res DEC has been removed from the southwestern corner of the subject site, demolition and construction activities can continue without stockpiling the soil. Soil samples should be collected from the limits of the contaminated soil excavation area to confirm that soil containing concentrations of petroleum above the Res DEC associated with contamination of the adjacent property has been removed. In order to characterize the polluted soil for waste characterization and disposal purposes, one composite soil sample should be collected from the soil stockpile per the sampling frequency specified by the disposal facility.

A Soil Management Plan will be developed for the project to address potentially-contaminated soil encountered during construction. The plan will include provisions for the sampling, analysis, stockpiling, transportation, and disposal of potentially-contaminated soil. The plan will be consistent with the CTDEP *Guidance for Utility Company Excavation*.

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Construction and excavation activities should be performed in accordance with the CTDEP *General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)*. If de-watering is anticipated to occur during the excavation of the existing garage foundation, a General Permit for the discharge of wastewater should be applied for. It is unknown whether groundwater at the subject site has been impacted by hazardous material and/or petroleum products.

Pre-demolition surveys will be performed for ACMs prior to demolition. Written notice will be submitted to the Connecticut Department of Public Health (CTDPH) prior to demolition in accordance with RCSA Section 19a-332a-3 for buildings involving more than 10 linear feet of more than 25 square feet of ACM. Approval will be obtained from CTDEP pursuant to RSCA Section 22a-209-8(i) prior to disposal in an approved landfill.

Demolition of the existing construction will generate a significant quantity of construction and demolition debris. The material will be segregated on-site and reused or recycled to the extent possible and the remainder disposed in a landfill. Disposal of ACM or other regulated wastes generated during demolition and construction activities may also require a CTDEP Special Waste or Asbestos Disposal Authorization.

Construction machinery, fuels, maintenance fluids, paints, solvents, and other hazardous or toxic construction materials may be present at the site during construction periods. These materials will be managed following appropriate best management practices, regulatory programs, and manufacturer recommendations to prevent significant impacts.

Safety

Measures will be undertaken by CTDOT and the project contractor to avoid safety impacts during the construction period. Potential measures, adopted from FHWA (2001) may include:

- Using backup alarms on construction equipment
- Providing police details for directing traffic around construction equipment
- Providing safety cones and barrels indicating temporary roadway hazards
- Providing alternative routes for traffic and pedestrians
- Providing a continuous, accessible path of travel around or through construction
- Placement of effective barriers
- Keeping the pedestrian zone free of potentially dangerous equipment
- Ensuring that curb ramps remain accessible to crosswalks
- Ensuring that people with vision impairments can detect and avoid construction areas
- Providing scaffolding canopies for pedestrians if pedestrian routes will be maintained immediately adjacent to overhead construction areas.

Utilities

If planned electrical outages are required, the contractor will coordinate with the electrical utility and affected customers to minimize disruptions. If necessary, existing utilities will be relocated, maintained, and/or protected from disturbance or damage during construction in accordance

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with the requirements of each utility company. Street hardware will be adjusted as required to meet finished grade.

3.22 Secondary and Cumulative Impacts

CEPA regulations require that the sponsoring agency consider the secondary and cumulative impacts of its actions, in addition to direct impacts. Secondary or indirect impacts are effects of an action that are removed in time or distance from the action itself. Cumulative impacts are those that result from the incremental impact of a project when added to other past, present, or reasonably foreseeable future actions.

3.22.1 Secondary Impacts

The traffic analysis indicates that the proposed project will result in only minor increases in delay and no reduction in the level of service at the study area intersections, including those intersections that are not immediately adjacent to the Stamford Transportation Center parking garage. During construction, temporary increases in traffic volumes and minor increases in delay may occur at intersections in the vicinity of the temporary parking locations and between the temporary parking locations and the Stamford Transportation Center. Shuttle service is also recommended between the temporary parking locations and the Stamford Transportation Center, resulting in increased shuttle bus traffic on the local roadway network.

Traffic management around the station during construction will be necessary to maintain efficient traffic and pedestrian circulation, particularly given the anticipated usage of off-site parking locations and shuttle system. Impacts to traffic and parking during construction will be mitigated through implementation of a traffic management plan, including construction phasing to minimize disruptions to traffic, establishing haul routes and staging areas, permissible hours of work, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian street crossings.

No other significant impacts to the natural or built environment are anticipated at the selected temporary parking locations resulting from the usage of these locations for parking during construction of the replacement garage. The recommended temporary parking locations are existing parking facilities with sufficient available capacity to serve the excess parking demand at the Stamford Transportation Center during construction. No new construction or physical modifications to the temporary parking locations are required to accommodate the proposed temporary parking at these facilities.

The replacement parking garage will result in a net increase of 280 parking spaces and therefore represents a relatively minor increase in the existing parking at the Stamford Transportation Center. The expanded replacement garage is intended to meet existing and future parking demand and may provide for more convenient parking for rail passengers already utilizing the Stamford Transportation Center, but is unlikely to significantly increase ridership or induce new development or redevelopment in the area. Construction of the replacement garage will provide

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short-term economic benefits from construction-related employment and associated direct expenditures and spin-off economic impacts.

Other potential construction-phase secondary impacts include planned, temporary disruption of utility service (electric, telecommunications, etc.) to areas around the Stamford Transportation Center during the demolition of the existing structure and/or during specific phases of the construction that involve connection of public utilities to the replacement parking garage. These potential impacts will be addressed through coordination between the CTDOT and its contractors and the public utility providers.

Lastly, if the planned Intelligent Transportation System (ITS) components are installed in the Stamford Transportation Center parking garage complex prior to construction of the replacement garage, the ITS components would need to be removed before and during construction, which could affect the operation of the area-wide system. Removal of the ITS components will be coordinated by the CTDOT, as necessary, to ensure that the area-wide system, exclusive of the affected parking garage components, remains operational during the construction period.

3.22.2 Cumulative Impacts

The potential cumulative impacts of the Proposed Action are documented in the following sections, including identification of the resource categories, geographic area, and timeframe for which cumulative impacts can be reasonably expected to occur.

Cumulative Impacts Analysis Topics

Potential cumulative impacts can occur to those resources for which direct or indirect impacts are also anticipated. Therefore, the following resources were considered in the cumulative impacts analysis based on the direct and indirect impacts identified in previous sections of this EIE:

- Traffic and Parking – although no significant direct or indirect impacts are anticipated, cumulative impacts are analyzed due to minor increases in traffic on the local roadway network
- Demolition and Construction Period Impacts:
    - Traffic and Parking – potential secondary impacts to traffic operations of the roadway network associated with off-site parking and shuttle service during construction, as well as direct impacts to ADA parking at the existing garage during construction
    - Hazardous Materials – potential impacts to the environment and human health due to known soil contamination beneath a portion of the original parking garage, other subsurface contamination that could be encountered during construction, and the potential presence of asbestos containing materials (ACM) and other hazardous and regulated materials in demolition debris
    - Air and Noise – potential air quality impacts associated with emissions from construction equipment and fugitive dust, and potential construction-related noise impacts

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Cumulative Impacts Analysis Area

The cumulative impacts analysis considers the geographic area within which previous or future (i.e., planned and programmed) projects would be reasonably expected to have a cumulative effect in combination with the Proposed Action. Geographic boundaries of the resources that may be affected by direct or indirect impacts of the Proposed Action were reviewed to select an appropriate boundary for each resource category in the cumulative impacts analysis (*Table 3-20*).

Table 3-20. Geographic Areas for Cumulative Impacts Analysis

Resource	Geographic Area
Traffic and Parking	Traffic analysis study area
Demolition and Construction Period Impacts:	
Traffic and Parking	Distance from the Stamford Transportation Center to the recommended temporary parking locations (approximately one half mile from the project site)
Hazardous Materials	Footprint of existing parking garage (area of documented soil contamination below and adjacent to the Stamford Transportation Center)
Air and Noise	Area immediately adjacent to or downwind of the Stamford Transportation Center (one quarter mile from the project site)

Cumulative Impacts Analysis Timeframe

The timeframe for analysis of cumulative impacts for traffic and parking begins with the construction of the Stamford Transportation Center Garage in 1984 and extends to 2029, which corresponds to an approximately 20-year planning window for the Proposed Action. The timeline for analysis of cumulative, construction-related impacts is limited to the construction period (late 2010 through the end of 2011).

Reasonably Foreseeable Future Actions

Despite the economic downturn in Connecticut and nationally, Stamford is experiencing significant ongoing and planned development and redevelopment activity in the downtown area, with numerous development projects that have been recently constructed, approved, or are in the planning stages. The following public and private development projects were considered in the cumulative impacts analysis. These projects are generally within or have the potential to affect resources located within the cumulative effects impact area.

- Atlantic Center – a planned residential condominiums and hotel located several blocks directly north of the Stamford Transportation Center and Interstate 95

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- Davenport Landing – a residential development containing residential, boat slips and an associated water-dependent amenity located on the west branch of the Stamford Harbor with street frontage on Southfield Avenue, Selleck Street, and Davenport Street
- Harbor Point – a major mixed-use redevelopment (office, retail, residential, hotels, parks) of an approximately 80-acre site located south of the Stamford Transportation Center
- Metro Green – a mixed-income residential and office development located one block from the Stamford Transportation Center on Henry Street between Atlantic Street and Washington Boulevard
- Park Square West – a residential apartment complex located in downtown Stamford several blocks north of the Stamford Transportation Center
- Royal Bank of Scotland – the North American headquarters of the Royal Bank of Scotland located north of the Stamford Transportation Center, adjacent to Interstate 95
- Sound View Farms – a corporate office park located approximately 1 mile southwest of the Stamford Transportation Center
- Stamford Town Center – an urban shopping mall at Greyrock Place in downtown Stamford
- Trump Park – a high-rise condominium tower located on Broad Street several blocks north of Interstate 95 and the Stamford Transportation Center
- Yale & Towne – a residential redevelopment of the former Yale and Towne manufacturing complex located southeast of the Stamford Transportation Center and south of the Stamford Urban Transitway

Reasonably foreseeable future actions also include infrastructure improvements within the study area and local and regional transportation projects that are currently planned or in the permitting process. These ongoing and future actions include:

- Stamford Complete Streets and Transit Access Project – planned improvements to Washington Boulevard, Atlantic Street, Pacific Street, Canal Street, and Market Street
- CTDOT Metro-North Five Bridges at Stamford Project – this project will improve access to the City of Stamford by reconstructing the five Metro-North railroad overpasses, located at Atlantic Street, East Main Street, Elm Street, Canal Street, and Greenwich Avenue
- Stamford Urban Transitway Project Phase I and Phase II
- Potential improvements identified in the City of Stamford Transportation Center Master Plan
- Various minor improvements and repairs to the railroad stations on the New Haven Line

Potential Cumulative Impacts

Traffic

The traffic analysis presented in Section 3.3 of this EIE includes the recent and planned public and private developments within the study area as well as the Stamford Urban Transitway. Therefore, the traffic impact analysis results presented previously accounts for potential

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cumulative impacts to traffic. The analysis indicates that significant levels of delay are expected throughout the study area network under the No-Action condition. While significant delay persists throughout the study area network during the morning and afternoon peak hours, the majority of the delay is due to high existing traffic volumes combined with background traffic volume growth and new developments throughout the city. The additional traffic volumes generated by the Proposed Action are not expected to cause a decrease in level of service or significant increase in delay at any of the study area intersections. The Proposed Action will therefore have no adverse cumulative impacts on traffic in the study area.

It is important to note that the Stamford Urban Transitway project that includes the extension of Dock Street to Atlantic Street (completed) and improvements to Jefferson Street and Cherry Street (under construction at the time of writing this EIE) will benefit traffic operations in the study area upon completion and improve access/egress to the Stamford Transportation Center. The four-lane Transitway will provide a parallel east-west conduit to North and South State Street and improved transit flow via HOV-Bus lanes. This additional roadway capacity will reduce future vehicle delays on the frontage roads.

The City of Stamford should consider strategies to encourage existing businesses and future development to implement Transportation Demand Management (TDM) and other volume reduction measures throughout the study area, as further capacity improvements are not feasible at the majority of the intersections. These measures could include incentives for use of carpooling, transit, flex work hours, telecommuting, and walking/biking to work or the Stamford Transportation Center. These strategies would allow for better utilization of the available capacity throughout the Stamford roadway network.

Parking

The Proposed Action will result in a net increase of 280 parking spaces at the Stamford Transportation Center. These additional spaces will not fully address the current waiting list for monthly parking privileges but will partially fulfill the existing and anticipated future parking demand by providing additional, convenient on-site parking. The Proposed Action will therefore have a minor beneficial cumulative effect on parking. The CTDOT in coordination with the City of Stamford should explore other alternatives to address the long-term parking needs of the study area and downtown Stamford, including additional long-term parking alternatives near the transportation center within the context of transit oriented development.

Demolition and Construction Period Impacts

The Proposed Action could have potential cumulative impacts related to traffic and parking, hazardous materials, and air and noise during the construction phase of the project.

- *Traffic and Parking* – During construction, increases in traffic volumes and minor increases in delay may occur at intersections in the vicinity of the temporary parking locations and the Stamford Transportation Center. The increase in traffic volumes on the roadway network, combined with background traffic growth and traffic associated with the construction and operation of other planned developments, could result in temporary adverse cumulative traffic impacts during the construction period.

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Traffic management around the station during construction will be necessary to maintain efficient traffic and pedestrian circulation. Impacts to traffic and parking during construction will be mitigated through implementation of a traffic management plan, including construction phasing to minimize disruptions to traffic, establishing haul routes and staging areas, permissible hours of work, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian street crossings. The traffic management plan should account for other ongoing and planned developments that may synergistically affect traffic in the study area during construction of the replacement parking garage.

ADA parking spaces in the original portion of the parking garage will be temporarily lost during construction. To mitigate the temporary loss of ADA parking at the garage complex during construction, additional ADA parking will be provided in the garage expansion structure that will remain, or in other accessible areas on the transportation center grounds. No other reasonably foreseeable actions would affect ADA parking at the Stamford Transportation Center. Therefore, no cumulative impacts are anticipated.

- *Hazardous Materials* – The generation of hazardous and regulated materials from the demolition of the parking garage and construction of the replacement garage, together with construction and demolition debris from other construction projects in the study area, would result in a cumulative increase in the generation and disposal of hazardous and regulated materials. However, adequate waste handling and disposal facilities are available in the region, and no adverse cumulative effects are anticipated.

- *Air and Noise* – Construction-related air quality and noise impacts associated with the parking garage replacement project, combined with potential similar impacts from other construction projects in or near the study area, could result in cumulative construction-phase air and noise impacts on adjacent land uses. Potential adverse cumulative air quality impacts will be mitigated through the proper operation and maintenance of construction equipment, prohibition of excessive idling of engines, possible use of emission control devices and/or the use of clean alternative fuels to reduce diesel emissions, and adherence to the CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction (Form 816, 2004) for the control of dust and other potential air pollutants (Section 1.10.04). Potential adverse cumulative noise impacts will be mitigated by placing restrictions on the hours of work; proper maintenance of equipment, and advance notification of nearby sensitive receptors of activities that may produce excessive sound levels; and compliance with the CTDOT standard specifications for noise pollution (Form 814A, Section 1.10.05).

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4 Summary of Impacts and Mitigation

4.1 Unavoidable Adverse Impacts

Unavoidable adverse impacts from the Proposed Action are anticipated to include:

- Minor increases in delay at intersections in the study area.
- Temporary construction-related impacts associated with noise, air quality, traffic, parking, and hazardous materials.

The Proposed Action continues an existing use of the project site that supports adjacent transportation-related uses and does not result in any adverse secondary or induced development effects. The Proposed Action will incorporate appropriate mitigation measures as summarized in *Section 4.3*. Consequently, the unavoidable adverse affects associated with the Proposed Action are not anticipated to be significant.

4.2 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable commitment of resources associated with the Proposed Action consist of resources that remain committed to a project through its lifespan (i.e., irreversible commitment) or those that are consumed or permanently impacted during project construction and operation as a result of the proposed project (i.e., irretrievable commitment).

Irreversible and irretrievable resources that would be committed to the Proposed Action include:

- Energy – Energy will be used for project construction and operation of the parking garage.
- Construction materials – Natural, synthetic, and processes materials will be used for construction of the Proposed Action.
- Land – The site will continue to be committed to a transportation use as a result of the Proposed Action.
- Human labor - The dedication of human labor to the construction phase of the project represents an irretrievable expenditure of time and production that will be unavailable for other uses.
- Financial - The expenditures required represent funds that, once committed, are no longer available for other purposes and once spent, cannot be regained.

4.3 Summary of Mitigation Measures

Mitigation measures that will reduce or offset potential adverse impacts associated with the Proposed Action are summarized in *Table 4-1*.

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Table 4-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Land Use, Zoning, and Local and Regional Development Plans	• Proposed Action is consistent with land use, zoning and local/regional development plans	• None required
Consistency with State and Regional Plans	• Proposed Action is consistent with state and regional plans	• None required
Traffic and Parking	• No adverse impacts. Net increase of 280 parking spaces over existing conditions.	• None required
Considerations Relating to Pedestrians and Bicyclists	• No adverse impacts	• None required
Considerations Relating to Local Transit	• No adverse impacts	• None required
Air Quality	• No adverse impacts	• None required
Noise	• No adverse impacts	• None required
Socioeconomic Resources	• No adverse impacts	• None required
Water Quality	• Minor increases in pollutant loading to stormwater from additional parking decks and vehicle trips	• Separate stormwater discharges from the roof deck, which will be greater in quantity and lower in pollutant levels, from drainage from the lower floors, which is likely to be higher in pollutant concentrations. Treat each of the separated discharges for the anticipated pollutant of concern, including sediment from the roof deck, and oil and grease from the lower decks. Discharge the former to the storm sewer and the latter to the sanitary sewer.

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Table 4-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Hydrology and Floodplains	• Delay in peak discharges, if any, resulting from stormwater treatment could cause site discharges to coincide with discharges from the larger watershed. • Changes in apportionment of stormwater discharges between drainage areas could cause increased peak discharges in a local drainage system	• Evaluate need for and potential effects of peak flow attenuation during design and permitting • Apportion stormwater according to existing drainage patterns or demonstrate that adequate stormwater system capacity is available in the receiving drainage systems • Document findings in Flood Management Certification to be filed with CTDEP
Wetlands	• No impacts	• None required
Coastal Resources	• Proposed Action is consistent with coastal management policies	• None required
Flora, Fauna, Threatened and Endangered Species	• No impacts	• None required
Soils and Geology	• No impacts	• None required
Cultural Resources	• No impacts	• None required
Solid Waste, Toxics, Pesticides, and Hazardous Materials	• No adverse impacts	• None required
Aesthetics/Visual Effects	• No adverse impacts	• None required
Energy Use and Conservation	• Proposed Action includes additional parking which will allow for more vehicle trips. • Project Action includes construction of a larger structure which will require more energy consuming products compared to the original portion of the existing structure	• Additional parking will encourage transit usage and decrease vehicle miles travelled on regional roadways • Replacement structure will meet high performance construction standards for state-owned buildings, which will require structure to consume less energy than current Connecticut State Building Code or ASHRAE standards

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Table 4-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Public Utilities and Services	• Minor increases in potable water demand may occur for washdown of additional parking decks. • Minor increases in sewer discharges may occur from lower deck drainage	• Deck washdown discharges will be properly permitted, and floor drainage discharged to the sewer will be treated in an oil/water separator
Public Health and Safety	• No adverse impacts	• None required
Demolition and Construction Period Impacts		
Traffic	• Potential temporary closure of Station Place Eastbound • Loss of two entrance/exit access points and one exit-only point to the parking structure during construction • Temporary disruption of Intelligent Transportation System components, if installed prior to construction • Temporary increases in delay surrounding the garage and surrounding alternative temporary parking areas	• Provide temporary additional pay stations at the Atlantic Street driveway location, or temporarily modify other entrances to the structure during the construction period to accommodate entrances and exits • Implement a Traffic Management Plan to maintain efficient traffic circulation, including construction phasing, establishing haul routes and staging areas, permissible work ours, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other controls to direct traffic • Replace affected ITS components
Parking	• Temporary loss of 720 parking spaces in the existing structure • Temporary loss of 34 ADA spaces within the existing structure	• Provide temporary alternative parking at nearby off-site locations to accommodate lost standard parking spaces • Provide temporary ADA parking locations within the expansion portion of the garage structure • Provide shuttle service to alternative off-site parking locations • Provide signage to indicate the location and availability of off-site parking
Considerations Relating to Pedestrians and Bicyclists	• Loss of western pedestrian overpass from the original portion of the garage	• Provide alternative pedestrian routes in a Traffic Management Plan • Replace pedestrian overpass following construction
Conditions Relating to Local Transit	• Minor delay during construction due to congestion caused by construction and closures	• Implement a Traffic Management Plan to maintain efficient traffic circulation, including construction phasing, establishing haul routes and staging areas, permissible work ours, designated shuttle routes, signage, detours, directions to alternate parking locations, uniformed officers, and other controls to direct traffic

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Table 4-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Air Quality	• Emissions from construction equipment • Increased vehicle exhaust emissions resulting from increased congestion during construction • Fugitive dust emissions during demolition and construction activities	• Ensure proper operation and maintenance of construction equipment • Prohibit excessive idling of construction equipment • Consider requiring use of clean alternative fuels or retrofit emission control devices for heavy machinery with engines of greater than 60 horsepower that will be assigned to the project for greater than 30 consecutive days • Implement traffic management measures during construction • Implement appropriate controls to prevent the generation and mobilization of dust
Noise	• Generation of noise by construction equipment and activities	• Contract specifications to ensure that noise levels at adjacent residences remain at less than 90 dBA • Restriction of work to 7:00 am to 9:00 pm local time • Properly maintain construction equipment • Provide advance notification to sensitive receptors regarding anticipated excessive noise levels
Community Resources	• No impacts	• None required
Stormwater and Water Quality	• Exposure of soil increases potential for erosion and sedimentation	• Prepare Stormwater Pollution Control Plan that complies with the *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities,* compliance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*
Solid Waste, Toxics, Pesticides, and Hazardous Materials	• Contaminated soils may be encountered and disturbed during construction • Structure to be demolished may contain regulated materials • Generation of a significant quantity of construction and demolition debris • Usage of hazardous or toxic construction materials	• Remediate contaminated soils as required • Develop soil management plan and follow applicable regulations and best management practices regarding the management and disposal of contaminated soils, including the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). • Perform pre-demolition surveys for ACM and other regulated materials and follow appropriate reporting, management, and disposal requirements • Segregate recyclable construction and demolition debris to the extent possible. Dispose the remainder at a licensed solid waste disposal facility. • Use potentially hazardous or toxic materials following applicable best management practices, regulatory requirements, and manufacturer recommendations
Safety	• Potential for impacts to workers and the public since the project will occur in a busy, dense urban area	• Implement measures to ensure safety of workers, pedestrians, and the public, including: backup alarms, providing police details, safety cones and barrels, appropriate alternative routes, a continuous accessible path of travel, maintaining ADA curb ramps, ensure that people with impairments can detect and avoid construction, and provide scaffolding canopies to protect pedestrians from falling objects

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Table 4-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Utilities	• Temporary outages may be necessary to accommodate connections • Utilities could be damaged accidentally	• Coordinate planned outages with the appropriate utility to minimize disruptions • Inform the public of anticipated outages • Relocate, maintain, or protect utilities from disturbance or damage • Adjust street hardware to meet finished grades

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5 Cost Benefit Analysis

Costs and benefits associated with a project are both quantifiable (tangible) and non-quantifiable (intangible). For the Proposed Action, costs are associated with demolition of the original portion of the parking garage, construction of the replacement parking garage and minor improvements to Station Place, implementation of mitigation measures, and operation of the replacement parking garage following construction.

The cost for demolition of the original portion of the garage structure and replacement with a new structure under the Proposed Action is estimated to be $35 million, with a design cost of $4 million (CTDOT, 2010). The replacement parking garage has a life expectancy of approximately 40 to 50 years (Desman Associates, 2006). The estimated cost to repair the original portion of the parking garage is similar in magnitude to that of full replacement ($35 million). However, the rehabilitation option has a life expectancy of 10 to 15 years, after which demolition and replacement of the rehabilitated structure would need to occur. Therefore, the Replacement Alternative is more cost-effective than the Repair Alternative. Replacement of the original portion of the parking garage also provides an additional 280 parking spaces, which better addresses the current and future demand for parking at the Stamford Transportation Center.

The project construction costs include most of the mitigation measures identified in this EIE, since the mitigation measures are primarily associated with potential construction-phase impacts. Costs associated with unknown or uncertain site conditions, such as potential remediation of petroleum-contaminated soil, will be refined during project design.

The operational and maintenance costs of the replacement garage are anticipated to be similar to those of the existing garage. While the replacement garage will be larger than the existing garage, it is likely to have similar staffing requirements, more energy efficient lighting and infrastructure, and significantly reduced routine maintenance and repairs, which may reduce the overall operational costs.

The primary benefits of the Proposed Action include addressing structural and non-structural deficiencies in the original portion of the parking garage and the availability of additional parking to address the demonstrated current and future high parking demand at the Stamford Transportation Center. Providing additional, convenient parking at the transportation center supports local, regional, and state initiatives to make commuter rail service an attractive alternative for commuters and residents of the region. Increased use of transit provides other economic and environmental benefits by reducing vehicle emissions and the consumption of fossil fuels.

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6 List of Certificates, Permits, and Approvals

The following certificates, permits, and approvals may be required for the construction and operational phases of the Proposed Action. This list will be refined during the project design phase.

Table 6-1. Certificates, Permits, and Approvals

Agency	Certificate/Permit/Approval	Discussed in Text
Federal		
	None Currently Anticipated	Not Applicable
State		
CTDEP	OLISP Coastal Zone Consistency Concurrence	Section 3.12
CTDEP	Flood Management Certification	Sections 3.10 and 3.12
CTDEP	General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities	Section 3.21
CTDEP	General Permit for Contaminated Soil and/or Sediment Management	Section 3.21
CTDEP	General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater	Section 3.9
CTDEP	Special Wastes or Asbestos Disposal Authorization	Section 3.21
State Traffic Commission	Major Traffic Generator Certificate	Section 3.3

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This document has not been thoroughly reviewed. It is being provided for convenience, but is not in any way a substitute for each interested Candidate conducting due diligence.

Appendix A

Project Scoping and Agency Coordination

Connecticut
Council on
Environmental
Quality
79 Elm Street
Hartford, CT 06106

Phone:
(860) 424-4000
Fax:
(860) 424-4070

Karl J. Wagener,
Executive Director
E-Mail Address:
karl.wagener@
ct.gov

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ENVIRONMENTAL MONITOR

The official site for project information under the Connecticut Environmental Policy Act

June 3, 2008

Scoping Notices

1. NEW! Parking Garage at Transportation Center, Stamford
2. NEW! Parking Garage at Union Station, New Haven
3. Housatonic River Basin Natural Resources Restoration Project, North Canaan, Salisbury, Cornwall, Sharon, Kent, Litchfield, Sherman, New Milford, Roxbury, Brookfield, New Fairfield, Southbury, Newtown, Beacon Falls, Seymour, Derby, Shelton, and Stratford.
4. Improvements to the Merritt Parkway/Route 7/Main Interchange, Norwalk
5. Construction of Two Classroom Buildings, Storrs
6. Danbury Branch Rail Line Alternatives Analysis, Fairfield and Litchfield Counties

Environmental Impact Evaluations

1. Improvements to the New Haven Rail Yard Maintenance Facility
2. Town of Oxford Road Infrastructure Project

State Land Transfers

There are no state land transfers posted for public notice or comment in this edition.

The next issue will be published on June 17 , 2008.

Subscribe to e-alerts to receive an e-mail when The Environmental Monitor is published.

Scoping Notices

Scoping Notices have been issued for the following state projects. These projects are in the earliest stages of planning. At the scoping stage, detailed information on a project's design, alternatives, and environmental impacts does not yet exist. Sponsoring agencies are asking for comments from other

agencies and from the public as to the scope of alternatives and environmental impacts that should be considered for further study. Send your comments to the contact person listed for the project by the date indicated.

1. Notice of Scoping – Parking Garage at Transportation Center , Stamford

Project Description: The project will consist of the demolition of the original parking garage and construction of a new parking garage for a minimum of 1000 spaces at the Stamford Transportation Center. The multi level garage will be located on the state owned parcel adjacent to Station Place as shown on the attached graphic. This project will include salvaging or renovating the original pedestrian bridge that spans from the garage connecting to the station building. Parking impacts and temporary relocation alternatives will be developed as part of this effort.

Project Map: Click here to view a map of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on: July 3, 2008 .

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting.

Written comments may be addressed to:

Name : Mr. Eugene Colonese
Agency : State of Connecticut Department of Transportation

Address : 2800 Berlin Turnpike
Newington , CT 06131

Tel: 203-789-7189

If anyone desires to review additional information, or have other questions about the scoping for this project, contact:
Name : Mr. Scott A. Hill
Agency : State of Connecticut Department of Transportation

Address : 2800 Berlin Turnpike
Newington , CT 06131

Phone : 860-594-3298
Fax: 860-594-3375
E-Mail : Scott.Hill@po.state.ct.us

The agency expects to release a Draft Environmental Impact Evaluation for this project, for public review and comment, in late 2008.

2. Notice of Scoping – Parking Garage at Union Station, New Haven

Project Description: The project is the construction of a new parking garage with a minimum of 670 spaces at Union Station in the city of New Haven . The multi level garage will be located on the state owned parcel between the Church Street Overpass and Union Station as shown on the attached mapping. This project will include a pedestrian bridge that will span from the garage connecting to Union Station on the southerly face as well as circulation improvements within the station itself. This project is considered Phase 1 of a larger initiative to bring transit oriented development type opportunities to the area
Project Map: Click here for a graphic of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on: July 3, 2008 .
Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting.

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Name : Mr. Eugene Colonese
Agency : State of Connecticut Department of Transportation
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Tel: 203-789-7189

If anyone desires to review additional information, or have other questions about the scoping for this project, contact:

Name : Mr. Scott A. Hill
Agency : State of Connecticut Department of Transportation
Address : 2800 Berlin Turnpike
Newington, CT 06131
Phone : 860-594-3298
Fax: 860-594-3375
E-Mail : Scott.Hill@po.state.ct.us

The agency expects to release a Draft Environmental Impact Evaluation for this project, for public review and comment, in late 2009.

3. Notice of Scoping for the Housatonic River Basin Natural Resources Restoration Project

Municipalities where proposed projects might be located: North Canaan, Salisbury, Cornwall, Sharon, Kent, Litchfield, Sherman, New Milford, Roxbury, Brookfield, New Fairfield, Southbury, Newtown, Beacon Falls, Seymour, Derby, Shelton, and Stratford.

Project Description: The Connecticut SubCouncil of the Housatonic River Natural Resource Trustee Council is reviewing projects for potential disbursement of the Connecticut portion of the Housatonic River Natural Resource Damages (NRD) recovery funds. The NRD funds were obtained from the General Electric Company (GE) as compensation for the injury to natural resources and natural resource services resulting from the release of hazardous materials into the Connecticut portion of the Housatonic River from the GE facility in Pittsfield, MA. The project will result in the development and implementation of a restoration plan. Projects under consideration include those that propose to restore aquatic natural resources, riparian and floodplain natural resources, and recreational uses of natural resources.

Project Map: Click here to view a map of the project area.

Additional information about the restoration project can be viewed online at: http://www.housatonicrestoration.org/

Written comments from the public are welcomed and will be accepted until the close of business on: Monday June 30, 2008

There will be a Public Scoping Meeting for this project at:

DATE: June 24, 2008

TIME: 7:00 p.m.

PLACE: Kent Town Hall, 41 Kent Green Boulevard, Kent, CT

NOTE: The Department of Environmental Protection is an affirmative action/equal opportunity employer. In conformance with the Americans with Disabilities Act ("ADA") individuals with disabilities who need information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call TDD (860) 424-3704 and make their request to the receptionist. Requests for accommodations to attend meetings and/or educational programs, sponsored by the DEP, must be made at least two weeks prior to the program date.

Written comments (email preferred) should be sent to:

Name:	Michael Powers, Restoration Coordinator
Agency:	Connecticut Department of Environmental Protection
	Inland Fisheries Division
Address:	79 Elm Street
	Hartford, CT 06106
Phone:	(860) 424-4102
Fax:	(860) 424-4070
E-Mail:	michael.powers@ct.gov

If you have questions about the public meeting or other questions about the scoping for this project, contact Mr. Powers as indicated above.

The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment, in September 2008.

4. Notice of Scoping for Improvements to the Merritt Parkway/Route 7/Main Avenue Interchange

Municipality where proposed project will be located: Norwalk, CT

Project Description: Reconstruction/Improvements to the Merritt Parkway/Route 7 and Main Avenue Interchange.

Project Maps: Click here to view map one of two

Click here to view map two of two

Written comments from the public are welcomed and will be accepted until the close of business on: Friday, June 13, 2008.

There will be a Public Scoping Meeting for this project at: The Norwalk City Hall

DATE: Thursday May 29, 2008

TIME: 6:30 for the open house

7:30 for the presentation

PLACE: Norwalk City Hall 125 East Avenue Norwalk, CT

NOTES: Additional information about the project can be viewed in person at the Connecticut Department of Transportation Headquarters at the address below

Name:	Ms. Jennifer Sweeney
Agency:	State of Connecticut Department of Transportation
Address:	2800 Berlin Turnpike Newington, CT 06131
Tel:	860-594-3227
E-Mail:	Jennifer.Sweeney@po.state.ct.us

If you have questions about the public meeting, or other questions about the scoping for this project, contact:

Name:	Mr. Keith T. Hall - Transportation Supervising Planner
Agency:	State of Connecticut Department of Transportation
Address:	2800 Berlin Turnpike Newington, CT 06131
Phone:	860-594-2926
Fax:	860-594-3028
E-Mail:	Keith.Hall@po.state.ct.us

The agency expects to release a Draft Environmental Impact Evaluation for this project, for public review and comment, in December, 2008.

5. Notice of Scoping for Construction of Two Academic Buildings, UConn at Storrs

Municipality where proposed project might be located : University of Connecticut

Address of Possible Project Location: Fairfield Way, Storrs, CT

Project Description: The University of Connecticut plans to construct: 1) a 136,000 square foot LEED Silver certified classroom and academic office building at the location of the former UConn Co-op, and 2) a 60,000 square foot LEED Silver certified classroom building at the location of the former Pharmacy Building. These buildings will house the Social Sciences and Humanities programs of Journalism, Modern and Classical Languages, Political Science, Economics, Linguistics, and Communications Sciences.

Project Map: Click here to view a map of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on **June 16, 2008.**

There will be a Public Scoping Meeting for this project at:

DATE: June 11, 2008

TIME: 6:30 p.m. to 8:30 p.m.

PLACE: Merlin D. Bishop Center, Room 7, One Bishop Circle, Storrs CT

NOTES:

Additional information about the project can be viewed in person at: UConn, OEP, 31 LeDoyt Road, Storrs, CT

Written comments and/or requests for a Public Scoping Meeting should be sent to:

Name: Paul Ferri
Agency: University of Connecticut
Office of Environmental Policy
Address: 31 LeDoyt Road , Unit 3055
Storrs, CT 06269-3055
Fax: (860) 486-5477
E-Mail: paul.ferri@uconn.edu

If you have questions about the public meeting, or other questions about the scoping for this project, contact:

Name: Paul Ferri
Agency: University of Connecticut
Office of Environmental Policy
Address: 31 LeDoyt Road , Unit 3055
Storrs, CT 06269-3055
Phone: (860) 486-9295
Fax: (860) 486-5477
E-Mail: paul.ferri@uconn.edu

The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment, in December 2008.

6. Notice of Scoping - Danbury Branch Rail Line Alternatives Analysis

Municipalities where proposed project will be located: New Milford, Brookfield, Danbury, Bethel, Redding, Ridgefield , Wilton, Norwalk

Project Description: The project is for proposed improvements to the Danbury Branch of the New Haven Rail Line, an existing single-track railroad between South Norwalk and Danbury, approximately 23.6 miles in length, which is owned by the Connecticut Department of Transportation, and the possible extension of passenger service on about 14.3 miles of existing single track railroad between Danbury and New Milford , which is owned by the Housatonic Railroad Company, Inc. The study will occur in the counties of Fairfield and Litchfield.

Project Map: Click here to view a map of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on: July 25, 2008.

Public Scoping Meetings for this study have been scheduled as follows:

- June 17, 2008: New Milford Town Hall (Paul Martin Conference. Room), 10 Main Street New Milford, CT.
- June 18, 2008: Wilton Town Hall (Annex Building Meeting Room A), 238 Danbury Road , Wilton, CT
- June 19, 2008: Ridgefield Town Hall (Large Conference Room), 400 Main Street, Ridgefield, CT.

The study team will be available at 6:00 p.m., at each of these public meetings, with a brief presentation beginning at 7:00 p.m.

Written comments may be addressed to:

Name: Mr. Carmine P. Trotta
Agency: State of Connecticut Department of Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
Tel: 860-594-2157

If you have questions about the public meeting, wish to review additional information, or have other questions about the scoping for this project, contact:

Name: Mr. Andrew Davis
Agency: State of Connecticut Department of Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
Phone: 860-594-2157
Fax: 860-594-3028
E-Mail: Andrew.H.Davis@po.state.ct.us

The agency expects to release a Draft Environmental Impact Evaluation for this project, for public review and comment, in July, 2011.

EIE Notices

The following Environmental Impact Evaluations (EIEs) have been completed by state agencies and are available for review and comment.

1. Notice of EIE for Improvements to the New Haven Rail Maintenance Facility

Municipality where project is proposed: New Haven

Address of Possible Project Location: The site of the current rail maintenance facility south of Union Avenue and north of Cedar and Hallock Streets.

Project Description: The project consists of the construction of new facilities at the New Haven Yard Maintenance Facility to serve the existing and future fleet of rail cars for the Metro-North Commuter Railroad. Individual projects are: Construction of new storage yard tracks, component change-out shop with support facilities, service and inspection shop, wheel true shop, maintenance-of-way building, material distribution warehouse, rail car wash facility, heavy repair/paint shop and parking structure. Rehabilitation to: existing storage yards, electrical multiple unit shop, car shop/critical systems repair and diesel shop. The overall project also includes the removal of the existing stores building, diesel tanks and water treatment/dewatering facility as well as the replacement of the propane tank and wheel true mill.

Project Maps: Click here to view a site location map of the project area.

Click Here to view a map of the project.

Comments on this EIE will be accepted until the close of business on : July 9, 2008

The public can view a copy of this EIE at: The New Haven City Clerks Office - 200 Orange Street, New Haven CT 06510, The New Haven Free Public Library - 133 Elm Street, New Haven, CT 06510, The South Central Regional Council of Governments - 127 Washington Avenue, 4th Floor, North Haven, CT 06473, The Connecticut Department of Transportation - 2800 Berlin Turnpike, Room 2155, Newington, CT 06131

There is a public hearing scheduled for this EIE on:

DATE: Wednesday June 25, 2008

TIME: 7:00 pm

PLACE: Gateway Community College - 60 Sargent Drive, New Haven, CT (Room 160)

Additional information about this project can be found online at:

Send your comments about this EIE to:

Name: Mr. Edgar T. Hurle - Transportation Planning

Director
Agency: State of Connecticut Department of Transportation
Address: 2800 Berlin Turnpike Newington , CT 06051
E-Mail: Edgar.Hurle@po.state.ct.us

If you have questions about the public hearing, or where you can review this EIE, or similar matters, please contact :

Name: Mr. Keith T. Hall - Transportation Supervising Planner
Agency: State of Connecticut Department of Transportation
Address: 2800 Berlin Turnpike Newington , CT 06051
E-Mail: Keith.Hall@po.state.ct.us
Phone: 860-594-2926

2. Notice of EIE for Town of Oxford Road Infrastructure Project

Municipality where the project is proposed: Town of Oxford, CT

Address of the possible project location: Northern sector of the Town in proximity to I-84 and Waterbury-Oxford Airport

Project Description: The Town of Oxford is planning several road and related infrastructure projects to enhance the Town's attractiveness for economic development around the Oxford Airport. The road improvements would provide improved transportation access in the airport vicinity to the commercial and industrially zoned land. The Town has expressed plans to pursue state and federal funding for these infrastructure projects. The first of these will consist of E. Commerce Drive which will connect to the Oxford Airport road system.

Project Maps: click here to view a map of the project area

click here to view a map of the proposed roads

There is no public hearing scheduled for this EIE : DECD will hold a public hearing if twenty-five persons or an association having not less than twenty-five persons requests such a hearing by May 2, 2008 (per CGS sec. 22-1d)

Comments on this EIE will be accepted from April 22, 2008 until the close of business on: June 6, 2008

The public can view a copy of this EIE which will be available from April 15, 2008 at:

- S.B. Church Memorial Town Hall, 486 Oxford Road, Oxford, CT 06478
- First Selectmen's Office, 486 Oxford Road, Oxford, CT 06478
- Town Clerk's Office, 486 Oxford Road, Oxford , CT 06478
- Oxford Public Library, 486 Oxford Road, Oxford, CT 06478
- DECD, 505 Hudson Street, Hartford, CT 06106

Send your comments about this EIE to :

Name: Maya Loewenberg
Agency: Economic and Community Development
Address: 505 Hudson, Hartford, CT 06106-7106
Fax: 860-270-8157
E-Mail: maya.loewenberg@po.state.ct.us

State Land Transfer Notices

There are no state land transfers posted for public notice or comment in this edition.

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STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

To: Eugene Colonese - Administrator of Rail Operations
DOT - Bureau of Public Transportation, 2800 Berlin Turnpike, Newington

From: David J. Fox - Senior Environmental Analyst **Telephone:** (860) 424-4111

E-Mail: david.fox@ct.gov

Date: July 3, 2008

Subject: Parking Garage at Transportation Center, Stamford

The Department of Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation for construction of a 1000-space parking garage at the Stamford Transportation Center. The following commentary is submitted for your consideration.

The proposed project is within Connecticut's coastal boundary as defined by section 22a-94 of the Connecticut General Statutes (CGS) and is subject to the provisions of the Connecticut Coastal Management Act (CCMA), sections 22a-90 through 22a-112. In accordance with CGS section 22a-100, state actions within the coastal boundary that may significantly affect the environment must be consistent with the standards and policies of the CCMA. The EIE should discuss the project's consistency with any applicable CCMA standards and policies. One coastal management concern which should be addressed in future phases of the planning process is the provision of adequate controls to mitigate potential stormwater impacts.

Stormwater management for parking garages typically should involve two separate collection systems designed to treat the runoff from different types of parking areas. Any exposed parking levels will produce a high volume of runoff with relatively low concentrations of pollutants. Runoff from such areas should be directed to the storm sewer system and the collection system should include controls to remove sediment and oil or grease. A hydrodynamic separator, incorporating swirl technology, circular screening technology or engineered cylindrical sedimentation technology, is recommended to remove medium to coarse grained sediments and oil or grease. The treatment system should be sized such that it can treat stormwater runoff adequately. The Department recommends that the treatment system be designed to treat the first inch of stormwater runoff. Upon installation, a maintenance plan to remove sediment and oil or grease should also be implemented. The feasibility of infiltrating post-treatment runoff from the exposed parking levels, utilizing rain gardens or infiltration chambers, should also be explored.

Interior levels of the garage will produce a low volume of runoff with relatively high concentrations of pollutants. In addition, the need for cleaning of the garage must be considered and floor washwater cannot be directed to a stormwater sewer system. Runoff from interior areas should be directed to the sanitary sewer system, again with appropriate treatment. An oil

separator tank with a capacity of at least 1000 gallons is required. A licensed waste oil hauler must clean the tank at least once a year. A list of certified haulers can be obtained from the Bureau of Materials Management & Compliance Assurance at (860) 424-3366. The discharge of floor washwater is covered under a *General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* as building maintenance wastewater. Registration is required for discharges greater than 5000 gallons per day. For further information concerning stormwater management, contact the Permitting & Enforcement Division at (860) 424-3018. A fact sheet describing the permit and the registration form may be downloaded at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324212&depNav_GID=1643#MiscellaneousGP.

In addition to typical mitigation measure to minimize impacts to air quality during construction, the Department also recommends the use of construction equipment with air pollution control devices or the use of "clean" fuels. Equipment, such as diesel oxidation catalysts or particulate filters, or the use of ultra-low sulfur fuel (15 ppm sulfur) can be effective in reducing exhaust emissions. "Clean" fuels, including compressed natural gas or emulsified fuels (e.g., Purinox, approved by the California Air Resources Board) can also be effective in reducing exhaust emissions. It would be appropriate, at this urban location, that contract specifications contain provisions of DOT's diesel vehicle emissions control language requiring certain non-road construction equipment to be retrofitted with emission control devices

The Natural Diversity Data Base, maintained by DEP, contains no records of extant populations of Federally listed endangered or threatened species or species listed by the State, pursuant to section 26-306 of the CGS, as endangered, threatened or special concern in the project area. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Natural Diversity Data Base should not be substituted for on-site surveys required for environmental assessments. The extent of investigation by competent biologist(s) of the flora and fauna found at the site would depend on the nature of the existing habitat(s). If field investigations reveal any Federal or State listed species, please contact the Environmental & Geographic Information Center at (860) 424-3540.

Development plans in urban areas that entail soil excavation should include a protocol for sampling and analysis of potentially contaminated soil. Soil with contaminant levels that exceed the applicable criteria of the Remediation Standard Regulations, that is not hazardous waste, is considered to be special waste. The disposal of special wastes, as defined in section 22a-209-1 of the RCSA, requires written authorization from the Waste Engineering and Enforcement Division prior to delivery to any solid waste disposal facility in Connecticut. If clean fill is to be segregated from waste material, there must be strict adherence to the definition of clean fill, as provided in Section 22a-209-1 of the RCSA. In addition, the regulations prohibit the disposal of more than 10 cubic yards of stumps, brush or woodchips on the site, either buried or on the surface. A fact sheet regarding disposal of special wastes and the authorization application form may be obtained at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324202&depNav_GID=1646.

The Waste Engineering & Enforcement Division has issued a *General Permit for Contaminated Soil and/or Sediment Management (Staging & Transfer).* It establishes a uniform

set of environmentally protective management measures for stockpiling soils when they are generated during construction or utility installation projects where contaminated soils are typically managed (held temporarily during characterization procedures to determine a final disposition). Temporary storage of less than 1000 cubic yards of contaminated soils (which are not hazardous waste) at the excavation site does not require registration, provided that activities are conducted in accordance with the applicable conditions of the general permit. Registration is required for on-site storage of more than 1000 cubic yards for more than 45 days or transfer of more than 10 cubic yards off-site. A fact sheet describing the general permit, a copy of the general permit and registration forms are available on-line at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324210&depNav_GID=1643#ContSoilSedMgmntGP.

Thank you for the opportunity to review this project. If there are any questions regarding these comments, please contact me.

cc: Robert Kaliszewski, DEP/OPPD
Robert Hannon, DEO/OPPD
Kristal Kallenberg, DEP/OLSIP
Nisha Patel, DEP/PED

Connecticut Commission on Culture & Tourism

Historic Preservation & Museum Division

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860.566.3005
(f) 860.566.5078

February 20, 2007

Mr. Scott A. Hill
Bureau of Engineering and Highway Operations
ConnDOT
2800 Berlin Turnpike
Newington, CT

Subject: Transportation Center Parking Garage Improvements
Stamford, CT
ConnDOT #301-0047

Dear Mr. Hill:

The State Historic Preservation Office has reviewed the above-named project. This office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

For further information, please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
Deputy State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

FROM THE DESK OF
CYNTHIA S. HOLDEN

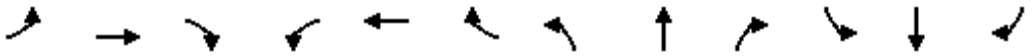
FEB 27 2007

	F.Y.I.	PLS. DO	PLS. SEE ME
KEITH T. HALL			
MARK W. ALEXANDER			
PAUL N. CORRENTE			
STEPHEN V. DELPAPA			

This document has not been thoroughly reviewed. It is being provided for convenience, but is not in any way a substitute for each interested Candidate conducting due diligence.

Appendix B

Traffic Impact Analysis Documentation



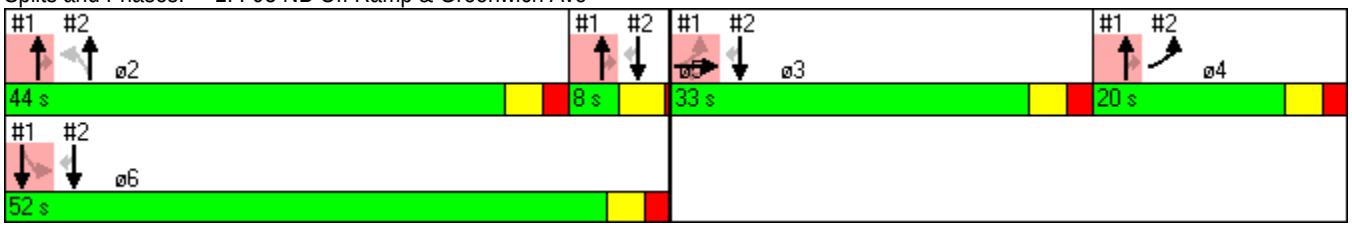
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	560	400	0	0	0	0	280	240	150	570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.085		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	152	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			418						51			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
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
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Adj. Flow (vph)	239	609	435	0	0	0	0	304	261	163	620	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	239	609	435	0	0	0	0	304	261	163	620	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	33.0	33.0	33.0	0.0	0.0	0.0	0.0	72.0	72.0	52.0	52.0	0.0
Total Split (%)	31.4%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%	68.6%	68.6%	49.5%	49.5%	0.0%
Maximum Green (s)	28.0	28.0	28.0							47.0	47.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.52	0.66	0.61					0.24	0.25	2.40	0.41	
Control Delay	37.6	38.5	7.8					0.5	0.3	684.5	20.4	
Queue Delay	0.0	0.0	0.0					1.9	2.0	0.0	0.0	
Total Delay	37.6	38.5	7.8					2.4	2.4	684.5	20.4	
Queue Length 50th (ft)	137	191	9					2	0	~138	144	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	44.0	20.0	8.0
Total Split (%)	42%	19%	8%
Maximum Green (s)	39.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	215	252	93					m2	m0	#273	190	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	470	942	727					1247	1046	68	1528	
Starvation Cap Reductn	0	0	0					772	633	0	0	
Spillback Cap Reductn	0	0	9					0	0	0	15	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.51	0.65	0.61					0.64	0.63	2.40	0.41	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 104.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave

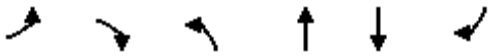


Lane Group	ø2	ø4	ø5
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

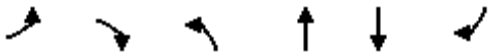
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	560	400	0	0	0	0	280	240	150	570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	152	3388	
Peak-hour factor, PHF	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)	239	609	435	0	0	0	0	304	261	163	620	0
RTOR Reduction (vph)	0	0	309	0	0	0	0	0	18	0	0	0
Lane Group Flow (vph)	239	609	126	0	0	0	0	304	243	163	620	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	27.3	27.3	27.3					68.0	68.0	47.0	47.0	
Effective Green, g (s)	27.3	27.3	27.3					68.0	68.0	47.0	47.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.65	0.65	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	459	917	410					1265	1043	68	1527	
v/s Ratio Prot		c0.17						c0.16			0.18	
v/s Ratio Perm	0.14		0.08						0.15	c1.07		
v/c Ratio	0.52	0.66	0.31					0.24	0.23	2.40	0.41	
Uniform Delay, d1	32.9	34.4	30.9					7.5	7.4	28.6	19.3	
Progression Factor	1.00	1.00	1.00					0.03	0.00	1.00	1.00	
Incremental Delay, d2	1.4	2.0	0.6					0.1	0.1	671.2	0.2	
Delay (s)	34.3	36.4	31.5					0.3	0.1	699.9	19.5	
Level of Service	C	D	C					A	A	F	B	
Approach Delay (s)		34.4			0.0			0.2			161.1	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM Average Control Delay	64.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	104.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



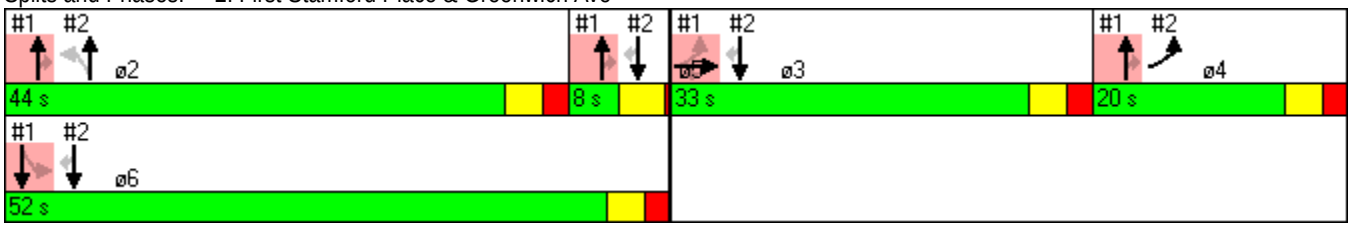
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	200	50	50	320	670	300			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Frt	0.970				0.993	0.850			
Flt Protected	0.962			0.993					
Satd. Flow (prot)	3372	0	0	1850	1757	1504			
Flt Permitted	0.962			0.592					
Satd. Flow (perm)	3372	0	0	1103	1757	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	25				7	293			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	217	54	54	348	728	326			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	271	0	0	402	761	293			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	44.0	44.0	93.0	93.0	33.0	8.0	52.0
Total Split (%)	19.0%	0.0%	41.9%	41.9%	88.6%	88.6%	31%	8%	50%
Maximum Green (s)	15.0		39.0	39.0			28.0	4.0	47.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.54			1.00	0.57	0.24			
Control Delay	42.0			80.7	5.8	0.4			
Queue Delay	0.0			0.0	0.5	0.7			
Total Delay	42.0			80.7	6.2	1.1			
Queue Length 50th (ft)	79			264	349	0			
Queue Length 95th (ft)	122			#465	432	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	506			413	1350	1222			
Starvation Cap Reductn	0			0	223	608			

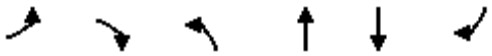


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Spillback Cap Reductn	0			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.54			0.97	0.68	0.48			

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 104.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

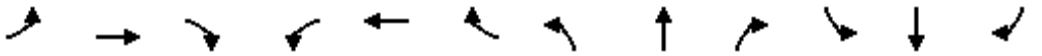
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	50	50	320	670	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.97			1.00	0.99	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	3371			1850	1758	1504
Flt Permitted	0.96			0.59	1.00	1.00
Satd. Flow (perm)	3371			1102	1758	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	54	54	348	728	326
RTOR Reduction (vph)	21	0	0	0	2	81
Lane Group Flow (vph)	250	0	0	402	759	212
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			37.8	79.3	79.3
Effective Green, g (s)	15.0			37.8	75.3	75.3
Actuated g/C Ratio	0.14			0.36	0.72	0.72
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	485			399	1269	1086
v/s Ratio Prot	c0.07				c0.43	
v/s Ratio Perm				c0.36		0.14
v/c Ratio	0.51			1.01	0.60	0.19
Uniform Delay, d1	41.3			33.2	7.1	4.7
Progression Factor	1.00			1.00	0.77	0.00
Incremental Delay, d2	1.2			46.9	0.8	0.1
Delay (s)	42.5			80.2	6.3	0.1
Level of Service	D			F	A	A
Approach Delay (s)	42.5			80.2	4.6	
Approach LOS	D			F	A	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	104.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

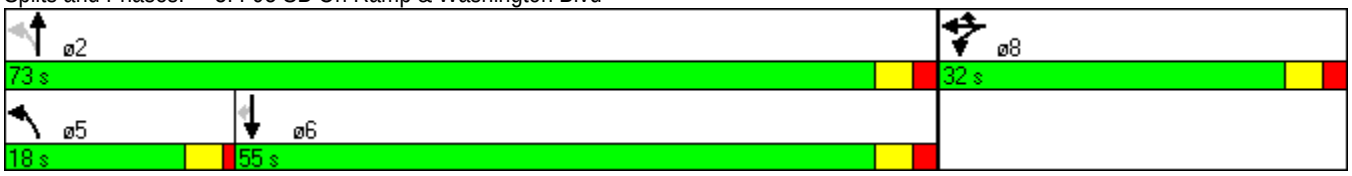


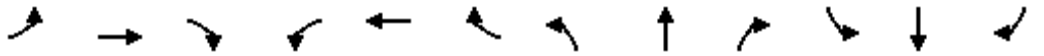
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	300	100	710	200	620	0	0	710	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.293					
Satd. Flow (perm)	0	0	0	1438	1513	1458	453	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						307						585
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Adj. Flow (vph)	0	0	0	306	102	724	204	633	0	0	724	622
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	306	102	724	204	633	0	0	724	622
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	32.0	32.0	32.0	18.0	73.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	30.5%	30.5%	30.5%	17.1%	69.5%	0.0%	0.0%	52.4%	52.4%
Maximum Green (s)				27.0	27.0	27.0	14.0	68.0			50.0	50.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.83	0.26	1.20	0.51	0.33			0.45	0.62
Control Delay				48.7	41.4	119.8	6.2	4.6			17.9	5.1
Queue Delay				24.3	0.0	0.0	0.7	1.3			8.9	0.0
Total Delay				73.0	41.4	119.8	6.9	5.9			26.9	5.1
Queue Length 50th (ft)				178	56	~391	37	90			155	12
Queue Length 95th (ft)				m173	m58	m#314	m50	m107			221	92
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)				370	389	603	433	1901			1595	1000
Starvation Cap Reductn				0	0	0	66	1001			0	0
Spillback Cap Reductn				67	0	0	0	0			831	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				1.01	0.26	1.20	0.56	0.70			0.95	0.62

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 19 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
~ 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.	

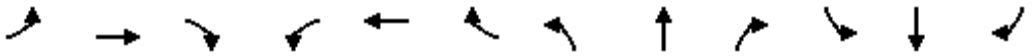
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	300	100	710	200	620	0	0	710	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.29	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	452	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	306	102	724	204	633	0	0	724	622
RTOR Reduction (vph)	0	0	0	0	0	228	0	0	0	0	0	286
Lane Group Flow (vph)	0	0	0	306	102	496	204	633	0	0	724	336
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				27.0	27.0	27.0	68.0	68.0			53.6	53.6
Effective Green, g (s)				27.0	27.0	27.0	68.0	68.0			53.6	53.6
Actuated g/C Ratio				0.26	0.26	0.26	0.65	0.65			0.51	0.51
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				370	389	375	393	1901			1595	714
v/s Ratio Prot				0.21	0.07	c0.34	c0.05	0.22			0.23	
v/s Ratio Perm							c0.28					0.24
v/c Ratio				0.83	0.26	1.32	0.52	0.33			0.45	0.47
Uniform Delay, d1				36.8	31.1	39.0	8.8	8.3			16.4	16.6
Progression Factor				1.24	1.30	1.49	0.46	0.52			1.00	1.00
Incremental Delay, d2				1.6	0.1	146.9	0.3	0.3			0.9	2.2
Delay (s)				47.4	40.5	204.9	4.3	4.6			17.3	18.8
Level of Service				D	D	F	A	A			B	B
Approach Delay (s)		0.0			147.5			4.5			18.0	
Approach LOS		A			F			A			B	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	137.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



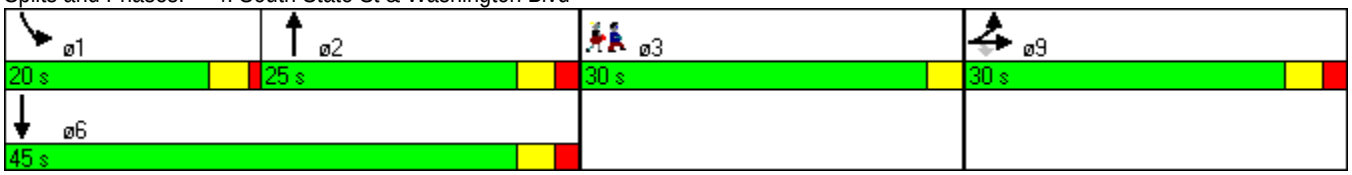
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	250	300	0	0	0	0	420	200	350	660	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		0.99		
Frt			0.850					0.952				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3871	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1453	1545	1221	0	0	0	0	3871	0	2717	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			366					101				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Adj. Flow (vph)	488	305	366	0	0	0	0	512	244	427	805	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	488	305	366	0	0	0	0	756	0	427	805	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	25.0	0.0	20.0	45.0	0.0
Total Split (%)	28.6%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%	23.8%	0.0%	19.0%	42.9%	0.0%
Maximum Green (s)	25.0	25.0	25.0					20.0		16.0	40.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
v/c Ratio	0.63	0.38	0.45					0.92		1.02	0.75	
Control Delay	22.5	16.6	3.3					64.5		92.1	34.2	
Queue Delay	0.0	0.0	0.0					0.0		4.5	122.0	
Total Delay	22.5	16.6	3.3					64.5		96.6	156.3	
Queue Length 50th (ft)	223	116	0					174		~151	247	
Queue Length 95th (ft)	289	158	28					#204		#219	277	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	769	809	814					819		419	1080	
Starvation Cap Reductn	0	0	0					0		6	444	
Spillback Cap Reductn	0	0	7					0		0	58	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.63	0.38	0.45					0.92		1.03	1.27	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 59 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4: South State St & Washington Blvd



Lane Group	ø3
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	250	300	0	0	0	0	420	200	350	660	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.95		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1263					3869		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1263					3869		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	488	305	366	0	0	0	0	512	244	427	805	0
RTOR Reduction (vph)	0	0	174	0	0	0	0	82	0	0	0	0
Lane Group Flow (vph)	488	305	192	0	0	0	0	674	0	427	805	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Effective Green, g (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Actuated g/C Ratio	0.52	0.52	0.52					0.19		0.15	0.38	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	769	809	662					737		419	1080	
v/s Ratio Prot	c0.33	0.20						c0.17		c0.16	0.28	
v/s Ratio Perm			0.15									
v/c Ratio	0.63	0.38	0.29					0.91		1.02	0.75	
Uniform Delay, d1	17.8	14.8	14.0					41.7		44.5	28.1	
Progression Factor	1.00	1.00	1.00					1.32		1.02	1.05	
Incremental Delay, d2	4.0	1.3	1.1					17.2		46.5	4.2	
Delay (s)	21.8	16.2	15.1					72.2		91.8	33.7	
Level of Service	C	B	B					E		F	C	
Approach Delay (s)		18.2			0.0			72.2			53.9	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	137.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	70	200	420	50	560	400	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Frt		0.850	0.984				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3018	0	1561	3123	
Flt Permitted	0.950				0.323		
Satd. Flow (perm)	1578	2361	3018	0	531	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		230	13				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Parking (#/hr)		0					
Adj. Flow (vph)	80	230	483	57	644	460	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	80	230	540	0	644	460	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	30.0	39.0	0.0	30.0	69.0	20.0
Total Split (%)	15.2%	28.6%	37.1%	0.0%	28.6%	65.7%	19%
Maximum Green (s)	11.0	26.0	34.0		26.0	64.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	None
v/c Ratio	0.53	0.16	0.49		0.72	0.17	
Control Delay	58.0	1.6	27.7		8.7	0.8	
Queue Delay	0.0	0.0	0.0		0.8	0.3	
Total Delay	58.0	1.6	27.7		9.5	1.1	
Queue Length 50th (ft)	52	0	143		376	7	
Queue Length 95th (ft)	97	14	198		461	10	
Internal Link Dist (ft)	363		832			211	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	165	1402	1107		895	2637	
Starvation Cap Reductn	0	0	0		73	1550	
Spillback Cap Reductn	0	141	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.48	0.18	0.49		0.78	0.42	

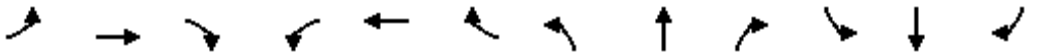
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 7 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	70	200	420	50	560	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3018		1561	3123
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1578	2361	3018		530	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	80	230	483	57	644	460
RTOR Reduction (vph)	0	112	8	0	0	0
Lane Group Flow (vph)	80	118	532	0	644	460
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	8.3	53.8	37.2		86.7	86.7
Effective Green, g (s)	8.3	53.8	37.2		86.7	86.7
Actuated g/C Ratio	0.08	0.51	0.35		0.83	0.83
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	125	1210	1069		884	2579
v/s Ratio Prot	c0.05	0.04	0.18		c0.32	0.15
v/s Ratio Perm		0.01			c0.29	
v/c Ratio	0.64	0.10	0.50		0.73	0.18
Uniform Delay, d1	46.9	13.1	26.6		8.4	1.9
Progression Factor	1.00	1.00	1.00		0.63	0.33
Incremental Delay, d2	10.7	0.0	1.7		2.3	0.1
Delay (s)	57.6	13.2	28.2		7.5	0.7
Level of Service	E	B	C		A	A
Approach Delay (s)	24.6		28.2			4.7
Approach LOS	C		C			A

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	200	1770	200	300	700	0	0	280	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Frt					0.986							0.850
Flt Protected					0.995			0.985				
Satd. Flow (prot)	0	0	0	0	5658	0	0	3033	0	0	3504	1425
Flt Permitted					0.995			0.723				
Satd. Flow (perm)	0	0	0	0	5658	0	0	2226	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					26							58
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	241	2133	241	361	843	0	0	337	422
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2615	0	0	1204	0	0	337	422
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	12.0	60.0	0.0	0.0	48.0	48.0
Total Split (%)	0.0%	0.0%	0.0%	42.9%	42.9%	0.0%	11.4%	57.1%	0.0%	0.0%	45.7%	45.7%
Maximum Green (s)				41.0	41.0		8.0	56.0			44.0	44.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.18			1.01			0.18	0.54
Control Delay					109.2			54.9			13.0	16.6
Queue Delay					44.2			240.3			0.0	0.0
Total Delay					153.4			295.2			13.0	16.6
Queue Length 50th (ft)					~597			~442			58	151
Queue Length 95th (ft)					m#550			m390			76	210
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2225			1187			1869	787

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0			420			0	0
Spillback Cap Reductn					173			0			0	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.27			1.57			0.18	0.54

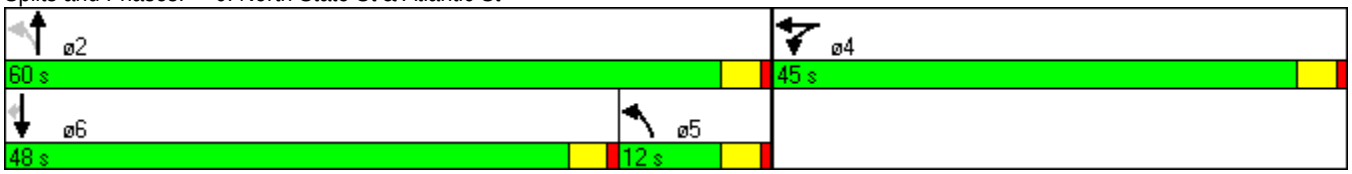
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

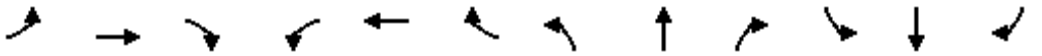
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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: 6: North State St & Atlantic St

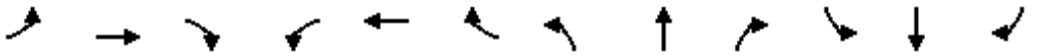




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	200	1770	200	300	700	0	0	280	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5661			3034			3504	1425
Flt Permitted					1.00			0.72			1.00	1.00
Satd. Flow (perm)					5661			2226			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	241	2133	241	361	843	0	0	337	422
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	2599	0	0	1204	0	0	337	395
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					41.0			56.0			56.0	56.0
Effective Green, g (s)					41.0			56.0			56.0	56.0
Actuated g/C Ratio					0.39			0.53			0.53	0.53
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2210			1187			1869	760
v/s Ratio Prot					c0.46						0.10	
v/s Ratio Perm								c0.54				0.28
v/c Ratio					1.18			1.01			0.18	0.52
Uniform Delay, d1					32.0			24.5			12.6	15.8
Progression Factor					0.92			1.82			1.00	1.00
Incremental Delay, d2					80.8			11.7			0.2	2.5
Delay (s)					110.3			56.5			12.9	18.3
Level of Service					F			E			B	B
Approach Delay (s)		0.0			110.3			56.5			15.9	
Approach LOS		A			F			E			B	

Intersection Summary			
HCM Average Control Delay	80.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	800	1300	250	0	0	0	0	200	100	100	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.980						0.955				
Flt Protected	0.950	0.991								0.950		
Satd. Flow (prot)	1247	5099	0	0	0	0	0	1761	0	2987	1621	0
Flt Permitted	0.950	0.991								0.950		
Satd. Flow (perm)	1247	5099	0	0	0	0	0	1761	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		44										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1026	1667	321	0	0	0	0	256	128	128	487	0
Shared Lane Traffic (%)	42%											
Lane Group Flow (vph)	595	2419	0	0	0	0	0	384	0	128	487	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	10.0	58.0	0.0
Total Split (%)	44.8%	44.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45.7%	0.0%	9.5%	55.2%	0.0%
Maximum Green (s)	43.0	43.0						44.0		6.0	54.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	None	None						C-Max		None	C-Max	
v/c Ratio	1.16	1.14						0.52		0.75	0.58	
Control Delay	124.2	98.8						25.8		76.7	16.7	
Queue Delay	594.2	83.1						11.1		0.0	3.5	
Total Delay	718.4	181.9						36.9		76.7	20.2	
Queue Length 50th (ft)	~588	338						188		44	178	
Queue Length 95th (ft)	#679	207						229		m54	m182	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	511	2114						738		171	834	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0						323		0	251	
Spillback Cap Reductn	287	296						236		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	2.66	1.33						0.93		0.75	0.84	

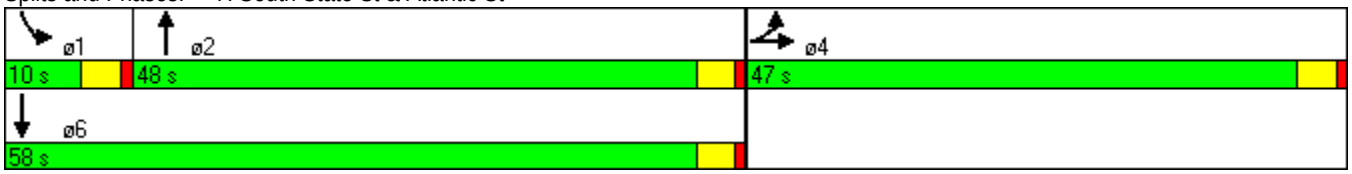
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

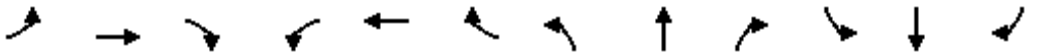
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 7: South State St & Atlantic St

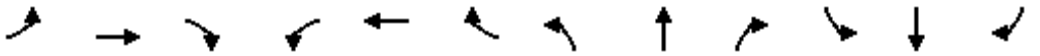




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	800	1300	250	0	0	0	0	200	100	100	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.98						0.96		1.00	1.00	
Flt Protected	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5101						1761		2987	1621	
Flt Permitted	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5101						1761		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1026	1667	321	0	0	0	0	256	128	128	487	0
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	595	2393	0	0	0	0	0	384	0	128	487	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	43.0	43.0						44.0		6.0	54.0	
Effective Green, g (s)	43.0	43.0						44.0		6.0	54.0	
Actuated g/C Ratio	0.41	0.41						0.42		0.06	0.51	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	511	2089						738		171	834	
v/s Ratio Prot	c0.48	0.47						0.22		c0.04	c0.30	
v/s Ratio Perm												
v/c Ratio	1.16	1.15						0.52		0.75	0.58	
Uniform Delay, d1	31.0	31.0						22.7		48.8	17.7	
Progression Factor	1.00	1.05						1.00		1.11	0.78	
Incremental Delay, d2	93.7	71.7						2.6		13.9	2.5	
Delay (s)	124.7	104.2						25.3		68.1	16.3	
Level of Service	F	F						C		E	B	
Approach Delay (s)		108.3			0.0			25.3			27.0	
Approach LOS		F			A			C			C	

Intersection Summary			
HCM Average Control Delay	87.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



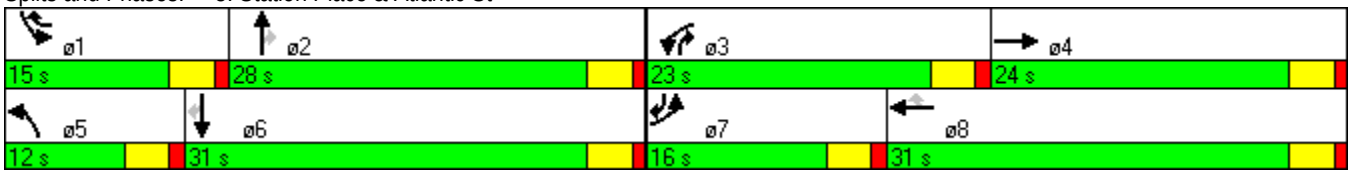
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	30	90	170	80	50	160	20	40	310	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1582	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1582	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33				87			22			272
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	33	98	185	87	54	174	22	43	337	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	66	0	98	185	87	54	174	22	43	337	272
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	16.0	24.0	0.0	23.0	31.0	15.0	12.0	28.0	23.0	15.0	31.0	16.0
Total Split (%)	17.8%	26.7%	0.0%	25.6%	34.4%	16.7%	13.3%	31.1%	25.6%	16.7%	34.4%	17.8%
Maximum Green (s)	12.0	20.0		19.0	27.0	11.0	8.0	24.0	19.0	11.0	27.0	12.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.43	0.16		0.52	0.47	0.15	0.36	0.13	0.03	0.31	0.27	0.31
Control Delay	46.0	18.0		46.0	33.4	4.5	44.3	19.4	4.4	43.7	20.7	2.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	46.0	18.0		46.0	33.4	4.5	44.3	19.4	4.4	43.7	20.7	3.1
Queue Length 50th (ft)	35	15		53	90	0	29	33	0	23	68	0

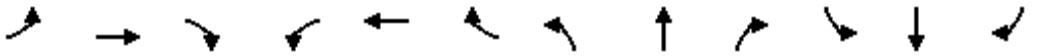
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	74	49		97	151	26	64	63	11	54	116	40
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	202	410		325	486	615	161	1312	959	188	1254	919
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	269
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.16		0.30	0.38	0.14	0.34	0.13	0.02	0.23	0.27	0.42

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

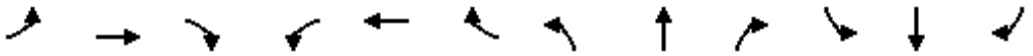
Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	30	90	170	80	50	160	20	40	310	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1582		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1582		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	65	33	33	98	185	87	54	174	22	43	337	272
RTOR Reduction (vph)	0	25	0	0	0	58	0	0	11	0	0	139
Lane Group Flow (vph)	65	41	0	98	185	29	54	174	11	43	337	133
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	21.9		9.7	22.6	29.5	7.3	35.5	45.2	6.9	35.1	44.1
Effective Green, g (s)	9.0	21.9		9.7	22.6	29.5	7.3	35.5	45.2	6.9	35.1	44.1
Actuated g/C Ratio	0.10	0.24		0.11	0.25	0.33	0.08	0.39	0.50	0.08	0.39	0.49
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	152	385		166	407	513	129	1256	779	118	1201	736
v/s Ratio Prot	0.04	0.03		c0.06	c0.11	0.00	c0.03	0.05	0.00	0.03	c0.11	0.02
v/s Ratio Perm						0.02			0.01			0.08
v/c Ratio	0.43	0.11		0.59	0.45	0.06	0.42	0.14	0.01	0.36	0.28	0.18
Uniform Delay, d1	38.1	26.5		38.3	28.5	20.7	39.3	17.5	11.2	39.5	18.8	12.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1		5.5	0.8	0.0	2.2	0.2	0.0	1.9	0.6	0.1
Delay (s)	40.0	26.6		43.8	29.3	20.8	41.5	17.7	11.2	41.4	19.4	13.0
Level of Service	D	C		D	C	C	D	B	B	D	B	B
Approach Delay (s)		33.2			31.1			22.3			18.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

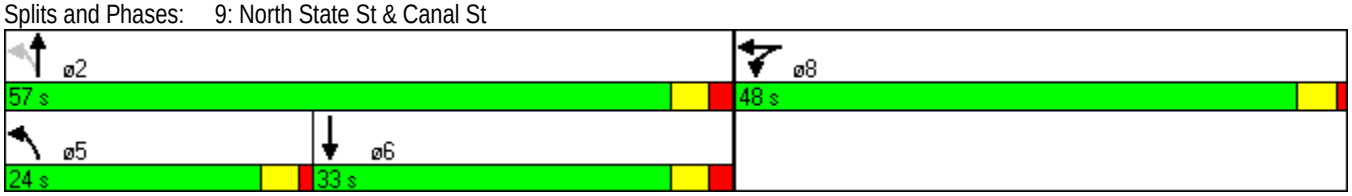


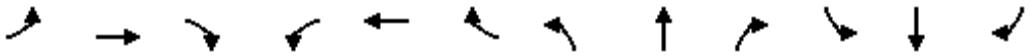
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	250	1720	250	400	420	0	0	750	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Frt					0.983						0.975	
Flt Protected					0.994		0.950					
Satd. Flow (prot)	0	0	0	0	5447	0	1540	3079	0	0	3002	0
Flt Permitted					0.994		0.125					
Satd. Flow (perm)	0	0	0	0	5447	0	203	3079	0	0	3002	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					37						22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	263	1811	263	421	442	0	0	789	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2337	0	421	442	0	0	947	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	24.0	57.0	0.0	0.0	33.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	22.9%	54.3%	0.0%	0.0%	31.4%	0.0%
Maximum Green (s)				44.0	44.0		20.0	52.0			28.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Recall Mode				None	None		None	C-Max			C-Max	
v/c Ratio					1.01		1.18	0.29			1.16	
Control Delay					52.8		125.6	16.8			120.3	
Queue Delay					33.9		104.2	1.5			2.5	
Total Delay					86.7		229.8	18.3			122.7	
Queue Length 50th (ft)					~459		~300	100			~393	
Queue Length 95th (ft)					#556		m#496	143			#523	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					2304		357	1525			817	
Starvation Cap Reductn					0		60	866			0	
Spillback Cap Reductn					181		0	0			4	
Storage Cap Reductn					0		0	0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio					1.10		1.42	0.67			1.16	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St

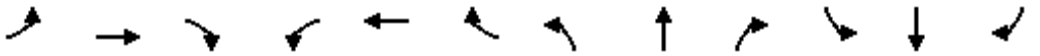




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	250	1720	250	400	420	0	0	750	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5450		1540	3079			3002	
Flt Permitted					0.99		0.12	1.00			1.00	
Satd. Flow (perm)					5450		203	3079			3002	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	263	1811	263	421	442	0	0	789	158
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	0	2316	0	421	442	0	0	931	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					44.0		52.0	52.0			28.0	
Effective Green, g (s)					44.0		52.0	52.0			28.0	
Actuated g/C Ratio					0.42		0.50	0.50			0.27	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2284		355	1525			801	
v/s Ratio Prot					c0.42		c0.23	0.14			0.31	
v/s Ratio Perm							c0.36					
v/c Ratio					1.01		1.19	0.29			1.16	
Uniform Delay, d1					30.5		31.2	15.6			38.5	
Progression Factor					1.00		0.68	1.04			1.00	
Incremental Delay, d2					22.3		105.6	0.4			86.5	
Delay (s)					52.8		126.9	16.7			125.0	
Level of Service					D		F	B			F	
Approach Delay (s)		0.0			52.8			70.4			125.0	
Approach LOS		A			D			E			F	

Intersection Summary			
HCM Average Control Delay	73.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

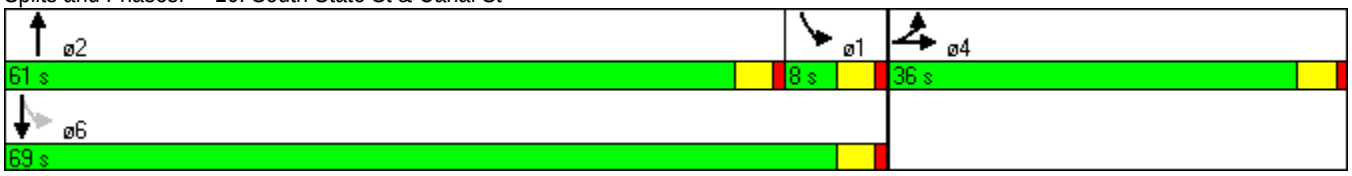


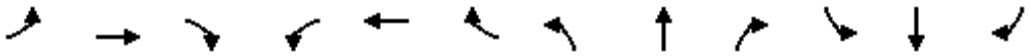
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	890	460	0	0	0	0	470	150	280	570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.949						0.964				
Flt Protected	0.950										0.984	
Satd. Flow (prot)	1593	4343	0	0	0	0	0	2866	0	0	3030	0
Flt Permitted	0.950										0.605	
Satd. Flow (perm)	1593	4343	0	0	0	0	0	2866	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128						61				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	937	484	0	0	0	0	495	158	295	600	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	368	1421	0	0	0	0	0	653	0	0	895	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	36.0	36.0	0.0	0.0	0.0	0.0	0.0	61.0	0.0	8.0	69.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	0.0%	7.6%	65.7%	0.0%
Maximum Green (s)	32.0	32.0						57.0		4.0	65.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	None	None						C-Max		None	C-Max	
v/c Ratio	0.76	1.01						0.36			0.78	
Control Delay	42.5	48.3						9.5			17.7	
Queue Delay	3.7	0.0						0.5			35.1	
Total Delay	46.2	48.3						9.9			52.8	
Queue Length 50th (ft)	176	~228						93			129	
Queue Length 95th (ft)	m176	m218						127			m92	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1413						1797			1153	
Starvation Cap Reductn	0	0						661			311	
Spillback Cap Reductn	58	0						122			0	
Storage Cap Reductn	0	0						0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.86	1.01						0.57			1.06	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: South State St & Canal St

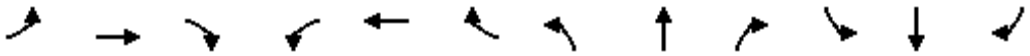




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	890	460	0	0	0	0	470	150	280	570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.95						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.98	
Satd. Flow (prot)	1593	4343						2865			3029	
Flt Permitted	0.95	1.00						1.00			0.61	
Satd. Flow (perm)	1593	4343						2865			1864	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	937	484	0	0	0	0	495	158	295	600	0
RTOR Reduction (vph)	0	89	0	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	368	1332	0	0	0	0	0	630	0	0	895	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	32.0	32.0						65.0			65.0	
Effective Green, g (s)	32.0	32.0						65.0			65.0	
Actuated g/C Ratio	0.30	0.30						0.62			0.62	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	485	1324						1774			1154	
v/s Ratio Prot	0.23	c0.31						0.22				
v/s Ratio Perm											c0.48	
v/c Ratio	0.76	1.01						0.35			0.78	
Uniform Delay, d1	33.0	36.5						9.8			14.7	
Progression Factor	1.23	1.20						1.00			1.11	
Incremental Delay, d2	0.6	8.9						0.6			0.3	
Delay (s)	41.1	52.7						10.3			16.6	
Level of Service	D	D						B			B	
Approach Delay (s)		50.3			0.0			10.3			16.6	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

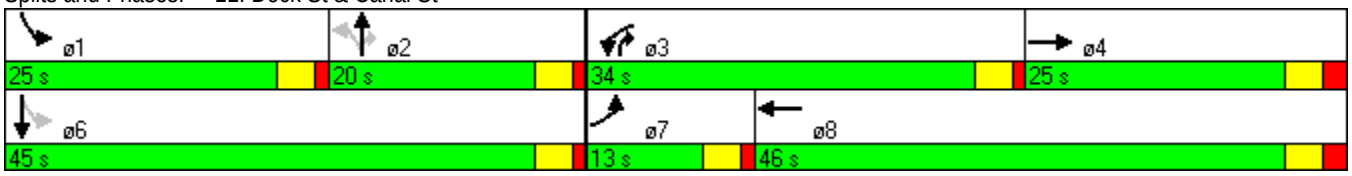


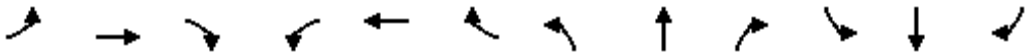
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Frt												
Flt Protected												
Satd. Flow (prot)	1621	3079	0	1565	3079	0	0	3079	1621	1621	3079	0
Flt Permitted												
Satd. Flow (perm)	1621	3079	0	1565	3079	0	0	3079	1621	1621	3079	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	13.0	25.0	0.0	34.0	46.0	0.0	20.0	20.0	34.0	25.0	45.0	0.0
Total Split (%)	12.5%	24.0%	0.0%	32.7%	44.2%	0.0%	19.2%	19.2%	32.7%	24.0%	43.3%	0.0%
Maximum Green (s)	9.0	20.0		30.0	41.0		16.0	16.0	30.0	21.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)												
Base Capacity (vph)												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary	
Area Type:	CBD
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 12 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD
Control Type: Unsignalized	

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	290	220	20	350	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-4%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected				0.997		
Satd. Flow (prot)	1863	1583	0	1894	1863	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	1583	0	1894	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	239	22	380	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	239	0	402	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	290	220	20	350	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	239	22	380	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked						
vC, conflicting volume			554		739	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			554		739	315
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1016		376	725

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	315	239	402	0
Volume Left	0	0	22	0
Volume Right	0	239	0	0
cSH	1700	1700	1016	1700
Volume to Capacity	0.19	0.14	0.02	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.0	0.0	0.7	0.0
Lane LOS			A	A
Approach Delay (s)	0.0		0.7	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	120	170	100	370	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-4%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921					
Flt Protected				0.989		
Satd. Flow (prot)	1716	0	0	1879	0	0
Flt Permitted				0.989		
Satd. Flow (perm)	1716	0	0	1879	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	185	109	402	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	0	0	511	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	120	170	100	370	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	185	109	402	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.94	
vC, conflicting volume			315		842	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			315		797	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		100	100
cM capacity (veh/h)			1245		304	817

Direction, Lane #	EB 1	WB 1
Volume Total	315	511
Volume Left	0	109
Volume Right	185	0
cSH	1700	1245
Volume to Capacity	0.19	0.09
Queue Length 95th (ft)	0	7
Control Delay (s)	0.0	2.5
Lane LOS		A
Approach Delay (s)	0.0	2.5
Approach LOS		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

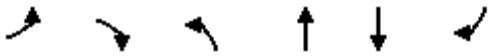
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	120	0	0	470	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	0	0	495	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	0	0	495	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

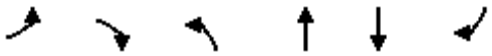
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	120	0	0	470	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	126	0	0	495	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.92	
vC, conflicting volume			126		621	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			126		545	126
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1460		460	924

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	126	495	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.07	0.29	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		



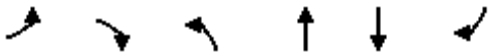
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	10	30	180	290	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977					0.850
Flt Protected	0.960			0.993		
Satd. Flow (prot)	1747	0	0	1850	1863	1583
Flt Permitted	0.960			0.928		
Satd. Flow (perm)	1747	0	0	1729	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8					152
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	11	33	196	315	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	0	229	315	152
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	15.0	0.0	90.0	90.0	90.0	90.0
Total Split (%)	14.3%	0.0%	85.7%	85.7%	85.7%	85.7%
Maximum Green (s)	10.0		85.0	85.0	85.0	85.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.39			0.15	0.20	0.11
Control Delay	46.5			1.9	2.0	0.5
Queue Delay	0.0			0.0	1.0	0.5
Total Delay	46.5			1.9	3.0	1.0
Queue Length 50th (ft)	37			22	31	0
Queue Length 95th (ft)	79			38	52	9
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	190			1492	1607	1375
Starvation Cap Reductn	0			0	1021	901



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.34			0.15	0.54	0.32

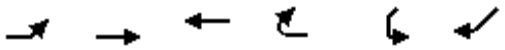
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 85 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	10	30	180	290	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	1748			1849	1863	1583
Flt Permitted	0.96			0.93	1.00	1.00
Satd. Flow (perm)	1748			1729	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	11	33	196	315	152
RTOR Reduction (vph)	7	0	0	0	0	25
Lane Group Flow (vph)	58	0	0	229	315	127
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	7.2			87.8	87.8	87.8
Effective Green, g (s)	8.2			88.8	88.8	87.8
Actuated g/C Ratio	0.08			0.85	0.85	0.84
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	137			1462	1576	1324
v/s Ratio Prot	c0.03				c0.17	
v/s Ratio Perm				0.13		0.08
v/c Ratio	0.42			0.16	0.20	0.10
Uniform Delay, d1	46.1			1.4	1.5	1.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	2.1			0.2	0.3	0.1
Delay (s)	48.2			1.7	1.8	1.7
Level of Service	D			A	A	A
Approach Delay (s)	48.2			1.7	1.8	
Approach LOS	D			A	A	

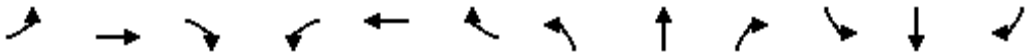
Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD
Control Type: Unsignalized	

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	380	100	0	0	0	0	350	490	50	250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.070		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	125	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109						45			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	163	413	109	0	0	0	0	380	533	54	272	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	413	109	0	0	0	0	380	533	54	272	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	25.0	25.0	25.0	0.0	0.0	0.0	0.0	90.0	90.0	70.0	70.0	0.0
Total Split (%)	21.7%	21.7%	21.7%	0.0%	0.0%	0.0%	0.0%	78.3%	78.3%	60.9%	60.9%	0.0%
Maximum Green (s)	20.0	20.0	20.0							65.0	65.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	62.0	20.0	8.0
Total Split (%)	54%	17%	7%
Maximum Green (s)	57.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

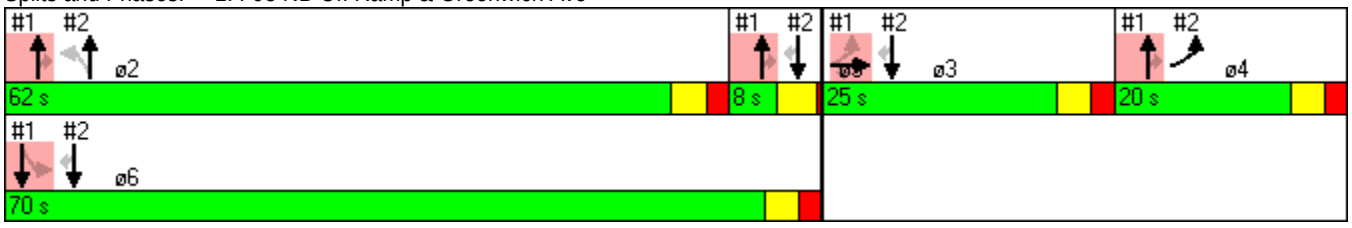
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.49	0.62	0.28					0.27	0.46	0.82	0.15	
Control Delay	47.8	46.9	10.0					0.4	1.5	95.4	12.6	
Queue Delay	0.0	0.0	0.0					1.5	1.7	0.0	0.0	
Total Delay	47.8	46.9	10.0					1.9	3.2	95.4	12.6	
Queue Length 50th (ft)	111	152	0					1	10	29	47	
Queue Length 95th (ft)	183	207	49					m1	m38	#115	69	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	331	663	385					1503	1250	77	2082	
Starvation Cap Reductn	0	0	0					910	521	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	19	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.49	0.62	0.28					0.64	0.73	0.70	0.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 107.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

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: 1: I-95 NB Off Ramp & Greenwich Ave

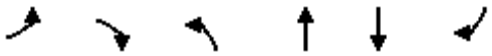


Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

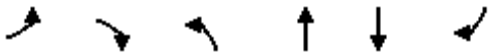
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	380	100	0	0	0	0	350	490	50	250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.07	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	126	3388	
Peak-hour factor, PHF	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)	163	413	109	0	0	0	0	380	533	54	272	0
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	163	413	21	0	0	0	0	380	521	54	272	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	20.4	20.4	20.4					78.1	78.1	56.8	56.8	
Effective Green, g (s)	20.4	20.4	20.4					78.1	78.1	56.8	56.8	
Actuated g/C Ratio	0.19	0.19	0.19					0.73	0.73	0.53	0.53	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	332	665	298					1409	1162	67	1790	
v/s Ratio Prot		c0.12						0.20			0.08	
v/s Ratio Perm	0.09		0.01						c0.33	c0.43		
v/c Ratio	0.49	0.62	0.07					0.27	0.45	0.81	0.15	
Uniform Delay, d1	38.9	40.0	35.8					5.0	6.0	20.8	13.0	
Progression Factor	1.00	1.00	1.00					0.01	0.11	1.00	1.00	
Incremental Delay, d2	1.6	2.1	0.1					0.1	0.2	49.8	0.0	
Delay (s)	40.5	42.1	35.9					0.1	0.9	70.6	13.0	
Level of Service	D	D	D					A	A	E	B	
Approach Delay (s)		40.7			0.0			0.6			22.6	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



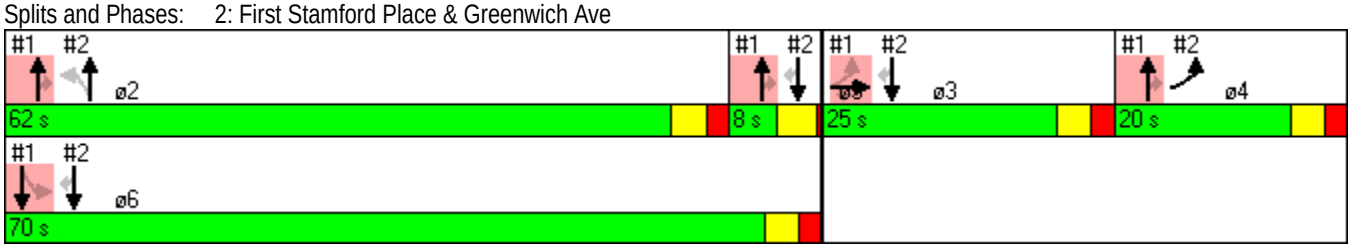
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	360	50	20	480	290	60			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.982				0.997	0.850			
Flt Protected	0.958			0.998					
Satd. Flow (prot)	3400	0	0	1859	1764	1504			
Flt Permitted	0.958			0.977					
Satd. Flow (perm)	3400	0	0	1820	1764	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	11				3	58			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	391	54	22	522	315	65			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	445	0	0	544	322	58			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	62.0	62.0	103.0	103.0	25.0	8.0	70.0
Total Split (%)	17.4%	0.0%	53.9%	53.9%	89.6%	89.6%	22%	7%	61%
Maximum Green (s)	15.0		57.0	57.0			20.0	4.0	65.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0

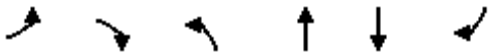


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.90			0.81	0.24	0.05			
Control Delay	69.5			39.9	1.8	0.1			
Queue Delay	1.0			0.0	0.7	1.4			
Total Delay	70.5			39.9	2.4	1.4			
Queue Length 50th (ft)	167			356	12	0			
Queue Length 95th (ft)	#274			415	11	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	492			981	1377	1187			
Starvation Cap Reductn	0			0	727	1005			
Spillback Cap Reductn	6			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.92			0.55	0.50	0.32			

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 107.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

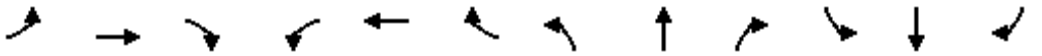
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	360	50	20	480	290	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3399			1859	1764	1504
Flt Permitted	0.96			0.98	1.00	1.00
Satd. Flow (perm)	3399			1820	1764	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	54	22	522	315	65
RTOR Reduction (vph)	9	0	0	0	1	16
Lane Group Flow (vph)	436	0	0	544	321	42
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.3			39.8	82.2	82.2
Effective Green, g (s)	15.3			39.8	78.2	78.2
Actuated g/C Ratio	0.14			0.37	0.73	0.73
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	484			674	1283	1094
v/s Ratio Prot	c0.13				c0.18	
v/s Ratio Perm				c0.30		0.03
v/c Ratio	0.90			0.81	0.25	0.04
Uniform Delay, d1	45.3			30.4	4.9	4.1
Progression Factor	1.00			1.00	0.38	0.00
Incremental Delay, d2	19.7			7.2	0.1	0.0
Delay (s)	65.0			37.6	2.0	0.0
Level of Service	E			D	A	A
Approach Delay (s)	65.0			37.6	1.7	
Approach LOS	E			D	A	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

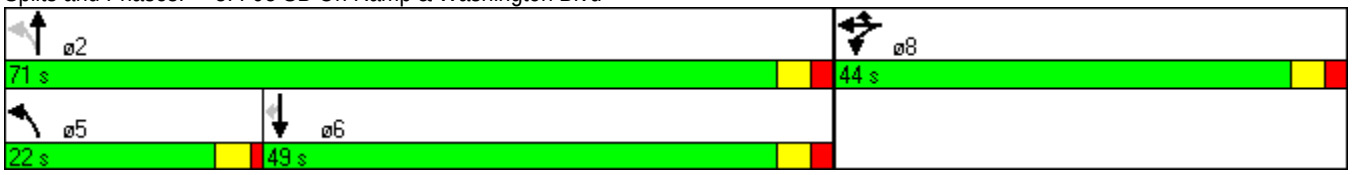


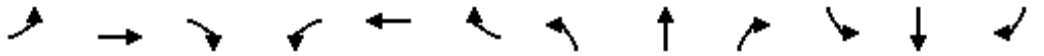
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	250	550	300	870	0	0	820	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.190					
Satd. Flow (perm)	0	0	0	1438	1513	1458	294	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						142						349
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	153	255	561	306	888	0	0	837	643
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	153	255	561	306	888	0	0	837	643
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	44.0	44.0	44.0	22.0	71.0	0.0	0.0	49.0	49.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	38.3%	19.1%	61.7%	0.0%	0.0%	42.6%	42.6%
Maximum Green (s)				39.0	39.0	39.0	18.0	66.0			44.0	44.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.32	0.50	0.96	0.88	0.52			0.68	0.84
Control Delay				43.1	47.2	65.9	45.5	17.4			32.5	25.9
Queue Delay				674.5	0.0	0.0	83.4	78.1			5.1	0.0
Total Delay				717.6	47.2	65.9	128.9	95.5			37.7	25.9
Queue Length 50th (ft)				99	170	325	195	160			271	219
Queue Length 95th (ft)				m130	m215	m#464	m168	m132			346	#466
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				488	513	588	356	1695			1235	764
Starvation Cap Reductn				0	0	0	96	932			0	0
Spillback Cap Reductn				451	0	0	0	0			328	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				4.14	0.50	0.95	1.18	1.16			0.92	0.84

Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

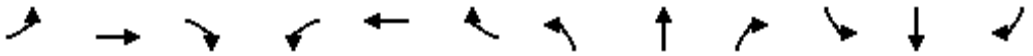
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	250	550	300	870	0	0	820	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.19	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	293	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	153	255	561	306	888	0	0	837	643
RTOR Reduction (vph)	0	0	0	0	0	94	0	0	0	0	0	211
Lane Group Flow (vph)	0	0	0	153	255	467	306	888	0	0	837	432
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				38.6	38.6	38.6	66.4	66.4			45.4	45.4
Effective Green, g (s)				38.6	38.6	38.6	66.4	66.4			45.4	45.4
Actuated g/C Ratio				0.34	0.34	0.34	0.58	0.58			0.39	0.39
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				483	508	489	343	1695			1233	552
v/s Ratio Prot				0.11	0.17	c0.32	c0.13	0.30			0.27	
v/s Ratio Perm							c0.38					0.31
v/c Ratio				0.32	0.50	0.95	0.89	0.52			0.68	0.78
Uniform Delay, d1				28.4	30.5	37.3	18.9	14.7			28.8	30.5
Progression Factor				1.45	1.43	1.52	2.56	1.15			1.00	1.00
Incremental Delay, d2				0.6	1.2	24.8	3.0	0.1			3.0	10.6
Delay (s)				41.8	45.0	81.7	51.5	17.0			31.8	41.0
Level of Service				D	D	F	D	B			C	D
Approach Delay (s)		0.0			65.7			25.9			35.8	
Approach LOS		A			E			C			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	145.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



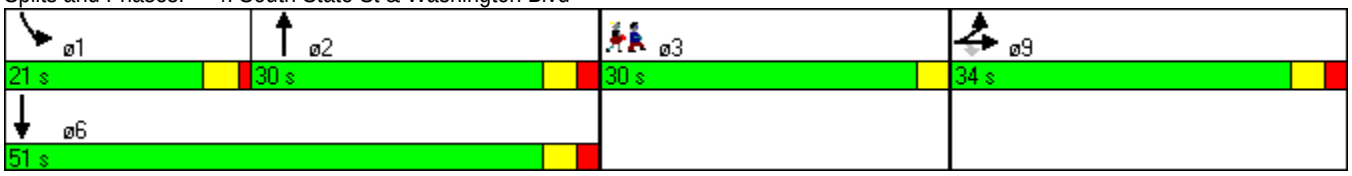
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	550	120	0	0	0	0	820	250	520	450	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		0.99		
Frt			0.850					0.965				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3935	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1454	1545	1225	0	0	0	0	3935	0	2734	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100					61				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	427	671	146	0	0	0	0	1000	305	634	549	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	427	671	146	0	0	0	0	1305	0	634	549	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	34.0	34.0	34.0	0.0	0.0	0.0	0.0	30.0	0.0	21.0	51.0	0.0
Total Split (%)	29.6%	29.6%	29.6%	0.0%	0.0%	0.0%	0.0%	26.1%	0.0%	18.3%	44.3%	0.0%
Maximum Green (s)	29.0	29.0	29.0					25.0		17.0	46.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	26%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.57	0.85	0.22					1.45		1.56	0.48	
Control Delay	22.9	36.1	6.3					238.0		299.5	14.1	
Queue Delay	1.1	0.0	0.0					23.8		17.7	1.0	
Total Delay	24.0	36.1	6.3					261.8		317.2	15.1	
Queue Length 50th (ft)	209	412	17					~472		~329	60	
Queue Length 95th (ft)	268	500	42					#493		#394	68	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	753	793	677					903		406	1134	
Starvation Cap Reductn	0	0	0					32		10	338	
Spillback Cap Reductn	144	0	0					6		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.70	0.85	0.22					1.50		1.60	0.69	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	550	120	0	0	0	0	820	250	520	450	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.96		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1262					3935		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1262					3935		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	427	671	146	0	0	0	0	1000	305	634	549	0
RTOR Reduction (vph)	0	0	49	0	0	0	0	48	0	0	0	0
Lane Group Flow (vph)	427	671	97	0	0	0	0	1257	0	634	549	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Effective Green, g (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Actuated g/C Ratio	0.51	0.51	0.51					0.22		0.15	0.40	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	753	793	647					855		406	1134	
v/s Ratio Prot	0.29	c0.43						c0.32		c0.23	0.19	
v/s Ratio Perm			0.08									
v/c Ratio	0.57	0.85	0.15					1.47		1.56	0.48	
Uniform Delay, d1	19.2	24.1	14.8					45.0		49.0	25.7	
Progression Factor	1.00	1.00	1.00					0.95		1.13	0.49	
Incremental Delay, d2	3.1	10.8	0.5					217.7		263.0	1.3	
Delay (s)	22.3	34.9	15.3					260.3		318.4	13.9	
Level of Service	C	C	B					F		F	B	
Approach Delay (s)		28.3			0.0			260.3			177.1	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	156.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	145.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	50	380	690	100	150	420	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.981				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3009	0	1561	3123	
Flt Permitted	0.950				0.279		
Satd. Flow (perm)	1578	2361	3009	0	459	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		437	18				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	57	437	793	115	172	483	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	57	437	908	0	172	483	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	23.0	56.0	0.0	23.0	79.0	20.0
Total Split (%)	13.9%	20.0%	48.7%	0.0%	20.0%	68.7%	17%
Maximum Green (s)	11.0	19.0	51.0		19.0	74.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.42	0.57	0.40		0.37	0.18	
Control Delay	57.4	13.3	6.5		6.9	1.5	
Queue Delay	0.0	0.4	2.6		0.3	0.2	
Total Delay	57.4	13.7	9.2		7.2	1.6	
Queue Length 50th (ft)	43	18	116		12	18	
Queue Length 95th (ft)	83	77	166		55	36	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	151	957	2254		577	2686	
Starvation Cap Reductn	0	0	0		112	1315	
Spillback Cap Reductn	0	172	1188		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.56	0.85		0.37	0.35	

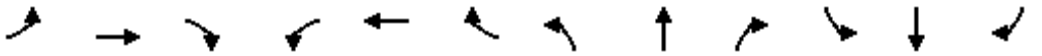
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	50	380	690	100	150	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3009		1561	3123
Flt Permitted	0.95	1.00	1.00		0.28	1.00
Satd. Flow (perm)	1578	2361	3009		459	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	57	437	793	115	172	483
RTOR Reduction (vph)	0	376	5	0	0	0
Lane Group Flow (vph)	57	61	903	0	172	483
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	8.1	16.0	85.0		96.9	96.9
Effective Green, g (s)	8.1	16.0	85.0		96.9	96.9
Actuated g/C Ratio	0.07	0.14	0.74		0.84	0.84
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	111	328	2224		462	2631
v/s Ratio Prot	c0.04	0.01	c0.30		c0.03	0.15
v/s Ratio Perm		0.01			0.29	
v/c Ratio	0.51	0.19	0.41		0.37	0.18
Uniform Delay, d1	51.5	43.7	5.6		2.2	1.7
Progression Factor	0.96	2.90	1.00		2.88	0.71
Incremental Delay, d2	4.0	0.3	0.6		0.5	0.1
Delay (s)	53.4	127.3	6.1		6.9	1.3
Level of Service	D	F	A		A	A
Approach Delay (s)	118.7		6.1			2.8
Approach LOS	F		A			A

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

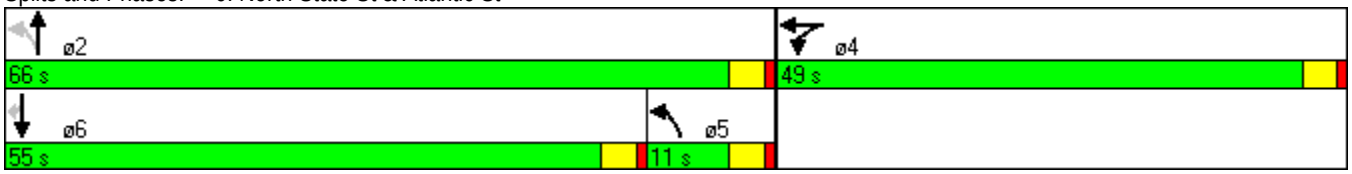


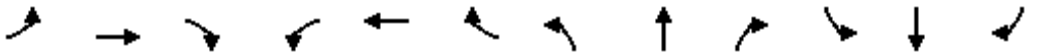
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	50	1450	200	100	550	0	0	320	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.982							0.850
Flt Protected					0.999			0.992				
Satd. Flow (prot)	0	0	0	0	5658	0	0	3054	0	0	3504	1425
Flt Permitted					0.999			0.799				
Satd. Flow (perm)	0	0	0	0	5658	0	0	2460	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					34							106
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	60	1747	241	120	663	0	0	386	530
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2048	0	0	783	0	0	386	530
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	11.0	66.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	42.6%	42.6%	0.0%	9.6%	57.4%	0.0%	0.0%	47.8%	47.8%
Maximum Green (s)				45.0	45.0		7.0	62.0			51.0	51.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					0.93			0.58			0.20	0.64
Control Delay					30.0			25.5			13.9	18.8
Queue Delay					0.0			33.7			0.0	0.0
Total Delay					30.0			59.2			13.9	18.8
Queue Length 50th (ft)					242			194			74	214
Queue Length 95th (ft)					255			m215			93	286
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2235			1340			1909	824
Starvation Cap Reductn					0			597			0	0
Spillback Cap Reductn					0			0			11	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					0.92			1.05			0.20	0.64

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: North State St & Atlantic St

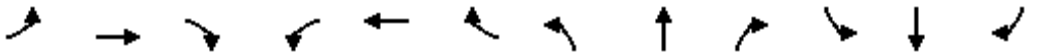




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	50	1450	200	100	550	0	0	320	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5657			3056			3504	1425
Flt Permitted					1.00			0.80			1.00	1.00
Satd. Flow (perm)					5657			2460			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	60	1747	241	120	663	0	0	386	530
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	48
Lane Group Flow (vph)	0	0	0	0	2027	0	0	783	0	0	386	482
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					44.4			62.6			62.6	62.6
Effective Green, g (s)					44.4			62.6			62.6	62.6
Actuated g/C Ratio					0.39			0.54			0.54	0.54
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2184			1339			1907	776
v/s Ratio Prot					c0.36						0.11	
v/s Ratio Perm								0.32				c0.34
v/c Ratio					0.93			0.58			0.20	0.62
Uniform Delay, d1					33.8			17.5			13.4	18.0
Progression Factor					0.70			1.36			1.00	1.00
Incremental Delay, d2					5.6			0.4			0.2	3.7
Delay (s)					29.2			24.2			13.7	21.7
Level of Service					C			C			B	C
Approach Delay (s)		0.0			29.2			24.2			18.3	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

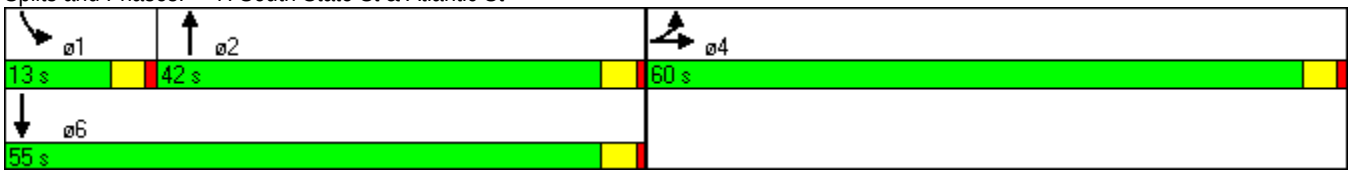


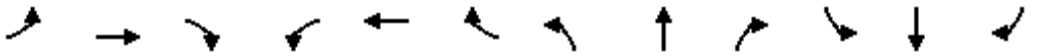
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	1870	50	0	0	0	0	250	150	170	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.996						0.949				
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1247	5224	0	0	0	0	0	1750	0	2987	1621	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1247	5224	0	0	0	0	0	1750	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		5										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	513	2397	64	0	0	0	0	321	192	218	256	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	462	2512	0	0	0	0	0	513	0	218	256	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	60.0	60.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	13.0	55.0	0.0
Total Split (%)	52.2%	52.2%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	0.0%	11.3%	47.8%	0.0%
Maximum Green (s)	56.0	56.0						38.0		9.0	51.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	0.99						0.89		0.93	0.36	
Control Delay	34.0	38.2						61.3		99.6	13.2	
Queue Delay	95.0	34.1						71.5		0.0	1.1	
Total Delay	129.0	72.3						132.8		99.6	14.3	
Queue Length 50th (ft)	333	353						382		67	55	
Queue Length 95th (ft)	398	m205						429		m#107	m67	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	607	2546						578		234	719	
Starvation Cap Reductn	0	0						134		0	266	
Spillback Cap Reductn	222	232						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	1.20	1.09						1.16		0.93	0.57	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

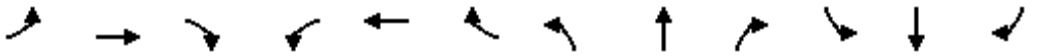




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	1870	50	0	0	0	0	250	150	170	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	1.00						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5225						1751		2987	1621	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5225						1751		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	513	2397	64	0	0	0	0	321	192	218	256	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	462	2509	0	0	0	0	0	513	0	218	256	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	56.0	56.0						38.0		9.0	51.0	
Effective Green, g (s)	56.0	56.0						38.0		9.0	51.0	
Actuated g/C Ratio	0.49	0.49						0.33		0.08	0.44	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	607	2544						579		234	719	
v/s Ratio Prot	0.37	c0.48						c0.29		c0.07	0.16	
v/s Ratio Perm												
v/c Ratio	0.76	0.99						0.89		0.93	0.36	
Uniform Delay, d1	24.0	29.1						36.4		52.7	21.1	
Progression Factor	1.00	0.86						1.17		1.08	0.55	
Incremental Delay, d2	5.6	13.4						17.8		39.6	1.3	
Delay (s)	29.7	38.6						60.4		96.3	12.9	
Level of Service	C	D						E		F	B	
Approach Delay (s)		37.2			0.0			60.4			51.3	
Approach LOS		D			A			E			D	

Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

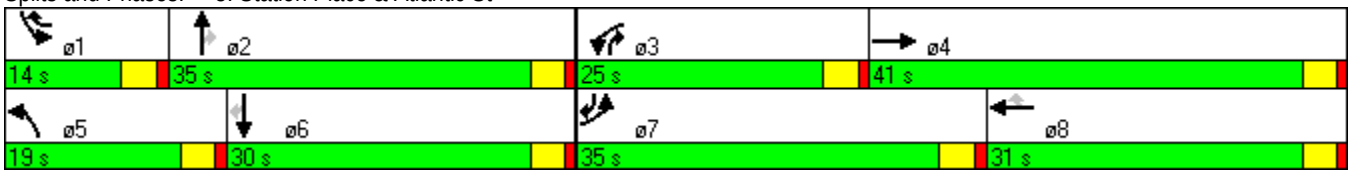


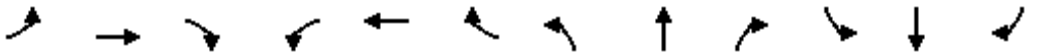
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	140	60	90	100	70	50	180	70	20	110	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.955				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1633	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1633	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				76			76			130
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	163	152	65	98	109	76	54	196	76	22	120	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	217	0	98	109	76	54	196	76	22	120	130
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	35.0	41.0	0.0	25.0	31.0	14.0	19.0	35.0	25.0	14.0	30.0	35.0
Total Split (%)	30.4%	35.7%	0.0%	21.7%	27.0%	12.2%	16.5%	30.4%	21.7%	12.2%	26.1%	30.4%
Maximum Green (s)	31.0	37.0		21.0	27.0	10.0	15.0	31.0	21.0	10.0	26.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.70	0.58		0.58	0.39	0.18	0.42	0.13	0.08	0.23	0.08	0.14
Control Delay	51.7	41.4		61.6	46.7	8.0	56.2	20.9	5.7	77.1	9.4	0.3
Queue Delay	0.1	0.0		0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	51.8	41.4		61.6	46.7	8.3	56.2	21.0	5.7	77.1	9.4	0.3
Queue Length 50th (ft)	107	150		70	72	0	39	47	0	17	11	0
Queue Length 95th (ft)	173	199		121	129	35	80	83	29	m40	m18	m0
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	409	539		281	381	461	208	1550	1026	134	1445	1095
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	11	0		0	0	149	0	519	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.40		0.35	0.29	0.24	0.26	0.19	0.07	0.16	0.08	0.12

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	140	60	90	100	70	50	180	70	20	110	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1633		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1633		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	163	152	65	98	109	76	54	196	76	22	120	130
RTOR Reduction (vph)	0	16	0	0	0	59	0	0	31	0	0	50
Lane Group Flow (vph)	163	201	0	98	109	17	54	196	45	22	120	80
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	17.7	25.1		12.6	20.0	26.1	8.2	55.2	67.8	6.1	53.1	70.8
Effective Green, g (s)	17.7	25.1		12.6	20.0	26.1	8.2	55.2	67.8	6.1	53.1	70.8
Actuated g/C Ratio	0.15	0.22		0.11	0.17	0.23	0.07	0.48	0.59	0.05	0.46	0.62
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	356		169	282	361	114	1529	890	82	1422	896
v/s Ratio Prot	c0.11	c0.12		0.06	0.07	0.00	c0.03	c0.06	0.01	0.01	0.04	0.01
v/s Ratio Perm						0.01			0.03			0.04
v/c Ratio	0.70	0.57		0.58	0.39	0.05	0.47	0.13	0.05	0.27	0.08	0.09
Uniform Delay, d1	46.1	40.1		48.7	42.1	34.7	51.3	16.6	10.0	52.3	17.3	9.0
Progression Factor	0.79	0.95		1.00	1.00	1.00	0.94	1.13	2.29	1.43	0.46	0.03
Incremental Delay, d2	8.7	2.0		4.8	0.9	0.1	3.1	0.2	0.0	1.6	0.1	0.0
Delay (s)	45.3	40.2		53.4	42.9	34.8	51.3	18.9	22.9	76.2	8.1	0.3
Level of Service	D	D		D	D	C	D	B	C	E	A	A
Approach Delay (s)		42.4			44.4			25.2			9.9	
Approach LOS		D			D			C			A	

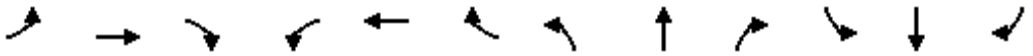
Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	250	950	250	400	500	0	0	550	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.974						0.960	
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	5381	0	1540	3079	0	0	2956	0
Flt Permitted					0.991		0.189					
Satd. Flow (perm)	0	0	0	0	5381	0	306	3079	0	0	2956	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					46						47	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	263	1000	263	421	526	0	0	579	211
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1526	0	421	526	0	0	790	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	36.0	77.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	33.0%	33.0%	0.0%	31.3%	67.0%	0.0%	0.0%	35.7%	0.0%
Maximum Green (s)				34.0	34.0		32.0	72.0			36.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					0.95		0.87	0.27			0.72	
Control Delay					52.3		49.9	6.5			35.7	
Queue Delay					7.4		66.4	0.9			0.1	
Total Delay					59.7		116.3	7.4			35.8	
Queue Length 50th (ft)					312		208	50			260	
Queue Length 95th (ft)					#390		#325	70			350	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					1623		539	1938			1096	
Starvation Cap Reductn					0		167	1089			0	
Spillback Cap Reductn					92		0	0			25	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.00		1.13	0.62			0.74	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

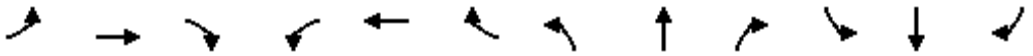
Splits and Phases: 9: North State St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	250	950	250	400	500	0	0	550	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5384		1540	3079			2956	
Flt Permitted					0.99		0.19	1.00			1.00	
Satd. Flow (perm)					5384		307	3079			2956	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	263	1000	263	421	526	0	0	579	211
RTOR Reduction (vph)	0	0	0	0	33	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	0	0	0	1493	0	421	526	0	0	760	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					33.6		72.4	72.4			41.5	
Effective Green, g (s)					33.6		72.4	72.4			41.5	
Actuated g/C Ratio					0.29		0.63	0.63			0.36	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1573		482	1938			1067	
v/s Ratio Prot					c0.28		c0.20	0.17			0.26	
v/s Ratio Perm							c0.35					
v/c Ratio					0.95		0.87	0.27			0.71	
Uniform Delay, d1					39.9		22.9	9.5			31.6	
Progression Factor					1.00		1.73	0.64			1.00	
Incremental Delay, d2					12.5		13.5	0.3			4.0	
Delay (s)					52.4		53.1	6.4			35.7	
Level of Service					D		D	A			D	
Approach Delay (s)		0.0			52.4			27.1			35.7	
Approach LOS		A			D			C			D	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

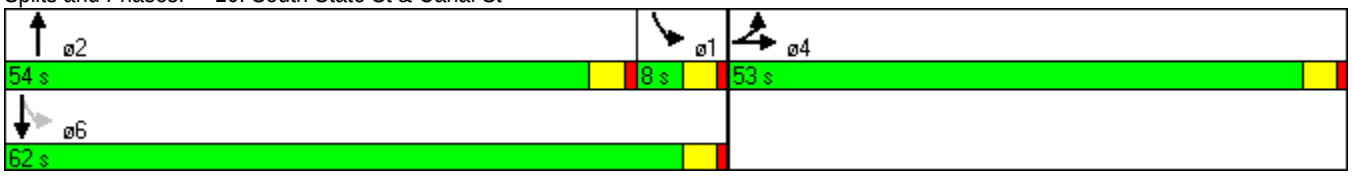


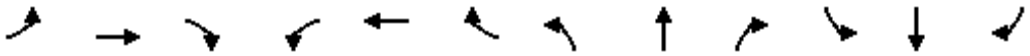
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1570	400	0	0	0	0	650	250	300	500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.970						0.958				
Flt Protected	0.950										0.982	
Satd. Flow (prot)	1593	4439	0	0	0	0	0	2848	0	0	3024	0
Flt Permitted	0.950										0.513	
Satd. Flow (perm)	1593	4439	0	0	0	0	0	2848	0	0	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68						24				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	263	1653	421	0	0	0	0	684	263	316	526	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	2074	0	0	0	0	0	947	0	0	842	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	53.0	53.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	8.0	62.0	0.0
Total Split (%)	46.1%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.0%	0.0%	7.0%	53.9%	0.0%
Maximum Green (s)	49.0	49.0						50.0		4.0	58.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.39	1.07						0.65			1.85dl	
Control Delay	18.7	58.5						23.2			63.9	
Queue Delay	0.4	0.0						3.6			24.0	
Total Delay	19.1	58.5						26.8			87.9	
Queue Length 50th (ft)	72	~589						257			~370	
Queue Length 95th (ft)	m91	m#621						329			m#471	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	679	1930						1448			797	
Starvation Cap Reductn	0	0						399			43	
Spillback Cap Reductn	125	0						37			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.47	1.07						0.90			1.12	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

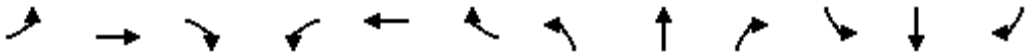




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1570	400	0	0	0	0	650	250	300	500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.97						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.98	
Satd. Flow (prot)	1593	4437						2849			3022	
Flt Permitted	0.95	1.00						1.00			0.51	
Satd. Flow (perm)	1593	4437						2849			1580	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	263	1653	421	0	0	0	0	684	263	316	526	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	263	2035	0	0	0	0	0	935	0	0	842	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	49.0	49.0						58.0			58.0	
Effective Green, g (s)	49.0	49.0						58.0			58.0	
Actuated g/C Ratio	0.43	0.43						0.50			0.50	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	679	1891						1437			797	
v/s Ratio Prot	0.17	c0.46						0.33				
v/s Ratio Perm											c0.53	
v/c Ratio	0.39	1.08						0.65			1.85dl	
Uniform Delay, d1	22.7	33.0						21.0			28.5	
Progression Factor	0.79	0.63						1.00			0.74	
Incremental Delay, d2	0.1	37.6						2.3			40.9	
Delay (s)	17.9	58.2						23.3			62.0	
Level of Service	B	E						C			E	
Approach Delay (s)		53.7			0.0			23.3			62.0	
Approach LOS		D			A			C			E	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

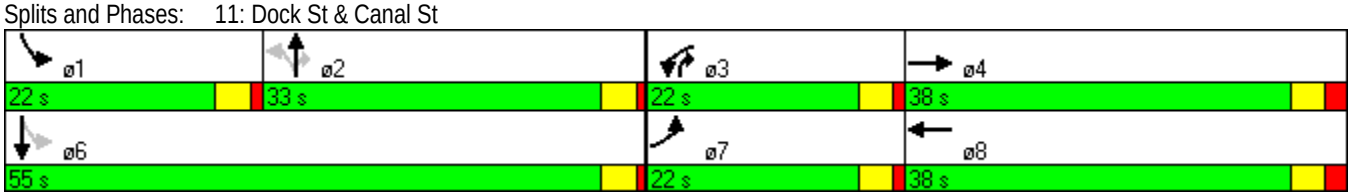


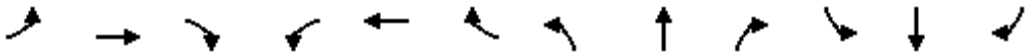
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1621	3079	0	1565	3079	0	0	3079	1621	1621	3079	0
Flt Permitted												
Satd. Flow (perm)	1621	3079	0	1565	3079	0	0	3079	1621	1621	3079	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	22.0	38.0	0.0	22.0	38.0	0.0	33.0	33.0	22.0	22.0	55.0	0.0
Total Split (%)	19.1%	33.0%	0.0%	19.1%	33.0%	0.0%	28.7%	28.7%	19.1%	19.1%	47.8%	0.0%
Maximum Green (s)	18.0	33.0		18.0	33.0		29.0	29.0	18.0	18.0	51.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	280	10	0	250	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.973	
Flt Protected					0.962	
Satd. Flow (prot)	1863	1583	0	1900	1744	0
Flt Permitted					0.962	
Satd. Flow (perm)	1863	1583	0	1900	1744	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	304	11	0	272	87	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	304	11	0	272	109	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	280	10	0	250	80	20
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	304	11	0	272	87	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked						
vC, conflicting volume			315		576	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			315		576	304
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		82	97
cM capacity (veh/h)			1245		479	735

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	304	11	272	109
Volume Left	0	0	0	87
Volume Right	0	11	0	22
cSH	1700	1700	1245	515
Volume to Capacity	0.18	0.01	0.00	0.21
Queue Length 95th (ft)	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	13.9
Lane LOS				B
Approach Delay (s)	0.0		0.0	13.9
Approach LOS				B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	300	0	20	250	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.996		
Satd. Flow (prot)	1863	0	0	1892	0	0
Flt Permitted				0.996		
Satd. Flow (perm)	1863	0	0	1892	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	326	0	22	272	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	326	0	0	294	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	300	0	20	250	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	326	0	22	272	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.97	
vC, conflicting volume			326		641	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			326		614	326
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1234		433	715

Direction, Lane #	EB 1	WB 1
Volume Total	326	293
Volume Left	0	22
Volume Right	0	0
cSH	1700	1234
Volume to Capacity	0.19	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.7
Lane LOS		A
Approach Delay (s)	0.0	0.7
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	300	0	0	270	0	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	316	0	0	284	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	316	0	0	284	0	53
Sign Control	Free			Free	Stop	

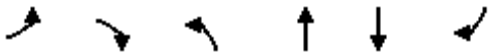
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

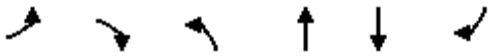
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	300	0	0	270	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	316	0	0	284	0	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.96	
vC, conflicting volume			316		600	316
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			316		558	316
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			1244		469	725

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	316	284	53
Volume Left	0	0	0
Volume Right	0	0	53
cSH	1700	1700	725
Volume to Capacity	0.19	0.17	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	10.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		



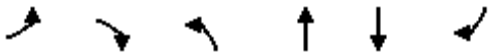
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	20	30	250	230	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.961					0.850
Flt Protected	0.966			0.995		
Satd. Flow (prot)	1729	0	0	1853	1863	1583
Flt Permitted	0.966			0.950		
Satd. Flow (perm)	1729	0	0	1770	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					33
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	54	22	33	272	250	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	0	0	305	250	33
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	31.0	0.0	84.0	84.0	84.0	84.0
Total Split (%)	27.0%	0.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	26.0		79.0	79.0	79.0	79.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.43			0.20	0.16	0.02
Control Delay	45.6			2.2	3.2	1.8
Queue Delay	0.0			0.0	0.7	0.0
Total Delay	45.6			2.2	3.9	1.8
Queue Length 50th (ft)	42			32	70	1
Queue Length 95th (ft)	87			63	101	10
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	419			1532	1612	1363
Starvation Cap Reductn	0			0	1041	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.18			0.20	0.44	0.02

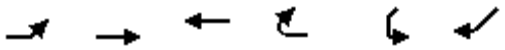
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	20	30	250	230	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.96			1.00	1.00	0.85
Flt Protected	0.97			0.99	1.00	1.00
Satd. Flow (prot)	1729			1853	1863	1583
Flt Permitted	0.97			0.95	1.00	1.00
Satd. Flow (perm)	1729			1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	33	272	250	33
RTOR Reduction (vph)	16	0	0	0	0	5
Lane Group Flow (vph)	60	0	0	305	250	28
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	8.3			96.7	96.7	96.7
Effective Green, g (s)	9.3			97.7	97.7	96.7
Actuated g/C Ratio	0.08			0.85	0.85	0.84
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	140			1504	1583	1331
v/s Ratio Prot	c0.03				0.13	
v/s Ratio Perm				c0.17		0.02
v/c Ratio	0.43			0.20	0.16	0.02
Uniform Delay, d1	50.3			1.6	1.5	1.5
Progression Factor	1.00			1.00	1.62	2.27
Incremental Delay, d2	2.1			0.3	0.2	0.0
Delay (s)	52.5			1.9	2.6	3.4
Level of Service	D			A	A	A
Approach Delay (s)	52.5			1.9	2.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

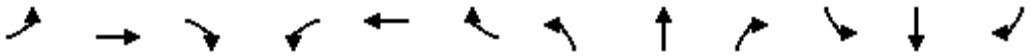


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	745	489	0	0	0	0	292	257	156	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.085		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	152	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			406						17			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	249	810	532	0	0	0	0	317	279	170	650	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	810	532	0	0	0	0	317	279	170	650	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	33.0	33.0	33.0	0.0	0.0	0.0	0.0	72.0	72.0	52.0	52.0	0.0
Total Split (%)	31.4%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%	68.6%	68.6%	49.5%	49.5%	0.0%
Maximum Green (s)	28.0	28.0	28.0							47.0	47.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	44.0	20.0	8.0
Total Split (%)	42%	19%	8%
Maximum Green (s)	39.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.53	0.87	0.74					0.26	0.27	2.50	0.43	
Control Delay	37.9	47.9	15.8					0.3	0.1	735.6	20.9	
Queue Delay	0.0	0.0	0.2					4.7	4.9	0.0	0.0	
Total Delay	37.9	47.9	16.0					5.0	4.9	735.6	20.9	
Queue Length 50th (ft)	143	273	69					3	0	~148	153	
Queue Length 95th (ft)	224	#375	208					m2	m0	#286	201	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	467	935	716					1238	1027	68	1517	
Starvation Cap Reductn	0	0	0					837	669	0	0	
Spillback Cap Reductn	0	0	13					0	0	0	15	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.87	0.76					0.79	0.78	2.50	0.43	

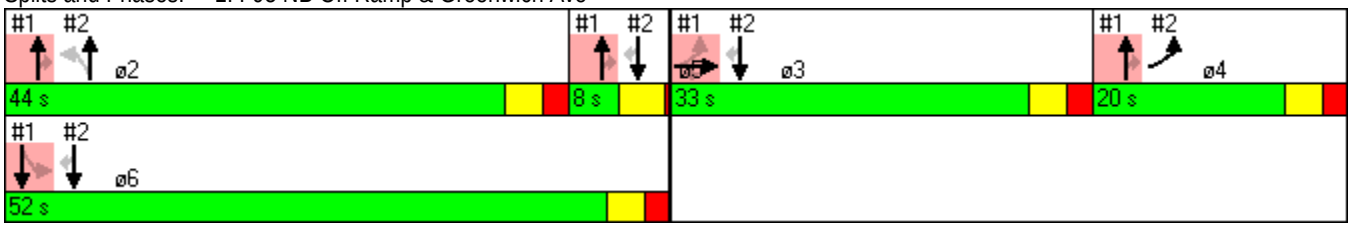
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

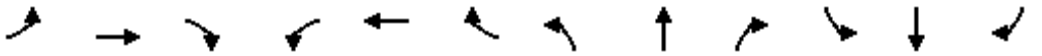
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave



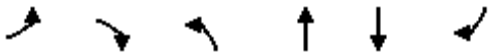
Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal 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

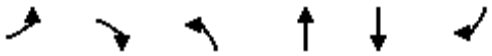


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	745	489	0	0	0	0	292	257	156	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	152	3388	
Peak-hour factor, PHF	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)	249	810	532	0	0	0	0	317	279	170	650	0
RTOR Reduction (vph)	0	0	298	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	249	810	234	0	0	0	0	317	273	170	650	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Effective Green, g (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Actuated g/C Ratio	0.27	0.27	0.27					0.65	0.65	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	467	935	418					1256	1036	68	1517	
v/s Ratio Prot		c0.23						0.16			0.19	
v/s Ratio Perm	0.14		0.15						c0.17	c1.12		
v/c Ratio	0.53	0.87	0.56					0.25	0.26	2.50	0.43	
Uniform Delay, d1	32.9	36.7	33.2					7.8	7.9	29.0	19.8	
Progression Factor	1.00	1.00	1.00					0.03	0.00	1.00	1.00	
Incremental Delay, d2	1.5	8.8	2.1					0.0	0.0	716.6	0.2	
Delay (s)	34.4	45.5	35.3					0.3	0.0	745.6	20.1	
Level of Service	C	D	D					A	A	F	C	
Approach Delay (s)		40.3			0.0			0.1			170.5	
Approach LOS		D			A			A			F	

Intersection Summary			
HCM Average Control Delay	67.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	212	58	56	337	775	312			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.968				0.994	0.850			
Flt Protected	0.962			0.993					
Satd. Flow (prot)	3365	0	0	1850	1759	1504			
Flt Permitted	0.962			0.419					
Satd. Flow (perm)	3365	0	0	780	1759	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	29				6	305			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	230	63	61	366	842	339			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	293	0	0	427	876	305			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	44.0	44.0	93.0	93.0	33.0	8.0	52.0
Total Split (%)	19.0%	0.0%	41.9%	41.9%	88.6%	88.6%	31%	8%	50%
Maximum Green (s)	15.0		39.0	39.0			28.0	4.0	47.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.58			1.47	0.65	0.25			
Control Delay	42.9			258.8	6.8	0.4			
Queue Delay	0.0			0.0	0.9	0.8			
Total Delay	42.9			258.8	7.7	1.3			
Queue Length 50th (ft)	86			~396	386	0			
Queue Length 95th (ft)	130			#587	488	m0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	506			290	1342	1219			
Starvation Cap Reductn	0			0	215	633			
Spillback Cap Reductn	0			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.58			1.47	0.78	0.52			

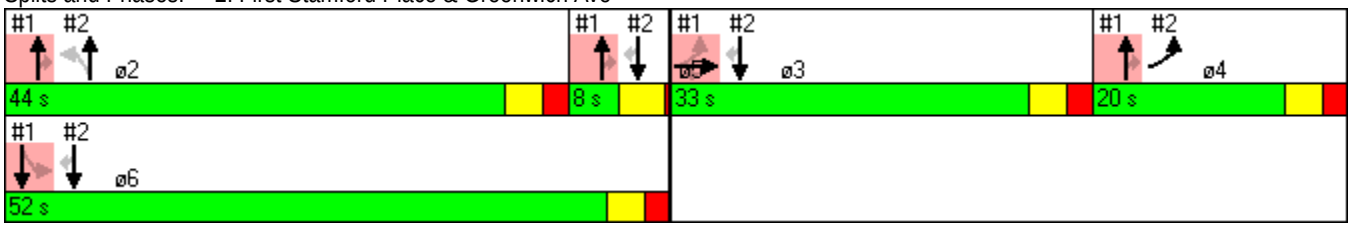
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

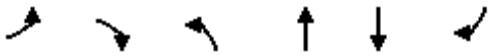
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

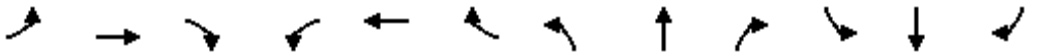
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	212	58	56	337	775	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.97			1.00	0.99	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	3365			1850	1759	1504
Flt Permitted	0.96			0.42	1.00	1.00
Satd. Flow (perm)	3365			781	1759	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	63	61	366	842	339
RTOR Reduction (vph)	25	0	0	0	2	84
Lane Group Flow (vph)	268	0	0	427	874	221
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			39.0	80.0	80.0
Effective Green, g (s)	15.0			39.0	76.0	76.0
Actuated g/C Ratio	0.14			0.37	0.72	0.72
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	481			290	1273	1089
v/s Ratio Prot	c0.08				c0.50	
v/s Ratio Perm				c0.55		0.15
v/c Ratio	0.56			1.47	0.69	0.20
Uniform Delay, d1	41.9			33.0	8.0	4.7
Progression Factor	1.00			1.00	0.77	0.01
Incremental Delay, d2	1.7			230.4	1.4	0.1
Delay (s)	43.6			263.4	7.5	0.1
Level of Service	D			F	A	A
Approach Delay (s)	43.6			263.4	5.6	
Approach LOS	D			F	A	

Intersection Summary			
HCM Average Control Delay	69.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

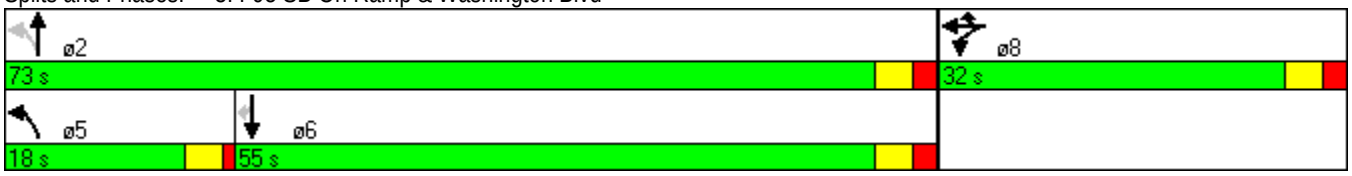


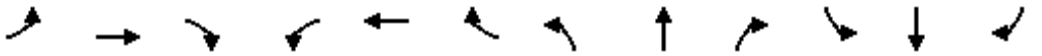
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	313	105	781	302	907	0	0	1037	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.152					
Satd. Flow (perm)	0	0	0	1438	1513	1458	235	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						167						480
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	319	107	797	308	926	0	0	1058	645
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	319	107	797	308	926	0	0	1058	645
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	32.0	32.0	32.0	18.0	73.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	30.5%	30.5%	30.5%	17.1%	69.5%	0.0%	0.0%	52.4%	52.4%
Maximum Green (s)				27.0	27.0	27.0	14.0	68.0			50.0	50.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.86	0.28	1.60	0.97	0.49			0.71	0.70
Control Delay				48.4	40.2	296.8	21.2	8.3			25.1	9.9
Queue Delay				43.9	0.0	0.0	1.2	30.5			553.5	0.0
Total Delay				92.3	40.2	296.8	22.4	38.8			578.6	9.9
Queue Length 50th (ft)				189	60	~651	122	224			286	67
Queue Length 95th (ft)				m150	m47	m#431	m100	m186			365	210
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				370	389	499	319	1901			1488	917
Starvation Cap Reductn				0	0	0	2	1017			0	0
Spillback Cap Reductn				74	0	0	0	0			1013	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				1.08	0.28	1.60	0.97	1.05			2.23	0.70

Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 19 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ 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.

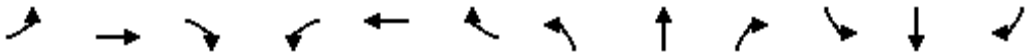
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	313	105	781	302	907	0	0	1037	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.15	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	235	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	319	107	797	308	926	0	0	1058	645
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	0	251
Lane Group Flow (vph)	0	0	0	319	107	673	308	926	0	0	1058	394
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Effective Green, g (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Actuated g/C Ratio				0.26	0.26	0.26	0.65	0.65			0.48	0.48
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				370	389	375	317	1901			1488	666
v/s Ratio Prot				0.22	0.07	c0.46	c0.13	0.32			0.34	
v/s Ratio Perm							c0.50					0.28
v/c Ratio				0.86	0.28	1.79	0.97	0.49			0.71	0.59
Uniform Delay, d1				37.2	31.2	39.0	22.1	9.5			21.8	20.0
Progression Factor				1.21	1.26	1.29	0.43	0.85			1.00	1.00
Incremental Delay, d2				2.3	0.1	358.5	9.5	0.1			2.9	3.8
Delay (s)				47.1	39.3	409.0	18.9	8.1			24.7	23.9
Level of Service				D	D	F	B	A			C	C
Approach Delay (s)		0.0			282.2			10.8			24.4	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	96.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	162.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



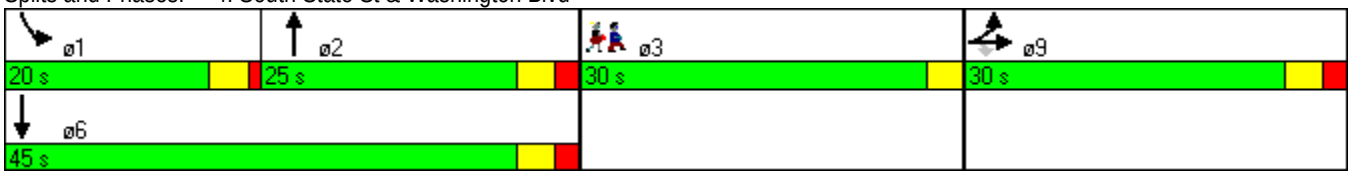
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	437	269	459	0	0	0	0	772	209	381	969	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		0.99		
Frt			0.850					0.968				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3948	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1453	1545	1221	0	0	0	0	3948	0	2732	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			476					57				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	533	328	560	0	0	0	0	941	255	465	1182	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	533	328	560	0	0	0	0	1196	0	465	1182	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	25.0	0.0	20.0	45.0	0.0
Total Split (%)	28.6%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%	23.8%	0.0%	19.0%	42.9%	0.0%
Maximum Green (s)	25.0	25.0	25.0					20.0		16.0	40.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.69	0.41	0.65					1.50		1.11	1.09	
Control Delay	24.6	17.0	6.7					263.1		111.6	87.6	
Queue Delay	0.1	0.0	0.1					179.6		7.6	301.6	
Total Delay	24.7	17.0	6.8					442.8		119.2	389.3	
Queue Length 50th (ft)	256	127	28					~409		~185	~488	
Queue Length 95th (ft)	327	172	68					m#431		m#247	#530	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	769	809	866					798		419	1080	
Starvation Cap Reductn	0	0	0					0		7	413	
Spillback Cap Reductn	13	0	10					168		0	62	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.71	0.41	0.65					1.90		1.13	1.77	

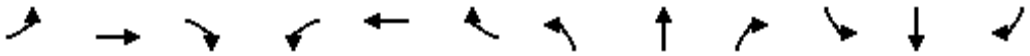
Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 59 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	437	269	459	0	0	0	0	772	209	381	969	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1263					3948		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1263					3948		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	533	328	560	0	0	0	0	941	255	465	1182	0
RTOR Reduction (vph)	0	0	227	0	0	0	0	46	0	0	0	0
Lane Group Flow (vph)	533	328	333	0	0	0	0	1150	0	465	1182	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Effective Green, g (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Actuated g/C Ratio	0.52	0.52	0.52					0.19		0.15	0.38	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	769	809	662					752		419	1080	
v/s Ratio Prot	c0.36	0.21						c0.29		0.17	c0.42	
v/s Ratio Perm			0.26									
v/c Ratio	0.69	0.41	0.50					1.53		1.11	1.09	
Uniform Delay, d1	18.7	15.1	16.2					42.5		44.5	32.5	
Progression Factor	1.00	1.00	1.00					1.19		0.91	1.05	
Incremental Delay, d2	5.1	1.5	2.7					242.6		72.5	54.3	
Delay (s)	23.8	16.6	18.9					293.3		113.2	88.3	
Level of Service	C	B	B					F		F	F	
Approach Delay (s)		20.2			0.0			293.3			95.3	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	125.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	162.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	89	242	739	94	636	792	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.983				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3015	0	1561	3123	
Flt Permitted	0.950				0.105		
Satd. Flow (perm)	1578	2361	3015	0	173	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		278	14				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	102	278	849	108	731	910	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	102	278	957	0	731	910	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	30.0	39.0	0.0	30.0	69.0	20.0
Total Split (%)	15.2%	28.6%	37.1%	0.0%	28.6%	65.7%	19%
Maximum Green (s)	11.0	26.0	34.0		26.0	64.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.65	0.18	0.97		0.97	0.36	
Control Delay	65.2	1.4	57.7		22.8	1.2	
Queue Delay	0.0	0.7	131.2		67.8	1.7	
Total Delay	65.2	2.2	188.9		90.6	2.9	
Queue Length 50th (ft)	67	0	327		355	17	
Queue Length 95th (ft)	#127	15	#440		m465	m16	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	165	1508	986		756	2514	
Starvation Cap Reductn	0	0	0		128	1374	
Spillback Cap Reductn	0	921	254		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.47	1.31		1.16	0.80	

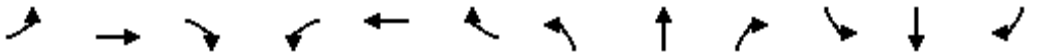
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 7 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	89	242	739	94	636	792
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3015		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3015		173	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	102	278	849	108	731	910
RTOR Reduction (vph)	0	127	9	0	0	0
Lane Group Flow (vph)	102	151	948	0	731	910
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.5	57.0	34.0		84.5	84.5
Effective Green, g (s)	10.5	57.0	34.0		84.5	84.5
Actuated g/C Ratio	0.10	0.54	0.32		0.80	0.80
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	158	1282	976		754	2513
v/s Ratio Prot	c0.06	0.05	0.31		c0.43	0.29
v/s Ratio Perm		0.01			c0.35	
v/c Ratio	0.65	0.12	0.97		0.97	0.36
Uniform Delay, d1	45.5	11.7	35.0		24.3	2.8
Progression Factor	1.00	1.00	1.00		0.31	0.37
Incremental Delay, d2	8.7	0.0	22.6		12.1	0.1
Delay (s)	54.2	11.8	57.6		19.8	1.2
Level of Service	D	B	E		B	A
Approach Delay (s)	23.2		57.6			9.5
Approach LOS	C		E			A

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

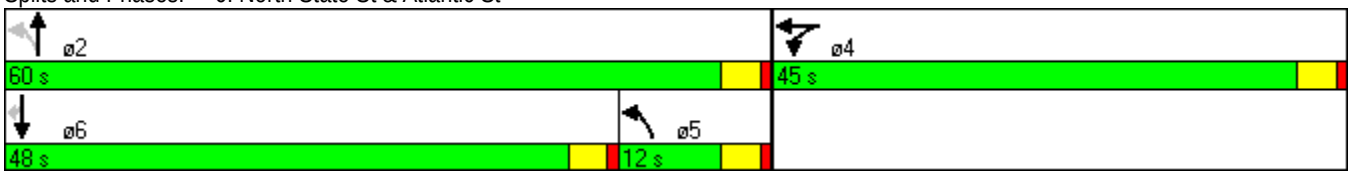


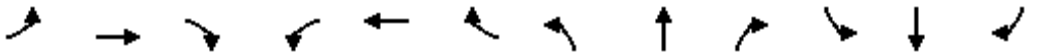
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	1899	257	411	890	0	0	506	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.985							0.850
Flt Protected					0.992			0.984				
Satd. Flow (prot)	0	0	0	0	5635	0	0	3030	0	0	3504	1425
Flt Permitted					0.992			0.613				
Satd. Flow (perm)	0	0	0	0	5635	0	0	1887	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					29							30
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	519	2288	310	495	1072	0	0	610	582
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3117	0	0	1567	0	0	610	582
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	12.0	60.0	0.0	0.0	48.0	48.0
Total Split (%)	0.0%	0.0%	0.0%	42.9%	42.9%	0.0%	11.4%	57.1%	0.0%	0.0%	45.7%	45.7%
Maximum Green (s)				41.0	41.0		8.0	56.0			44.0	44.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.41			1.56			0.33	0.75
Control Delay					210.2			280.1			14.5	25.6
Queue Delay					149.8			309.2			0.0	0.0
Total Delay					359.9			589.3			14.5	25.6
Queue Length 50th (ft)					~803			~789			116	277
Queue Length 95th (ft)					m#589			m#561			138	365
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2218			1006			1869	774
Starvation Cap Reductn					0			308			0	0
Spillback Cap Reductn					425			0			21	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.74			2.24			0.33	0.75

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
~ 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: 6: North State St & Atlantic St

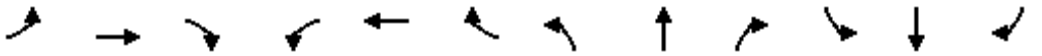




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	1899	257	411	890	0	0	506	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					0.99			0.98			1.00	1.00
Satd. Flow (prot)					5634			3031			3504	1425
Flt Permitted					0.99			0.61			1.00	1.00
Satd. Flow (perm)					5634			1888			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	519	2288	310	495	1072	0	0	610	582
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	0	0	0	3099	0	0	1567	0	0	610	568
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					41.0			56.0			56.0	56.0
Effective Green, g (s)					41.0			56.0			56.0	56.0
Actuated g/C Ratio					0.39			0.53			0.53	0.53
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2200			1007			1869	760
v/s Ratio Prot					c0.55						0.17	
v/s Ratio Perm								c0.83				0.40
v/c Ratio					1.41			1.56			0.33	0.75
Uniform Delay, d1					32.0			24.5			13.8	19.0
Progression Factor					0.95			1.48			1.00	1.00
Incremental Delay, d2					184.2			250.7			0.5	6.6
Delay (s)					214.6			286.9			14.3	25.6
Level of Service					F			F			B	C
Approach Delay (s)		0.0			214.6			286.9			19.8	
Approach LOS		A			F			F			B	

Intersection Summary			
HCM Average Control Delay	194.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	126.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

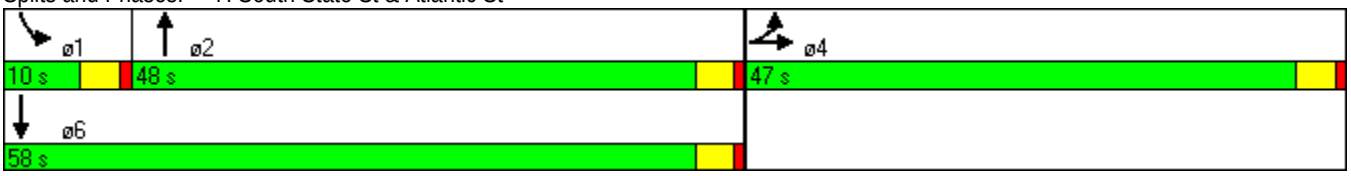


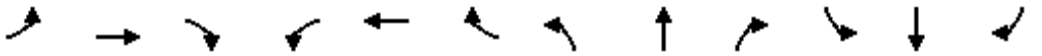
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	900	1304	340	0	0	0	0	404	289	185	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.975						0.944				
Flt Protected	0.950	0.990								0.950		
Satd. Flow (prot)	1247	5068	0	0	0	0	0	1741	0	2987	1621	0
Flt Permitted	0.950	0.990								0.950		
Satd. Flow (perm)	1247	5068	0	0	0	0	0	1741	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		58										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1154	1672	436	0	0	0	0	518	371	237	964	0
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	646	2616	0	0	0	0	0	889	0	237	964	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	10.0	58.0	0.0
Total Split (%)	44.8%	44.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45.7%	0.0%	9.5%	55.2%	0.0%
Maximum Green (s)	43.0	43.0						44.0		6.0	54.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.26	1.24						1.22		1.39	1.16	
Control Delay	163.3	138.6						139.8		233.8	103.3	
Queue Delay	551.3	98.3						363.8		0.0	18.1	
Total Delay	714.6	236.9						503.6		233.8	121.5	
Queue Length 50th (ft)	~676	379						~736		~109	~782	
Queue Length 95th (ft)	#761	m220						#775		m#114	m#625	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	511	2110						730		171	834	
Starvation Cap Reductn	0	0						188		0	29	
Spillback Cap Reductn	308	317						292		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	3.18	1.46						2.03		1.39	1.20	

Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: South State St & Atlantic St

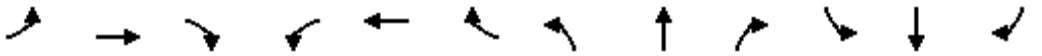




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	900	1304	340	0	0	0	0	404	289	185	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.98						0.94		1.00	1.00	
Flt Protected	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5070						1740		2987	1621	
Flt Permitted	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5070						1740		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1154	1672	436	0	0	0	0	518	371	237	964	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	646	2582	0	0	0	0	0	889	0	237	964	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	43.0	43.0						44.0		6.0	54.0	
Effective Green, g (s)	43.0	43.0						44.0		6.0	54.0	
Actuated g/C Ratio	0.41	0.41						0.42		0.06	0.51	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	511	2076						729		171	834	
v/s Ratio Prot	c0.52	0.51						0.51		0.08	c0.59	
v/s Ratio Perm												
v/c Ratio	1.26	1.24						1.22		1.39	1.16	
Uniform Delay, d1	31.0	31.0						30.5		49.5	25.5	
Progression Factor	1.00	1.07						1.00		1.06	0.90	
Incremental Delay, d2	133.9	113.9						111.0		194.3	78.8	
Delay (s)	164.9	147.2						141.5		246.8	101.8	
Level of Service	F	F						F		F	F	
Approach Delay (s)		150.7			0.0			141.5			130.4	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	144.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

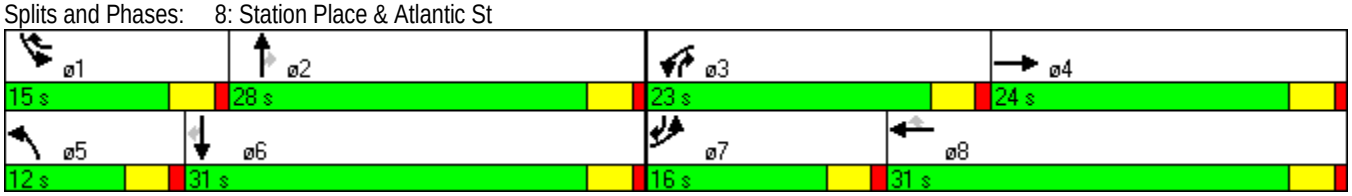


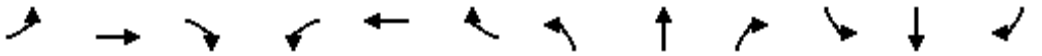
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	102	59	243	228	130	69	498	149	86	644	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.945				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				141			162			301
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	71	111	64	264	248	141	75	541	162	93	700	361
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	175	0	264	248	141	75	541	162	93	700	361
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	16.0	24.0	0.0	23.0	31.0	15.0	12.0	28.0	23.0	15.0	31.0	16.0
Total Split (%)	17.8%	26.7%	0.0%	25.6%	34.4%	16.7%	13.3%	31.1%	25.6%	16.7%	34.4%	17.8%
Maximum Green (s)	12.0	20.0		19.0	27.0	11.0	8.0	24.0	19.0	11.0	27.0	12.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.46	0.46		0.86	0.48	0.20	0.56	0.58	0.19	0.57	0.67	0.44
Control Delay	46.8	29.4		61.4	28.7	3.2	55.9	30.8	2.5	51.7	30.7	5.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.2	0.5
Total Delay	46.8	29.4		61.4	28.7	3.2	55.9	31.7	2.5	51.7	31.9	5.5
Queue Length 50th (ft)	39	71		144	111	0	42	142	0	50	188	19
Queue Length 95th (ft)	79	134		#272	190	31	#94	198	29	100	255	71
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	202	382		325	518	742	142	936	856	188	1041	857
Starvation Cap Reductn	0	0		0	0	0	0	175	0	0	153	190
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.46		0.81	0.48	0.19	0.53	0.71	0.19	0.49	0.79	0.54

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

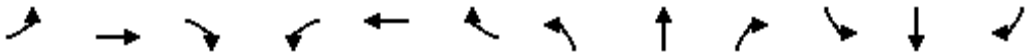
Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	102	59	243	228	130	69	498	149	86	644	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1616		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1616		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	71	111	64	264	248	141	75	541	162	93	700	361
RTOR Reduction (vph)	0	23	0	0	0	81	0	0	82	0	0	171
Lane Group Flow (vph)	71	152	0	264	248	60	75	541	80	93	700	190
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	9.2	20.0		18.0	28.8	38.4	6.4	26.4	44.4	9.6	29.6	38.8
Effective Green, g (s)	9.2	20.0		18.0	28.8	38.4	6.4	26.4	44.4	9.6	29.6	38.8
Actuated g/C Ratio	0.10	0.22		0.20	0.32	0.43	0.07	0.29	0.49	0.11	0.33	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	359		308	519	649	113	934	766	164	1013	655
v/s Ratio Prot	0.05	0.09		c0.17	c0.15	0.01	0.05	0.17	0.02	c0.06	c0.23	0.03
v/s Ratio Perm						0.03			0.04			0.11
v/c Ratio	0.46	0.42		0.86	0.48	0.09	0.66	0.58	0.10	0.57	0.69	0.29
Uniform Delay, d1	38.1	30.0		34.8	24.6	15.4	40.8	27.1	12.2	38.2	26.2	16.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.8		20.3	0.7	0.1	13.7	2.6	0.1	4.4	3.9	0.2
Delay (s)	40.2	30.8		55.0	25.3	15.5	54.5	29.7	12.2	42.7	30.1	16.9
Level of Service	D	C		E	C	B	D	C	B	D	C	B
Approach Delay (s)		33.5			35.2			28.4			27.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

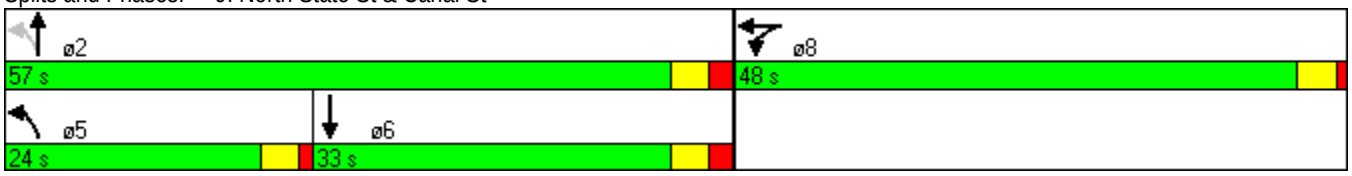


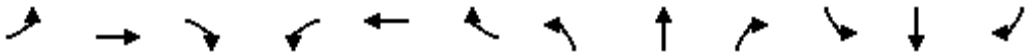
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	336	2091	261	417	582	0	0	688	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.985						0.968	
Flt Protected					0.994		0.950					
Satd. Flow (prot)	0	0	0	0	5458	0	1540	3079	0	0	2981	0
Flt Permitted					0.994		0.125					
Satd. Flow (perm)	0	0	0	0	5458	0	203	3079	0	0	2981	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30						28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	354	2201	275	439	613	0	0	724	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2830	0	439	613	0	0	917	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	24.0	57.0	0.0	0.0	33.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	22.9%	54.3%	0.0%	0.0%	31.4%	0.0%
Maximum Green (s)				44.0	44.0		20.0	52.0			28.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.23		1.23	0.40			1.13	
Control Delay					135.6		144.1	16.6			107.4	
Queue Delay					147.6		88.3	1.6			23.7	
Total Delay					283.2		232.4	18.3			131.1	
Queue Length 50th (ft)					~684		~322	137			~370	
Queue Length 95th (ft)					#759		m#496	181			#498	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					2305		357	1525			815	
Starvation Cap Reductn					0		50	701			0	
Spillback Cap Reductn					487		0	0			38	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.56		1.43	0.74			1.18	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St

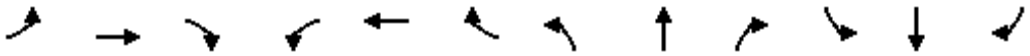




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	336	2091	261	417	582	0	0	688	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5459		1540	3079			2982	
Flt Permitted					0.99		0.12	1.00			1.00	
Satd. Flow (perm)					5459		203	3079			2982	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	354	2201	275	439	613	0	0	724	193
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	0	0	21	0
Lane Group Flow (vph)	0	0	0	0	2813	0	439	613	0	0	896	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					44.0		52.0	52.0			28.0	
Effective Green, g (s)					44.0		52.0	52.0			28.0	
Actuated g/C Ratio					0.42		0.50	0.50			0.27	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2288		355	1525			795	
v/s Ratio Prot					c0.52		c0.24	0.20			0.30	
v/s Ratio Perm							c0.38					
v/c Ratio					1.23		1.24	0.40			1.13	
Uniform Delay, d1					30.5		31.1	16.7			38.5	
Progression Factor					1.00		0.68	0.95			1.00	
Incremental Delay, d2					107.2		124.5	0.6			73.1	
Delay (s)					137.7		145.5	16.4			111.6	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			137.7			70.3			111.6	
Approach LOS		A			F			E			F	

Intersection Summary			
HCM Average Control Delay	118.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

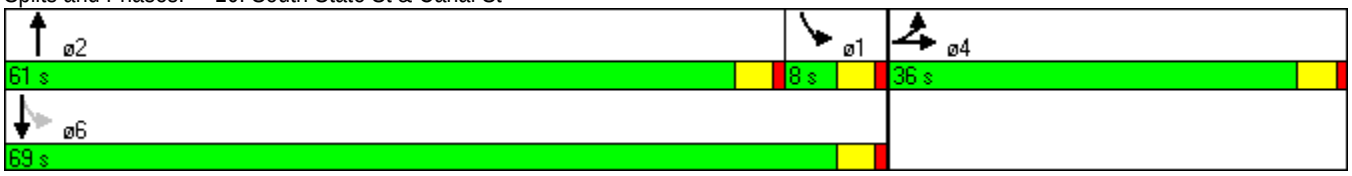


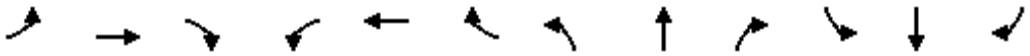
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	369	921	483	0	0	0	0	630	220	293	761	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.948						0.961				
Flt Protected	0.950										0.986	
Satd. Flow (prot)	1593	4339	0	0	0	0	0	2857	0	0	3036	0
Flt Permitted	0.950										0.560	
Satd. Flow (perm)	1593	4339	0	0	0	0	0	2857	0	0	1724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		130						54				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	388	969	508	0	0	0	0	663	232	308	801	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	388	1477	0	0	0	0	0	895	0	0	1109	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	36.0	36.0	0.0	0.0	0.0	0.0	0.0	61.0	0.0	8.0	69.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	0.0%	7.6%	65.7%	0.0%
Maximum Green (s)	32.0	32.0						57.0		4.0	65.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.80	1.05						0.50			1.14dl	
Control Delay	42.1	60.9						11.4			45.4	
Queue Delay	4.9	0.0						1.0			140.4	
Total Delay	47.0	60.9						12.4			185.9	
Queue Length 50th (ft)	207	~358						150			~244	
Queue Length 95th (ft)	m166	m213						198			m172	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1413						1789			1067	
Starvation Cap Reductn	0	0						579			255	
Spillback Cap Reductn	53	0						154			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.90	1.05						0.74			1.37	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

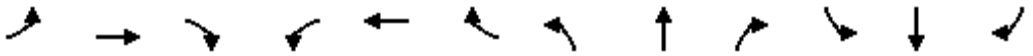




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	369	921	483	0	0	0	0	630	220	293	761	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.95						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.99	
Satd. Flow (prot)	1593	4341						2857			3037	
Flt Permitted	0.95	1.00						1.00			0.56	
Satd. Flow (perm)	1593	4341						2857			1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	388	969	508	0	0	0	0	663	232	308	801	0
RTOR Reduction (vph)	0	90	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	388	1387	0	0	0	0	0	874	0	0	1109	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	32.0	32.0						65.0			65.0	
Effective Green, g (s)	32.0	32.0						65.0			65.0	
Actuated g/C Ratio	0.30	0.30						0.62			0.62	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	485	1323						1769			1067	
v/s Ratio Prot	0.24	c0.32						0.31				
v/s Ratio Perm											c0.64	
v/c Ratio	0.80	1.05						0.49			1.14dl	
Uniform Delay, d1	33.6	36.5						11.0			20.0	
Progression Factor	1.19	1.17						1.00			1.17	
Incremental Delay, d2	0.9	24.0						1.0			21.1	
Delay (s)	40.7	66.9						12.0			44.5	
Level of Service	D	E						B			D	
Approach Delay (s)		61.4			0.0			12.0			44.5	
Approach LOS		E			A			B			D	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

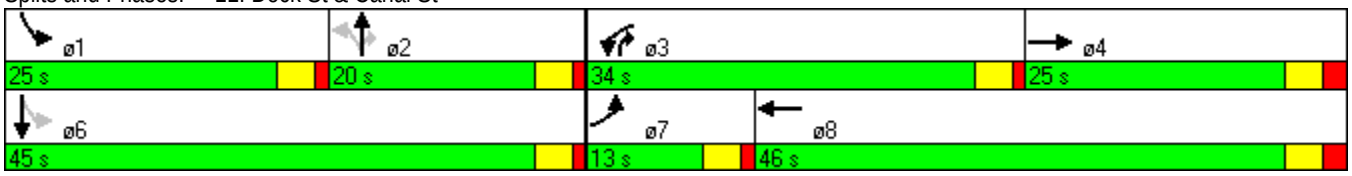


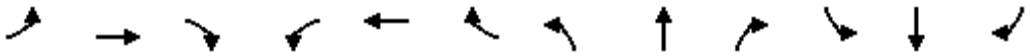
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	276	0	350	615	452	0	359	209	390	706	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936				0.850		0.973	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1540	3079	0	1486	2882	0	0	3079	1378	1540	2996	0
Flt Permitted	0.950			0.950						0.224		
Satd. Flow (perm)	1540	3079	0	1486	2882	0	0	3079	1378	363	2996	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					214				143		30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	48	291	0	368	647	476	0	378	220	411	743	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	291	0	368	1123	0	0	378	220	411	907	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	13.0	25.0	0.0	34.0	46.0	0.0	20.0	20.0	34.0	25.0	45.0	0.0
Total Split (%)	12.5%	24.0%	0.0%	32.7%	44.2%	0.0%	19.2%	19.2%	32.7%	24.0%	43.3%	0.0%
Maximum Green (s)	9.0	20.0		30.0	41.0		16.0	16.0	30.0	21.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.41	0.47		0.91	0.85			0.80	0.31	1.01	0.73	
Control Delay	56.3	39.5		64.4	29.7			56.2	7.2	76.8	29.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	1.8	
Total Delay	56.3	39.5		64.4	29.7			56.2	7.2	76.8	31.2	
Queue Length 50th (ft)	31	90		231	295			129	27	~257	261	
Queue Length 95th (ft)	69	133		#396	#405			#198	73	#448	340	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	133	622		429	1325			474	737	407	1249	
Starvation Cap Reductn	0	0		0	0			0	0	0	189	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.36	0.47		0.86	0.85			0.80	0.30	1.01	0.86	

Intersection Summary	
Area Type:	CBD
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 12 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	276	0	350	615	452	0	359	209	390	706	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2883			3079	1378	1540	2996	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.22	1.00	
Satd. Flow (perm)	1540	3079		1486	2883			3079	1378	364	2996	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	291	0	368	647	476	0	378	220	411	743	164
RTOR Reduction (vph)	0	0	0	0	125	0	0	0	83	0	18	0
Lane Group Flow (vph)	48	291	0	368	998	0	0	378	137	411	889	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	6.8	20.8		28.3	42.3			15.2	43.5	41.9	41.9	
Effective Green, g (s)	6.8	21.8		28.3	43.3			15.2	43.5	41.9	41.9	
Actuated g/C Ratio	0.07	0.21		0.27	0.42			0.15	0.42	0.40	0.40	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	101	645		404	1200			450	629	403	1207	
v/s Ratio Prot	0.03	0.09		c0.25	c0.35			0.12	0.06	c0.22	0.30	
v/s Ratio Perm									0.04	c0.19		
v/c Ratio	0.48	0.45		0.91	0.83			0.84	0.22	1.02	0.74	
Uniform Delay, d1	46.9	35.9		36.6	27.1			43.2	19.4	27.7	26.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.5		24.3	5.1			17.0	0.2	50.0	4.0	
Delay (s)	50.4	36.4		60.9	32.2			60.2	19.5	77.7	30.4	
Level of Service	D	D		E	C			E	B	E	C	
Approach Delay (s)		38.4			39.3			45.2			45.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	405	225	26	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected				0.997		
Satd. Flow (prot)	1863	1583	0	1894	1863	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	1583	0	1894	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	440	245	28	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	440	245	0	504	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	405	225	26	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	440	245	28	476	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked						
vC, conflicting volume			685		973	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			685		973	440
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	100
cM capacity (veh/h)			909		271	617

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	440	245	504	0
Volume Left	0	0	28	0
Volume Right	0	245	0	0
cSH	1700	1700	909	1700
Volume to Capacity	0.26	0.14	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.0	0.0	0.9	0.0
Lane LOS			A	A
Approach Delay (s)	0.0		0.9	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	224	182	165	464	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939					
Flt Protected				0.987		
Satd. Flow (prot)	1749	0	0	1875	0	0
Flt Permitted				0.987		
Satd. Flow (perm)	1749	0	0	1875	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	243	198	179	504	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	441	0	0	683	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	224	182	165	464	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	198	179	504	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.90	
vC, conflicting volume			441		1205	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			441		1174	342
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		100	100
cM capacity (veh/h)			1119		161	700

Direction, Lane #	EB 1	WB 1
Volume Total	441	684
Volume Left	0	179
Volume Right	198	0
cSH	1700	1119
Volume to Capacity	0.26	0.16
Queue Length 95th (ft)	0	14
Control Delay (s)	0.0	3.8
Lane LOS		A
Approach Delay (s)	0.0	3.8
Approach LOS		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	224	0	0	629	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	180	
Travel Time (s)	4.4			6.5	4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	236	0	0	662	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	0	662	0	2
Sign Control	Free			Free	Stop	

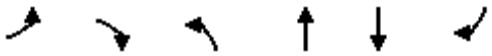
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

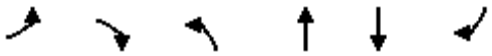
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	224	0	0	629	0	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	236	0	0	662	0	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.89	
vC, conflicting volume			236		898	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			236		825	236
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1331		305	803

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	236	662	2
Volume Left	0	0	0
Volume Right	0	0	2
cSH	1700	1700	803
Volume to Capacity	0.14	0.39	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		



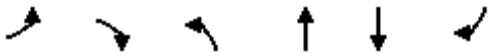
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	53	10	32	693	780	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.978					0.850
Flt Protected	0.960			0.998		
Satd. Flow (prot)	1749	0	0	1859	1863	1583
Flt Permitted	0.960			0.943		
Satd. Flow (perm)	1749	0	0	1757	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	7					180
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	58	11	35	753	848	180
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	0	788	848	180
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	15.0	0.0	90.0	90.0	90.0	90.0
Total Split (%)	14.3%	0.0%	85.7%	85.7%	85.7%	85.7%
Maximum Green (s)	10.0		85.0	85.0	85.0	85.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.41			0.52	0.53	0.13
Control Delay	47.5			4.0	4.0	0.5
Queue Delay	0.0			0.0	3.4	0.5
Total Delay	47.5			4.0	7.3	1.1
Queue Length 50th (ft)	40			121	131	0
Queue Length 95th (ft)	84			188	202	10
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	189			1514	1605	1378
Starvation Cap Reductn	0			0	638	878
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.37			0.52	0.88	0.36

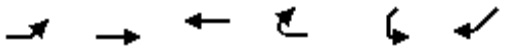
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 85 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	53	10	32	693	780	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1749			1859	1863	1583
Flt Permitted	0.96			0.94	1.00	1.00
Satd. Flow (perm)	1749			1757	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	11	35	753	848	180
RTOR Reduction (vph)	6	0	0	0	0	30
Lane Group Flow (vph)	63	0	0	788	848	150
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	7.3			87.7	87.7	87.7
Effective Green, g (s)	8.3			88.7	88.7	87.7
Actuated g/C Ratio	0.08			0.84	0.84	0.84
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	138			1484	1574	1322
v/s Ratio Prot	c0.04				c0.46	
v/s Ratio Perm				0.45		0.09
v/c Ratio	0.45			0.53	0.54	0.11
Uniform Delay, d1	46.2			2.3	2.3	1.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	2.4			1.4	1.3	0.2
Delay (s)	48.5			3.7	3.6	1.7
Level of Service	D			A	A	A
Approach Delay (s)	48.5			3.7	3.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

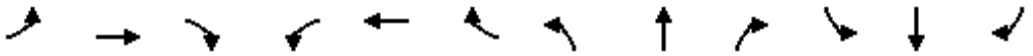


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	743	489	0	0	0	0	292	257	156	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.085		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	152	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			406						18			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	249	808	532	0	0	0	0	317	279	170	650	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	808	532	0	0	0	0	317	279	170	650	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	33.0	33.0	33.0	0.0	0.0	0.0	0.0	72.0	72.0	52.0	52.0	0.0
Total Split (%)	31.4%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%	68.6%	68.6%	49.5%	49.5%	0.0%
Maximum Green (s)	28.0	28.0	28.0							47.0	47.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	44.0	20.0	8.0
Total Split (%)	42%	19%	8%
Maximum Green (s)	39.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.53	0.86	0.74					0.26	0.27	2.50	0.43	
Control Delay	37.9	47.7	15.8					0.3	0.1	735.6	20.9	
Queue Delay	0.0	0.0	0.2					4.7	4.9	0.0	0.0	
Total Delay	37.9	47.7	16.0					5.0	4.9	735.6	20.9	
Queue Length 50th (ft)	143	272	69					3	0	~148	153	
Queue Length 95th (ft)	224	#374	208					m2	m0	#286	201	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	467	935	716					1238	1027	68	1517	
Starvation Cap Reductn	0	0	0					837	669	0	0	
Spillback Cap Reductn	0	0	13					0	0	0	15	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.86	0.76					0.79	0.78	2.50	0.43	

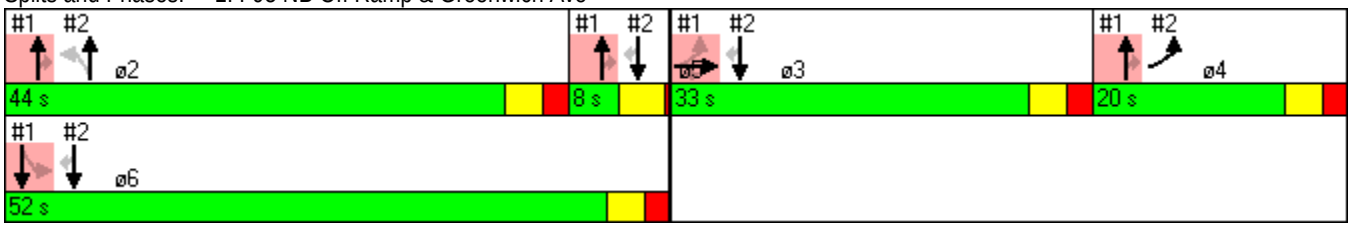
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave

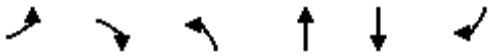


Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

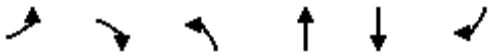
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	743	489	0	0	0	0	292	257	156	598	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	152	3388	
Peak-hour factor, PHF	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)	249	808	532	0	0	0	0	317	279	170	650	0
RTOR Reduction (vph)	0	0	298	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	249	808	234	0	0	0	0	317	273	170	650	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Effective Green, g (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Actuated g/C Ratio	0.27	0.27	0.27					0.65	0.65	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	467	935	418					1256	1036	68	1517	
v/s Ratio Prot		c0.23						0.16			0.19	
v/s Ratio Perm	0.14		0.15						c0.17	c1.12		
v/c Ratio	0.53	0.86	0.56					0.25	0.26	2.50	0.43	
Uniform Delay, d1	32.9	36.7	33.2					7.8	7.9	29.0	19.8	
Progression Factor	1.00	1.00	1.00					0.03	0.00	1.00	1.00	
Incremental Delay, d2	1.5	8.6	2.1					0.0	0.0	716.6	0.2	
Delay (s)	34.4	45.3	35.3					0.3	0.0	745.6	20.1	
Level of Service	C	D	D					A	A	F	C	
Approach Delay (s)		40.2			0.0			0.1			170.5	
Approach LOS		D			A			A			F	

Intersection Summary			
HCM Average Control Delay	67.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	212	58	56	337	775	312			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.968				0.994	0.850			
Flt Protected	0.962			0.993					
Satd. Flow (prot)	3365	0	0	1850	1759	1504			
Flt Permitted	0.962			0.419					
Satd. Flow (perm)	3365	0	0	780	1759	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	29				6	305			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	230	63	61	366	842	339			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	293	0	0	427	876	305			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	44.0	44.0	93.0	93.0	33.0	8.0	52.0
Total Split (%)	19.0%	0.0%	41.9%	41.9%	88.6%	88.6%	31%	8%	50%
Maximum Green (s)	15.0		39.0	39.0			28.0	4.0	47.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.58			1.47	0.65	0.25			
Control Delay	42.9			258.8	6.8	0.4			
Queue Delay	0.0			0.0	0.9	0.8			
Total Delay	42.9			258.8	7.7	1.3			
Queue Length 50th (ft)	86			~396	386	0			
Queue Length 95th (ft)	130			#587	488	m0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	506			290	1342	1219			
Starvation Cap Reductn	0			0	215	633			
Spillback Cap Reductn	0			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.58			1.47	0.78	0.52			

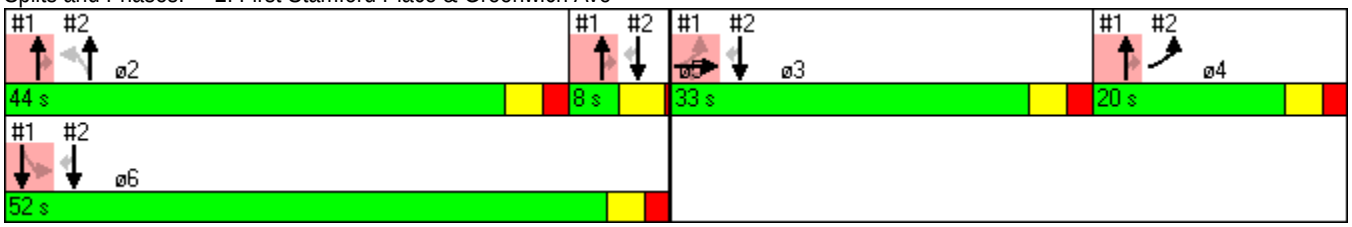
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

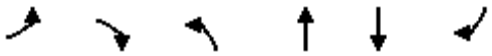
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

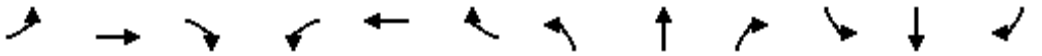
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	212	58	56	337	775	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.97			1.00	0.99	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	3365			1850	1759	1504
Flt Permitted	0.96			0.42	1.00	1.00
Satd. Flow (perm)	3365			781	1759	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	63	61	366	842	339
RTOR Reduction (vph)	25	0	0	0	2	84
Lane Group Flow (vph)	268	0	0	427	874	221
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			39.0	80.0	80.0
Effective Green, g (s)	15.0			39.0	76.0	76.0
Actuated g/C Ratio	0.14			0.37	0.72	0.72
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	481			290	1273	1089
v/s Ratio Prot	c0.08				c0.50	
v/s Ratio Perm				c0.55		0.15
v/c Ratio	0.56			1.47	0.69	0.20
Uniform Delay, d1	41.9			33.0	8.0	4.7
Progression Factor	1.00			1.00	0.77	0.01
Incremental Delay, d2	1.7			230.4	1.4	0.1
Delay (s)	43.6			263.4	7.5	0.1
Level of Service	D			F	A	A
Approach Delay (s)	43.6			263.4	5.6	
Approach LOS	D			F	A	

Intersection Summary			
HCM Average Control Delay	69.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

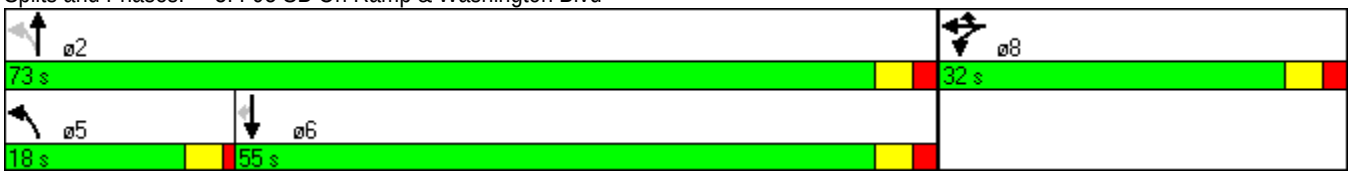


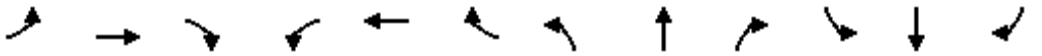
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	313	105	781	302	904	0	0	1013	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.160					
Satd. Flow (perm)	0	0	0	1438	1513	1458	247	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						168						482
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	319	107	797	308	922	0	0	1034	645
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	319	107	797	308	922	0	0	1034	645
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	32.0	32.0	32.0	18.0	73.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	30.5%	30.5%	30.5%	17.1%	69.5%	0.0%	0.0%	52.4%	52.4%
Maximum Green (s)				27.0	27.0	27.0	14.0	68.0			50.0	50.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.86	0.28	1.59	0.95	0.49			0.69	0.70
Control Delay				48.4	40.2	295.4	18.7	8.2			24.6	9.8
Queue Delay				43.9	0.0	0.0	1.0	28.9			520.6	0.0
Total Delay				92.3	40.2	295.4	19.7	37.1			545.3	9.8
Queue Length 50th (ft)				189	60	~650	123	222			277	66
Queue Length 95th (ft)				m151	m47	m#432	m99	m186			354	208
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				370	389	500	325	1901			1488	918
Starvation Cap Reductn				0	0	0	2	1017			0	0
Spillback Cap Reductn				74	0	0	0	0			1008	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				1.08	0.28	1.59	0.95	1.04			2.15	0.70

Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 19 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ 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.

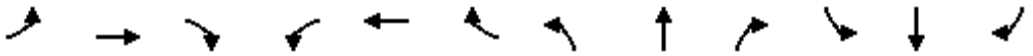
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	313	105	781	302	904	0	0	1013	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.16	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	247	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	319	107	797	308	922	0	0	1034	645
RTOR Reduction (vph)	0	0	0	0	0	125	0	0	0	0	0	252
Lane Group Flow (vph)	0	0	0	319	107	672	308	922	0	0	1034	393
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Effective Green, g (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Actuated g/C Ratio				0.26	0.26	0.26	0.65	0.65			0.48	0.48
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				370	389	375	323	1901			1488	666
v/s Ratio Prot				0.22	0.07	c0.46	c0.13	0.31			0.33	
v/s Ratio Perm							c0.49					0.28
v/c Ratio				0.86	0.28	1.79	0.95	0.49			0.69	0.59
Uniform Delay, d1				37.2	31.2	39.0	20.6	9.5			21.5	20.0
Progression Factor				1.21	1.26	1.29	0.46	0.84			1.00	1.00
Incremental Delay, d2				2.3	0.1	357.6	7.0	0.1			2.7	3.8
Delay (s)				47.1	39.4	408.1	16.6	8.1			24.2	23.8
Level of Service				D	D	F	B	A			C	C
Approach Delay (s)		0.0			281.7			10.2			24.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	96.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	162.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



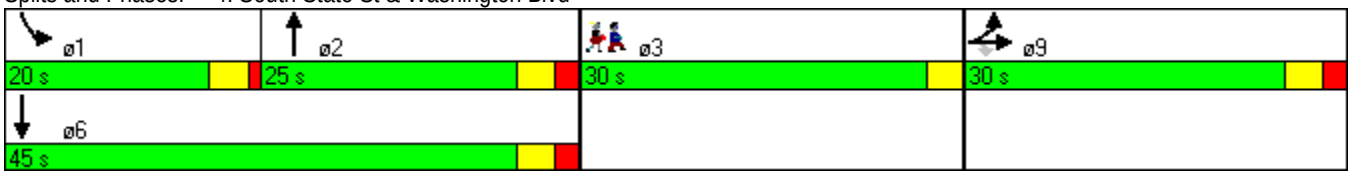
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	437	269	457	0	0	0	0	769	209	381	945	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		0.99		
Frt			0.850					0.968				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3948	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1453	1545	1221	0	0	0	0	3948	0	2732	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			477					58				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	533	328	557	0	0	0	0	938	255	465	1152	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	533	328	557	0	0	0	0	1193	0	465	1152	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	25.0	0.0	20.0	45.0	0.0
Total Split (%)	28.6%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%	23.8%	0.0%	19.0%	42.9%	0.0%
Maximum Green (s)	25.0	25.0	25.0					20.0		16.0	40.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.69	0.41	0.64					1.49		1.11	1.07	
Control Delay	24.6	17.0	6.6					260.7		112.1	78.0	
Queue Delay	0.1	0.0	0.0					177.3		7.6	294.9	
Total Delay	24.7	17.0	6.6					438.0		119.7	372.9	
Queue Length 50th (ft)	256	127	26					~407		~185	~465	
Queue Length 95th (ft)	327	172	66					m#430		m#247	#509	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	769	809	867					799		419	1080	
Starvation Cap Reductn	0	0	0					0		7	415	
Spillback Cap Reductn	13	0	9					167		0	54	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.71	0.41	0.65					1.89		1.13	1.73	

Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 59 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ 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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	437	269	457	0	0	0	0	769	209	381	945	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1263					3948		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1263					3948		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	533	328	557	0	0	0	0	938	255	465	1152	0
RTOR Reduction (vph)	0	0	227	0	0	0	0	47	0	0	0	0
Lane Group Flow (vph)	533	328	330	0	0	0	0	1146	0	465	1152	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Effective Green, g (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Actuated g/C Ratio	0.52	0.52	0.52					0.19		0.15	0.38	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	769	809	662					752		419	1080	
v/s Ratio Prot	c0.36	0.21						c0.29		0.17	c0.41	
v/s Ratio Perm			0.26									
v/c Ratio	0.69	0.41	0.50					1.52		1.11	1.07	
Uniform Delay, d1	18.7	15.1	16.1					42.5		44.5	32.5	
Progression Factor	1.00	1.00	1.00					1.19		0.92	1.05	
Incremental Delay, d2	5.1	1.5	2.7					240.3		72.7	44.3	
Delay (s)	23.8	16.6	18.8					291.0		113.7	78.2	
Level of Service	C	B	B					F		F	E	
Approach Delay (s)		20.2			0.0			291.0			88.4	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	122.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	162.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	89	239	739	93	610	792	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.983				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3015	0	1561	3123	
Flt Permitted	0.950				0.105		
Satd. Flow (perm)	1578	2361	3015	0	173	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		275	14				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	102	275	849	107	701	910	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	102	275	956	0	701	910	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	30.0	39.0	0.0	30.0	69.0	20.0
Total Split (%)	15.2%	28.6%	37.1%	0.0%	28.6%	65.7%	19%
Maximum Green (s)	11.0	26.0	34.0		26.0	64.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.65	0.18	0.97		0.93	0.36	
Control Delay	65.2	1.4	57.5		18.2	1.2	
Queue Delay	0.0	0.7	129.9		55.9	1.6	
Total Delay	65.2	2.2	187.4		74.0	2.9	
Queue Length 50th (ft)	67	0	327		141	17	
Queue Length 95th (ft)	#127	15	#440		m342	m16	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	165	1507	986		756	2514	
Starvation Cap Reductn	0	0	0		133	1363	
Spillback Cap Reductn	0	919	253		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.47	1.30		1.13	0.79	

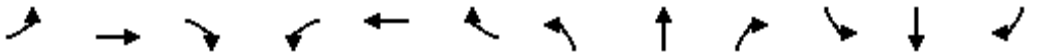
Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 7 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	89	239	739	93	610	792
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3015		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3015		173	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	102	275	849	107	701	910
RTOR Reduction (vph)	0	126	9	0	0	0
Lane Group Flow (vph)	102	149	947	0	701	910
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.5	57.0	34.0		84.5	84.5
Effective Green, g (s)	10.5	57.0	34.0		84.5	84.5
Actuated g/C Ratio	0.10	0.54	0.32		0.80	0.80
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	158	1282	976		754	2513
v/s Ratio Prot	c0.06	0.05	0.31		c0.41	0.29
v/s Ratio Perm		0.01			c0.34	
v/c Ratio	0.65	0.12	0.97		0.93	0.36
Uniform Delay, d1	45.5	11.7	35.0		23.3	2.8
Progression Factor	1.00	1.00	1.00		0.31	0.38
Incremental Delay, d2	8.7	0.0	22.4		8.0	0.1
Delay (s)	54.2	11.8	57.4		15.2	1.2
Level of Service	D	B	E		B	A
Approach Delay (s)	23.2		57.4			7.3
Approach LOS	C		E			A

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

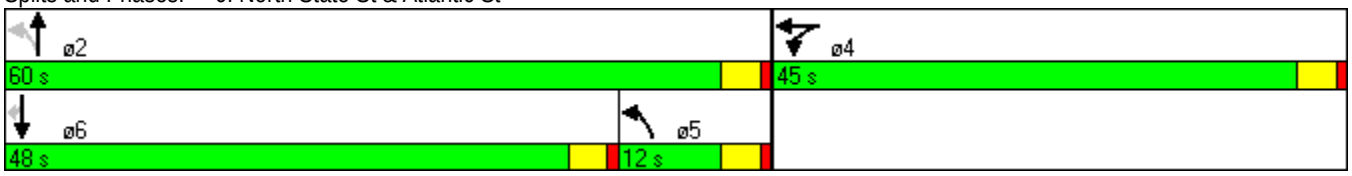


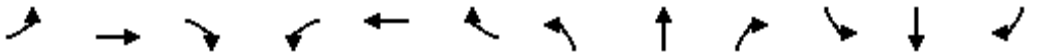
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	426	1899	257	411	890	0	0	477	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.985							0.850
Flt Protected					0.992			0.984				
Satd. Flow (prot)	0	0	0	0	5635	0	0	3030	0	0	3504	1425
Flt Permitted					0.992			0.625				
Satd. Flow (perm)	0	0	0	0	5635	0	0	1924	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					29							31
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	513	2288	310	495	1072	0	0	575	582
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3111	0	0	1567	0	0	575	582
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	12.0	60.0	0.0	0.0	48.0	48.0
Total Split (%)	0.0%	0.0%	0.0%	42.9%	42.9%	0.0%	11.4%	57.1%	0.0%	0.0%	45.7%	45.7%
Maximum Green (s)				41.0	41.0		8.0	56.0			44.0	44.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.40			1.53			0.31	0.75
Control Delay					209.0			266.8			14.2	25.6
Queue Delay					145.6			315.7			0.0	0.0
Total Delay					354.5			582.5			14.2	25.6
Queue Length 50th (ft)					~801			~781			107	276
Queue Length 95th (ft)					m#593			m#554			130	364
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2218			1026			1869	774
Starvation Cap Reductn					0			323			0	0
Spillback Cap Reductn					416			0			10	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.73			2.23			0.31	0.75

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ 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: 6: North State St & Atlantic St

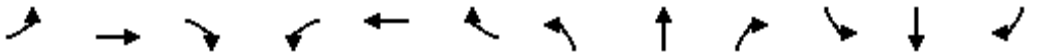




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	426	1899	257	411	890	0	0	477	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					0.99			0.98			1.00	1.00
Satd. Flow (prot)					5634			3031			3504	1425
Flt Permitted					0.99			0.62			1.00	1.00
Satd. Flow (perm)					5634			1923			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	513	2288	310	495	1072	0	0	575	582
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	0	0	0	3093	0	0	1567	0	0	575	568
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					41.0			56.0			56.0	56.0
Effective Green, g (s)					41.0			56.0			56.0	56.0
Actuated g/C Ratio					0.39			0.53			0.53	0.53
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2200			1026			1869	760
v/s Ratio Prot					c0.55						0.16	
v/s Ratio Perm								c0.81				0.40
v/c Ratio					1.41			1.53			0.31	0.75
Uniform Delay, d1					32.0			24.5			13.7	19.0
Progression Factor					0.95			1.48			1.00	1.00
Incremental Delay, d2					183.0			237.7			0.4	6.6
Delay (s)					213.4			274.0			14.1	25.6
Level of Service					F			F			B	C
Approach Delay (s)		0.0			213.4			274.0			19.9	
Approach LOS		A			F			F			B	

Intersection Summary			
HCM Average Control Delay	191.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	126.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

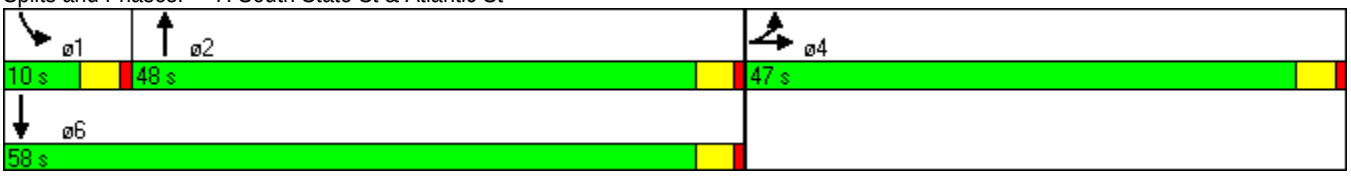


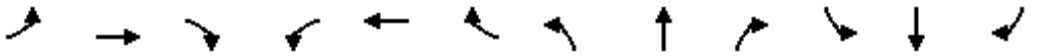
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	900	1304	340	0	0	0	0	401	289	185	718	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.975						0.943				
Flt Protected	0.950	0.990								0.950		
Satd. Flow (prot)	1247	5068	0	0	0	0	0	1739	0	2987	1621	0
Flt Permitted	0.950	0.990								0.950		
Satd. Flow (perm)	1247	5068	0	0	0	0	0	1739	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		58										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1154	1672	436	0	0	0	0	514	371	237	921	0
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	646	2616	0	0	0	0	0	885	0	237	921	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	10.0	58.0	0.0
Total Split (%)	44.8%	44.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45.7%	0.0%	9.5%	55.2%	0.0%
Maximum Green (s)	43.0	43.0						44.0		6.0	54.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.26	1.24						1.21		1.39	1.10	
Control Delay	163.3	138.6						138.2		233.5	82.9	
Queue Delay	551.3	98.3						349.1		0.0	16.8	
Total Delay	714.6	236.9						487.3		233.5	99.7	
Queue Length 50th (ft)	~676	379						~731		~109	~722	
Queue Length 95th (ft)	#761	m220						#771		m#113	m565	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	511	2110						729		171	834	
Starvation Cap Reductn	0	0						189		0	29	
Spillback Cap Reductn	308	317						285		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	3.18	1.46						1.99		1.39	1.14	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

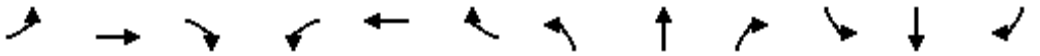




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	900	1304	340	0	0	0	0	401	289	185	718	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.98						0.94		1.00	1.00	
Flt Protected	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5070						1740		2987	1621	
Flt Permitted	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5070						1740		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1154	1672	436	0	0	0	0	514	371	237	921	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	646	2582	0	0	0	0	0	885	0	237	921	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	43.0	43.0						44.0		6.0	54.0	
Effective Green, g (s)	43.0	43.0						44.0		6.0	54.0	
Actuated g/C Ratio	0.41	0.41						0.42		0.06	0.51	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	511	2076						729		171	834	
v/s Ratio Prot	c0.52	0.51						c0.51		c0.08	0.57	
v/s Ratio Perm												
v/c Ratio	1.26	1.24						1.21		1.39	1.10	
Uniform Delay, d1	31.0	31.0						30.5		49.5	25.5	
Progression Factor	1.00	1.07						1.00		1.05	0.91	
Incremental Delay, d2	133.9	113.9						108.7		194.3	58.2	
Delay (s)	164.9	147.2						139.2		246.2	81.4	
Level of Service	F	F						F		F	F	
Approach Delay (s)		150.7			0.0			139.2			115.1	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	141.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



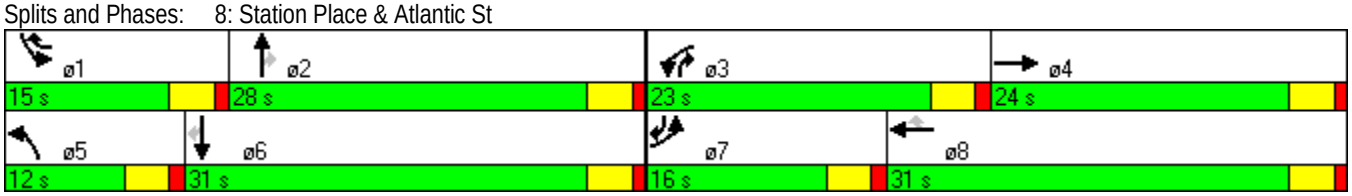
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	100	59	226	212	130	69	496	148	86	625	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.945				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				141			161			296
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	70	109	64	246	230	141	75	539	161	93	679	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	173	0	246	230	141	75	539	161	93	679	345
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	16.0	24.0	0.0	23.0	31.0	15.0	12.0	28.0	23.0	15.0	31.0	16.0
Total Split (%)	17.8%	26.7%	0.0%	25.6%	34.4%	16.7%	13.3%	31.1%	25.6%	16.7%	34.4%	17.8%
Maximum Green (s)	12.0	20.0		19.0	27.0	11.0	8.0	24.0	19.0	11.0	27.0	12.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

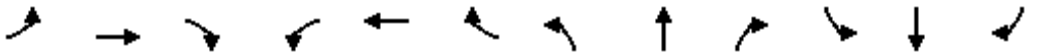
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.45	0.45		0.83	0.45	0.20	0.56	0.56	0.19	0.57	0.64	0.42
Control Delay	46.6	29.3		57.8	28.4	3.2	55.9	30.3	2.5	51.7	29.7	4.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.9	0.4
Total Delay	46.6	29.3		57.8	28.4	3.2	55.9	31.1	2.5	51.7	30.5	5.1
Queue Length 50th (ft)	38	70		132	102	0	42	141	0	50	181	15
Queue Length 95th (ft)	78	132		#246	176	31	#94	197	29	100	246	64
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	202	382		325	508	735	142	955	863	188	1060	861
Starvation Cap Reductn	0	0		0	0	0	0	175	0	0	155	193
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.45		0.76	0.45	0.19	0.53	0.69	0.19	0.49	0.75	0.52

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

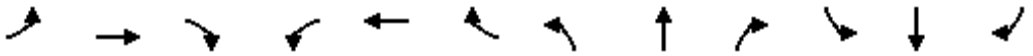
Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	100	59	226	212	130	69	496	148	86	625	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1615		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1615		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	70	109	64	246	230	141	75	539	161	93	679	345
RTOR Reduction (vph)	0	23	0	0	0	82	0	0	82	0	0	166
Lane Group Flow (vph)	70	150	0	246	230	59	75	539	79	93	679	179
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	9.2	20.0		17.4	28.2	37.8	6.4	27.0	44.4	9.6	30.2	39.4
Effective Green, g (s)	9.2	20.0		17.4	28.2	37.8	6.4	27.0	44.4	9.6	30.2	39.4
Actuated g/C Ratio	0.10	0.22		0.19	0.31	0.42	0.07	0.30	0.49	0.11	0.34	0.44
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	359		298	508	640	113	956	766	164	1033	665
v/s Ratio Prot	0.05	0.09		c0.16	c0.14	0.01	0.05	0.17	0.02	c0.06	c0.22	0.03
v/s Ratio Perm						0.03			0.04			0.10
v/c Ratio	0.45	0.42		0.83	0.45	0.09	0.66	0.56	0.10	0.57	0.66	0.27
Uniform Delay, d1	38.0	30.0		34.8	24.7	15.8	40.8	26.5	12.2	38.2	25.5	16.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.8		16.8	0.6	0.1	13.7	2.4	0.1	4.4	3.3	0.2
Delay (s)	40.1	30.8		51.6	25.4	15.8	54.5	28.9	12.2	42.7	28.8	16.3
Level of Service	D	C		D	C	B	D	C	B	D	C	B
Approach Delay (s)		33.5			33.6			27.9			26.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

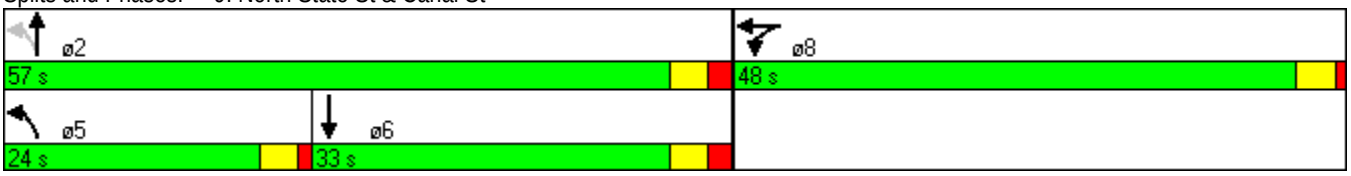


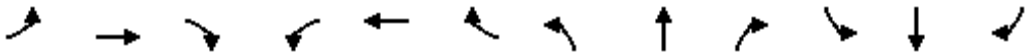
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	331	2086	261	417	580	0	0	669	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.985						0.968	
Flt Protected					0.994		0.950					
Satd. Flow (prot)	0	0	0	0	5458	0	1540	3079	0	0	2981	0
Flt Permitted					0.994		0.125					
Satd. Flow (perm)	0	0	0	0	5458	0	203	3079	0	0	2981	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30						28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	348	2196	275	439	611	0	0	704	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2819	0	439	611	0	0	897	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	24.0	57.0	0.0	0.0	33.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	22.9%	54.3%	0.0%	0.0%	31.4%	0.0%
Maximum Green (s)				44.0	44.0		20.0	52.0			28.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.22		1.23	0.40			1.10	
Control Delay					133.5		144.1	16.6			98.7	
Queue Delay					131.3		88.3	1.6			18.3	
Total Delay					264.8		232.4	18.3			117.0	
Queue Length 50th (ft)					~680		~321	136			~354	
Queue Length 95th (ft)					#754		m#495	180			#482	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					2305		357	1525			815	
Starvation Cap Reductn					0		50	703			0	
Spillback Cap Reductn					445		0	0			31	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.52		1.43	0.74			1.14	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St

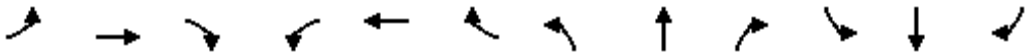




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	331	2086	261	417	580	0	0	669	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5460		1540	3079			2980	
Flt Permitted					0.99		0.12	1.00			1.00	
Satd. Flow (perm)					5460		203	3079			2980	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	348	2196	275	439	611	0	0	704	193
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	0	0	21	0
Lane Group Flow (vph)	0	0	0	0	2802	0	439	611	0	0	876	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					44.0		52.0	52.0			28.0	
Effective Green, g (s)					44.0		52.0	52.0			28.0	
Actuated g/C Ratio					0.42		0.50	0.50			0.27	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2288		355	1525			795	
v/s Ratio Prot					c0.51		c0.24	0.20			0.29	
v/s Ratio Perm							c0.38					
v/c Ratio					1.22		1.24	0.40			1.10	
Uniform Delay, d1					30.5		31.1	16.7			38.5	
Progression Factor					1.00		0.68	0.95			1.00	
Incremental Delay, d2					105.1		124.5	0.6			63.7	
Delay (s)					135.6		145.5	16.4			102.2	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			135.6			70.4			102.2	
Approach LOS		A			F			E			F	

Intersection Summary			
HCM Average Control Delay	115.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

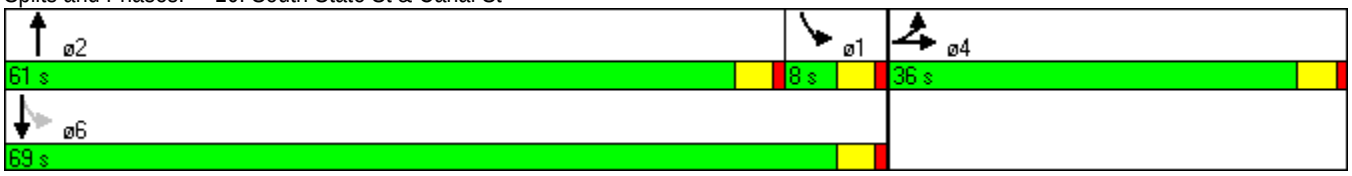


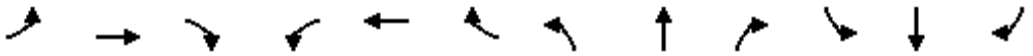
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	369	921	483	0	0	0	0	628	220	293	737	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.948						0.961				
Flt Protected	0.950										0.986	
Satd. Flow (prot)	1593	4339	0	0	0	0	0	2857	0	0	3036	0
Flt Permitted	0.950										0.559	
Satd. Flow (perm)	1593	4339	0	0	0	0	0	2857	0	0	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		130						53				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	388	969	508	0	0	0	0	661	232	308	776	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	388	1477	0	0	0	0	0	893	0	0	1084	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	36.0	36.0	0.0	0.0	0.0	0.0	0.0	61.0	0.0	8.0	69.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	0.0%	7.6%	65.7%	0.0%
Maximum Green (s)	32.0	32.0						57.0		4.0	65.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.80	1.05						0.50			1.14dl	
Control Delay	42.1	60.9						11.4			37.3	
Queue Delay	4.9	0.0						0.9			134.3	
Total Delay	47.1	60.9						12.4			171.6	
Queue Length 50th (ft)	207	~358						150			~226	
Queue Length 95th (ft)	m166	m213						198			m170	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1413						1789			1065	
Starvation Cap Reductn	0	0						579			254	
Spillback Cap Reductn	53	0						154			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.90	1.05						0.74			1.34	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

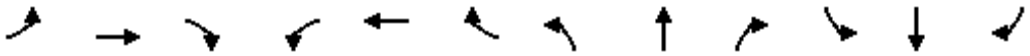




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	369	921	483	0	0	0	0	628	220	293	737	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.95						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.99	
Satd. Flow (prot)	1593	4341						2857			3036	
Flt Permitted	0.95	1.00						1.00			0.56	
Satd. Flow (perm)	1593	4341						2857			1720	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	388	969	508	0	0	0	0	661	232	308	776	0
RTOR Reduction (vph)	0	90	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	388	1387	0	0	0	0	0	873	0	0	1084	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	32.0	32.0						65.0			65.0	
Effective Green, g (s)	32.0	32.0						65.0			65.0	
Actuated g/C Ratio	0.30	0.30						0.62			0.62	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	485	1323						1769			1065	
v/s Ratio Prot	0.24	c0.32						0.31				
v/s Ratio Perm											c0.63	
v/c Ratio	0.80	1.05						0.49			1.14dl	
Uniform Delay, d1	33.6	36.5						11.0			20.0	
Progression Factor	1.19	1.17						1.00			1.15	
Incremental Delay, d2	0.9	24.0						1.0			13.3	
Delay (s)	40.7	66.9						12.0			36.3	
Level of Service	D	E						B			D	
Approach Delay (s)		61.5			0.0			12.0			36.3	
Approach LOS		E			A			B			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

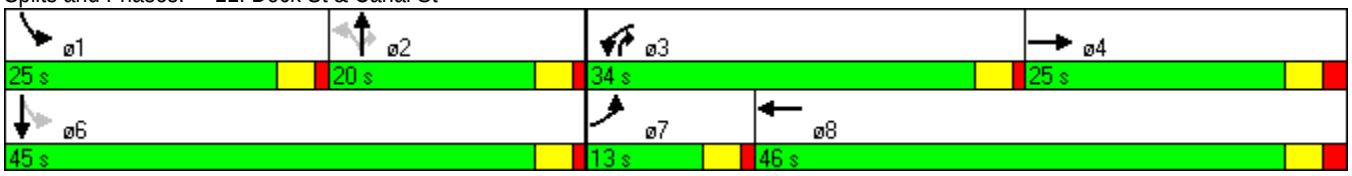


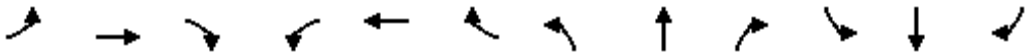
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	275	0	350	606	452	0	359	209	390	706	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936				0.850		0.976	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1540	3079	0	1486	2882	0	0	3079	1378	1540	3005	0
Flt Permitted	0.950			0.950						0.217		
Satd. Flow (perm)	1540	3079	0	1486	2882	0	0	3079	1378	352	3005	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					218				143		24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	289	0	368	638	476	0	378	220	411	743	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	289	0	368	1114	0	0	378	220	411	882	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	13.0	25.0	0.0	34.0	46.0	0.0	20.0	20.0	34.0	25.0	45.0	0.0
Total Split (%)	12.5%	24.0%	0.0%	32.7%	44.2%	0.0%	19.2%	19.2%	32.7%	24.0%	43.3%	0.0%
Maximum Green (s)	9.0	20.0		30.0	41.0		16.0	16.0	30.0	21.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.40	0.46		0.91	0.80			0.80	0.31	1.01	0.71	
Control Delay	55.7	39.4		64.4	26.3			56.2	7.2	78.4	28.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	1.5	
Total Delay	55.7	39.4		64.4	26.3			56.2	7.2	78.4	30.4	
Queue Length 50th (ft)	29	90		231	288			129	27	~260	252	
Queue Length 95th (ft)	67	132		#396	390			#198	73	#451	328	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	133	622		429	1385			474	737	405	1249	
Starvation Cap Reductn	0	0		0	0			0	0	0	195	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.35	0.46		0.86	0.80			0.80	0.30	1.01	0.84	

Intersection Summary	
Area Type:	CBD
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 12 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	275	0	350	606	452	0	359	209	390	706	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2882			3079	1378	1540	3006	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.22	1.00	
Satd. Flow (perm)	1540	3079		1486	2882			3079	1378	352	3006	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	289	0	368	638	476	0	378	220	411	743	139
RTOR Reduction (vph)	0	0	0	0	122	0	0	0	84	0	15	0
Lane Group Flow (vph)	46	289	0	368	992	0	0	378	136	411	867	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	5.3	21.6		28.3	44.6			14.4	42.7	41.1	41.1	
Effective Green, g (s)	5.3	22.6		28.3	45.6			14.4	42.7	41.1	41.1	
Actuated g/C Ratio	0.05	0.22		0.27	0.44			0.14	0.41	0.40	0.40	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	78	669		404	1264			426	619	398	1188	
v/s Ratio Prot	0.03	0.09		c0.25	c0.34			0.12	0.06	c0.23	0.29	
v/s Ratio Perm									0.04	c0.18		
v/c Ratio	0.59	0.43		0.91	0.78			0.89	0.22	1.03	0.73	
Uniform Delay, d1	48.3	35.2		36.6	25.0			44.0	19.9	28.4	26.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.9	0.4		24.3	3.3			22.9	0.2	53.8	4.0	
Delay (s)	59.2	35.6		60.9	28.3			66.9	20.0	82.2	30.7	
Level of Service	E	D		E	C			E	C	F	C	
Approach Delay (s)		38.8			36.4			49.7			47.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	393	210	20	438	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected				0.998		
Satd. Flow (prot)	1863	1583	0	1896	1863	0
Flt Permitted				0.998		
Satd. Flow (perm)	1863	1583	0	1896	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	427	228	22	476	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	228	0	498	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	393	210	20	438	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	427	228	22	476	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked						
vC, conflicting volume			655		947	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			655		947	427
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			932		283	627

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	427	228	498	0
Volume Left	0	0	22	0
Volume Right	0	228	0	0
cSH	1700	1700	932	1700
Volume to Capacity	0.25	0.13	0.02	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	0.0	0.0	0.7	0.0
Lane LOS			A	A
Approach Delay (s)	0.0		0.7	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	223	170	140	458	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.942					
Flt Protected				0.988		
Satd. Flow (prot)	1755	0	0	1877	0	0
Flt Permitted				0.988		
Satd. Flow (perm)	1755	0	0	1877	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	242	185	152	498	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	0	0	650	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	223	170	140	458	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	242	185	152	498	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.91	
vC, conflicting volume			427		1137	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			427		1103	335
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		100	100
cM capacity (veh/h)			1132		185	707

Direction, Lane #	EB 1	WB 1
Volume Total	427	650
Volume Left	0	152
Volume Right	185	0
cSH	1700	1132
Volume to Capacity	0.25	0.13
Queue Length 95th (ft)	0	12
Control Delay (s)	0.0	3.3
Lane LOS		A
Approach Delay (s)	0.0	3.3
Approach LOS		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	223	0	0	598	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	180	
Travel Time (s)	4.4			6.5	4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	235	0	0	629	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	0	0	629	0	0
Sign Control	Free			Free	Stop	

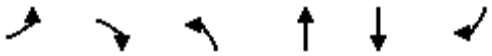
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

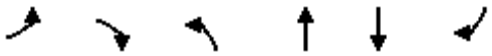
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	223	0	0	598	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	235	0	0	629	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.90	
vC, conflicting volume			235		864	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			235		795	235
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1333		322	804

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	235	629	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.14	0.37	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



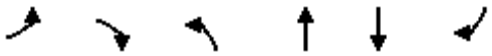
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	10	30	693	780	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.977					0.850
Flt Protected	0.960			0.998		
Satd. Flow (prot)	1747	0	0	1859	1863	1583
Flt Permitted	0.960			0.947		
Satd. Flow (perm)	1747	0	0	1764	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8					141
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	54	11	33	753	848	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	0	786	848	141
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	15.0	0.0	90.0	90.0	90.0	90.0
Total Split (%)	14.3%	0.0%	85.7%	85.7%	85.7%	85.7%
Maximum Green (s)	10.0		85.0	85.0	85.0	85.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.39			0.52	0.53	0.10
Control Delay	46.5			3.9	4.0	0.5
Queue Delay	0.0			0.0	3.4	0.0
Total Delay	46.5			3.9	7.3	0.5
Queue Length 50th (ft)	37			117	128	0
Queue Length 95th (ft)	79			186	202	9
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	190			1522	1607	1374
Starvation Cap Reductn	0			0	640	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.34			0.52	0.88	0.10

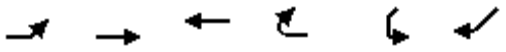
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 85 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	10	30	693	780	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1748			1859	1863	1583
Flt Permitted	0.96			0.95	1.00	1.00
Satd. Flow (perm)	1748			1764	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	11	33	753	848	141
RTOR Reduction (vph)	7	0	0	0	0	23
Lane Group Flow (vph)	58	0	0	786	848	118
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	7.2			87.8	87.8	87.8
Effective Green, g (s)	8.2			88.8	88.8	87.8
Actuated g/C Ratio	0.08			0.85	0.85	0.84
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	137			1492	1576	1324
v/s Ratio Prot	c0.03				c0.46	
v/s Ratio Perm				0.45		0.07
v/c Ratio	0.42			0.53	0.54	0.09
Uniform Delay, d1	46.1			2.3	2.3	1.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	2.1			1.3	1.3	0.1
Delay (s)	48.2			3.6	3.6	1.7
Level of Service	D			A	A	A
Approach Delay (s)	48.2			3.6	3.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

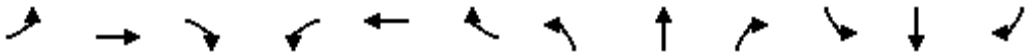


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	540	182	0	0	0	0	415	522	53	326	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.066		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	118	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198						11			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	170	587	198	0	0	0	0	451	567	58	354	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	587	198	0	0	0	0	451	567	58	354	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	25.0	25.0	25.0	0.0	0.0	0.0	0.0	90.0	90.0	70.0	70.0	0.0
Total Split (%)	21.7%	21.7%	21.7%	0.0%	0.0%	0.0%	0.0%	78.3%	78.3%	60.9%	60.9%	0.0%
Maximum Green (s)	20.0	20.0	20.0							65.0	65.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	62.0	20.0	8.0
Total Split (%)	54%	17%	7%
Maximum Green (s)	57.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

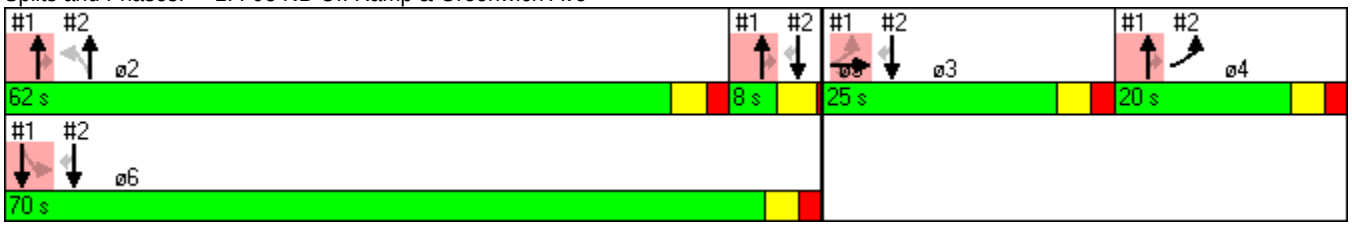
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.53	0.92	0.44					0.32	0.49	0.89	0.19	
Control Delay	49.7	67.2	9.2					0.4	1.3	115.1	12.8	
Queue Delay	0.0	0.0	0.0					2.7	2.7	0.0	0.0	
Total Delay	49.7	67.2	9.2					3.0	4.0	115.1	12.8	
Queue Length 50th (ft)	116	229	0					1	9	35	63	
Queue Length 95th (ft)	190	#344	64					m1	m29	#126	88	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	318	636	446					1453	1201	70	1997	
Starvation Cap Reductn	0	0	0					860	498	0	0	
Spillback Cap Reductn	0	0	1					0	0	0	25	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.92	0.44					0.76	0.81	0.83	0.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 110.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

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

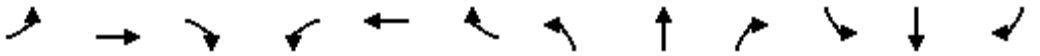
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave



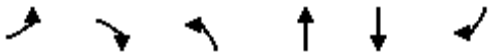
Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal 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

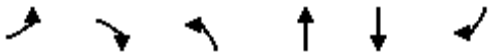


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	540	182	0	0	0	0	415	522	53	326	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.07	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	118	3388	
Peak-hour factor, PHF	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)	170	587	198	0	0	0	0	451	567	58	354	0
RTOR Reduction (vph)	0	0	162	0	0	0	0	0	3	0	0	0
Lane Group Flow (vph)	170	587	36	0	0	0	0	451	564	58	354	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	20.1	20.1	20.1					81.8	81.8	60.7	60.7	
Effective Green, g (s)	20.1	20.1	20.1					81.8	81.8	60.7	60.7	
Actuated g/C Ratio	0.18	0.18	0.18					0.74	0.74	0.55	0.55	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	318	635	284					1431	1180	65	1854	
v/s Ratio Prot		c0.17						0.23			0.10	
v/s Ratio Perm	0.10		0.02						c0.35	c0.49		
v/c Ratio	0.53	0.92	0.13					0.32	0.48	0.89	0.19	
Uniform Delay, d1	41.2	44.7	38.0					5.0	5.9	22.2	12.7	
Progression Factor	1.00	1.00	1.00					0.01	0.09	1.00	1.00	
Incremental Delay, d2	2.2	19.5	0.3					0.1	0.2	75.6	0.1	
Delay (s)	43.4	64.2	38.3					0.1	0.7	97.8	12.7	
Level of Service	D	E	D					A	A	F	B	
Approach Delay (s)		55.1			0.0			0.4			24.7	
Approach LOS		E			A			A			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



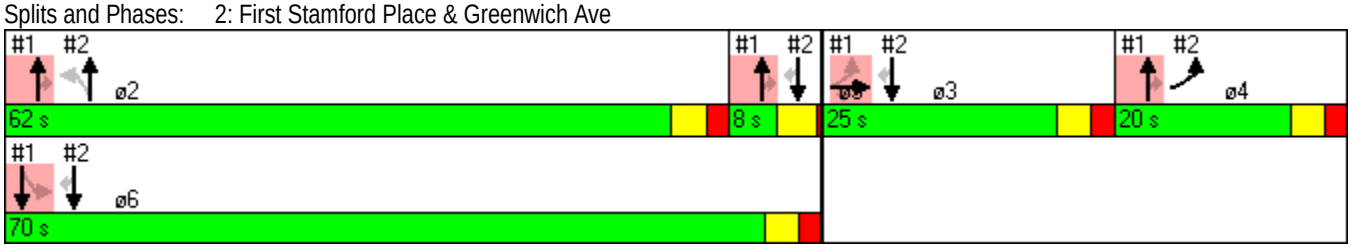
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	382	64	33	555	381	74			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.978				0.997	0.850			
Flt Protected	0.959			0.997					
Satd. Flow (prot)	3389	0	0	1857	1764	1504			
Flt Permitted	0.959			0.956					
Satd. Flow (perm)	3389	0	0	1781	1764	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	14				3	72			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	415	70	36	603	414	80			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	485	0	0	639	422	72			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	62.0	62.0	103.0	103.0	25.0	8.0	70.0
Total Split (%)	17.4%	0.0%	53.9%	53.9%	89.6%	89.6%	22%	7%	61%
Maximum Green (s)	15.0		57.0	57.0			20.0	4.0	65.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0

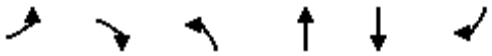


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	1.03			0.85	0.31	0.06			
Control Delay	94.9			39.8	2.2	0.1			
Queue Delay	4.1			0.0	0.5	1.5			
Total Delay	99.0			39.8	2.7	1.5			
Queue Length 50th (ft)	~200			407	22	0			
Queue Length 95th (ft)	#308			507	27	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	473			921	1365	1180			
Starvation Cap Reductn	0			0	554	979			
Spillback Cap Reductn	6			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	1.04			0.69	0.52	0.36			

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 110.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

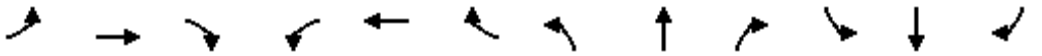
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	382	64	33	555	381	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3390			1858	1765	1504
Flt Permitted	0.96			0.96	1.00	1.00
Satd. Flow (perm)	3390			1781	1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	415	70	36	603	414	80
RTOR Reduction (vph)	12	0	0	0	1	19
Lane Group Flow (vph)	473	0	0	639	421	53
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.1			46.9	85.8	85.8
Effective Green, g (s)	15.1			46.9	81.8	81.8
Actuated g/C Ratio	0.14			0.42	0.74	0.74
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	462			753	1302	1109
v/s Ratio Prot	c0.14				c0.24	
v/s Ratio Perm				c0.36		0.04
v/c Ratio	1.02			0.85	0.32	0.05
Uniform Delay, d1	47.9			28.8	5.0	4.0
Progression Factor	1.00			1.00	0.43	0.00
Incremental Delay, d2	48.0			9.0	0.2	0.0
Delay (s)	95.9			37.8	2.3	0.0
Level of Service	F			D	A	A
Approach Delay (s)	95.9			37.8	2.0	
Approach LOS	F			D	A	

Intersection Summary			
HCM Average Control Delay	44.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

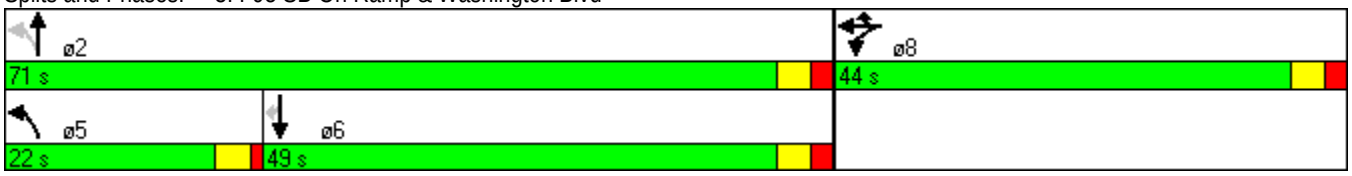


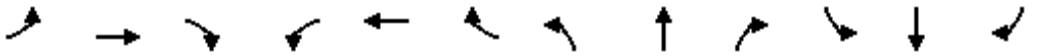
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	156	283	685	434	1260	0	0	1224	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.083					
Satd. Flow (perm)	0	0	0	1438	1513	1458	128	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						54						264
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	159	289	699	443	1286	0	0	1249	661
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	159	289	699	443	1286	0	0	1249	661
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	44.0	44.0	44.0	22.0	71.0	0.0	0.0	49.0	49.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	38.3%	19.1%	61.7%	0.0%	0.0%	42.6%	42.6%
Maximum Green (s)				39.0	39.0	39.0	18.0	66.0			44.0	44.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.33	0.56	1.32	1.56	0.76			1.05	0.95
Control Delay				39.7	43.5	182.0	288.4	32.2			73.9	44.8
Queue Delay				674.5	0.0	0.0	187.7	292.6			227.4	0.0
Total Delay				714.2	43.5	182.0	476.0	324.8			301.2	44.8
Queue Length 50th (ft)				100	193	~634	~434	326			~528	319
Queue Length 95th (ft)				m94	m180	m#575	m#229	m128			#665	#581
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				488	513	530	284	1684			1195	698
Starvation Cap Reductn				0	0	0	60	904			0	0
Spillback Cap Reductn				488	0	0	0	0			396	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				159.00	0.56	1.32	1.98	1.65			1.56	0.95

Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ 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.

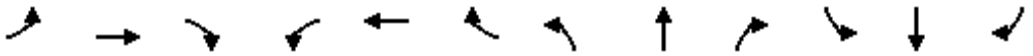
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	156	283	685	434	1260	0	0	1224	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.08	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	129	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	159	289	699	443	1286	0	0	1249	661
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	163
Lane Group Flow (vph)	0	0	0	159	289	663	443	1286	0	0	1249	498
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Effective Green, g (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Actuated g/C Ratio				0.34	0.34	0.34	0.57	0.57			0.38	0.38
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				488	513	494	284	1684			1195	535
v/s Ratio Prot				0.11	0.19	c0.46	c0.24	0.44			0.40	
v/s Ratio Perm							c0.65					0.36
v/c Ratio				0.33	0.56	1.34	1.56	0.76			1.05	0.93
Uniform Delay, d1				28.2	31.0	38.0	36.8	18.6			35.5	34.0
Progression Factor				1.37	1.36	1.34	1.56	1.67			1.00	1.00
Incremental Delay, d2				0.1	0.2	155.5	253.5	0.3			38.7	25.1
Delay (s)				38.8	42.3	206.6	310.9	31.4			74.2	59.1
Level of Service				D	D	F	F	C			E	E
Approach Delay (s)		0.0			141.9			103.0			69.0	
Approach LOS		A			F			F			E	

Intersection Summary			
HCM Average Control Delay	98.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	168.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



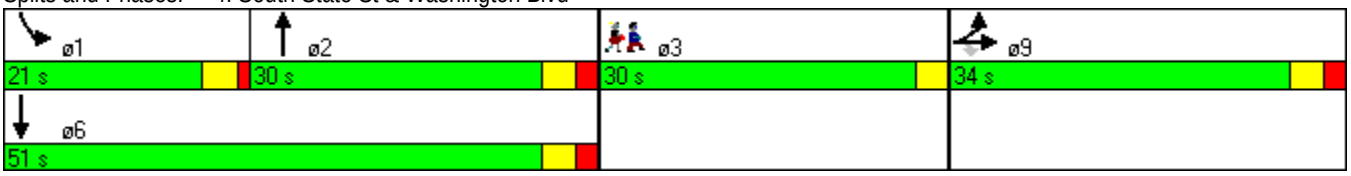
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	594	229	0	0	0	0	1279	261	556	824	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					1.00		1.00		
Frt			0.850					0.975				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3983	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1454	1545	1225	0	0	0	0	3983	0	2742	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177					34				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	506	724	279	0	0	0	0	1560	318	678	1005	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	506	724	279	0	0	0	0	1878	0	678	1005	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	34.0	34.0	34.0	0.0	0.0	0.0	0.0	30.0	0.0	21.0	51.0	0.0
Total Split (%)	29.6%	29.6%	29.6%	0.0%	0.0%	0.0%	0.0%	26.1%	0.0%	18.3%	44.3%	0.0%
Maximum Green (s)	29.0	29.0	29.0					25.0		17.0	46.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	26%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.67	0.91	0.39					2.11		1.67	0.89	
Control Delay	26.3	43.5	7.7					523.1		345.0	22.7	
Queue Delay	317.0	0.0	0.0					105.0		28.8	41.8	
Total Delay	343.3	43.5	7.7					628.2		373.8	64.4	
Queue Length 50th (ft)	268	473	39					~810		~370	122	
Queue Length 95th (ft)	338	#579	77					#795		m#368	m120	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	753	793	715					892		406	1134	
Starvation Cap Reductn	0	0	0					23		15	209	
Spillback Cap Reductn	455	0	11					89		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.70	0.91	0.40					2.34		1.73	1.09	

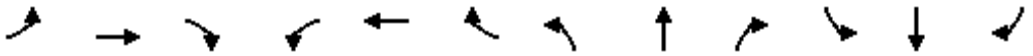
Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	594	229	0	0	0	0	1279	261	556	824	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1262					3981		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1262					3981		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	506	724	279	0	0	0	0	1560	318	678	1005	0
RTOR Reduction (vph)	0	0	86	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	506	724	193	0	0	0	0	1851	0	678	1005	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Effective Green, g (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Actuated g/C Ratio	0.51	0.51	0.51					0.22		0.15	0.40	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	753	793	647					865		406	1134	
v/s Ratio Prot	0.34	c0.47						c0.47		c0.25	0.35	
v/s Ratio Perm			0.15									
v/c Ratio	0.67	0.91	0.30					2.14		1.67	0.89	
Uniform Delay, d1	20.8	25.6	16.1					45.0		49.0	32.1	
Progression Factor	1.00	1.00	1.00					0.80		1.31	0.49	
Incremental Delay, d2	4.7	16.7	1.2					516.1		307.6	6.2	
Delay (s)	25.6	42.3	17.3					552.1		371.9	21.8	
Level of Service	C	D	B					F		F	C	
Approach Delay (s)		32.1			0.0			552.1			162.8	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	268.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	168.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	90	419	1120	150	203	850	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.982				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3012	0	1561	3123	
Flt Permitted	0.950				0.111		
Satd. Flow (perm)	1578	2361	3012	0	182	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		482	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	103	482	1287	172	233	977	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	103	482	1459	0	233	977	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	23.0	56.0	0.0	23.0	79.0	20.0
Total Split (%)	13.9%	20.0%	48.7%	0.0%	20.0%	68.7%	17%
Maximum Green (s)	11.0	19.0	51.0		19.0	74.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.71	0.47	0.76		0.65	0.38	
Control Delay	73.6	9.8	19.1		31.2	2.9	
Queue Delay	0.0	0.3	510.5		0.7	0.6	
Total Delay	73.6	10.2	529.6		31.9	3.5	
Queue Length 50th (ft)	75	26	367		118	67	
Queue Length 95th (ft)	#149	68	526		m152	85	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	151	1073	1925		397	2564	
Starvation Cap Reductn	0	0	0		35	1087	
Spillback Cap Reductn	0	198	1241		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.68	0.55	2.13		0.64	0.66	

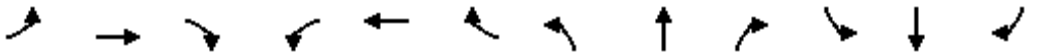
Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	90	419	1120	150	203	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3013		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3013		182	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	103	482	1287	172	233	977
RTOR Reduction (vph)	0	366	6	0	0	0
Lane Group Flow (vph)	103	116	1453	0	233	977
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.6	27.7	73.3		94.4	94.4
Effective Green, g (s)	10.6	27.7	73.3		94.4	94.4
Actuated g/C Ratio	0.09	0.24	0.64		0.82	0.82
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	145	569	1920		354	2564
v/s Ratio Prot	c0.07	0.03	c0.48		c0.10	0.31
v/s Ratio Perm		0.02			0.44	
v/c Ratio	0.71	0.20	0.76		0.66	0.38
Uniform Delay, d1	50.7	34.8	14.6		19.6	2.7
Progression Factor	0.94	3.41	1.00		1.97	0.96
Incremental Delay, d2	15.0	0.2	2.8		2.7	0.3
Delay (s)	62.7	119.2	17.5		41.1	2.8
Level of Service	E	F	B		D	A
Approach Delay (s)	109.2		17.5			10.2
Approach LOS	F		B			B

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

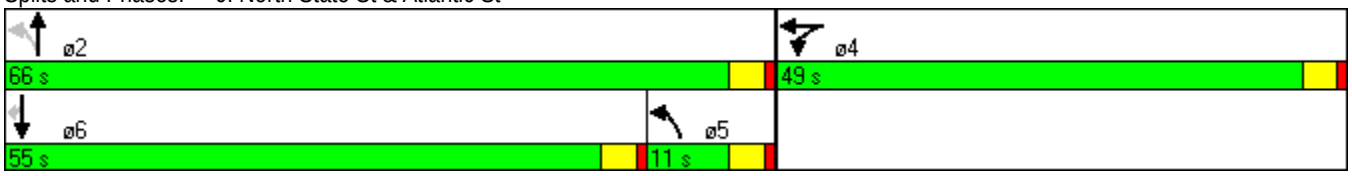


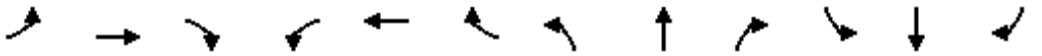
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	235	1577	278	224	810	0	0	534	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.980							0.850
Flt Protected					0.994			0.989				
Satd. Flow (prot)	0	0	0	0	5618	0	0	3045	0	0	3504	1425
Flt Permitted					0.994			0.639				
Satd. Flow (perm)	0	0	0	0	5618	0	0	1968	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					40							58
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	283	1900	335	270	976	0	0	643	736
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2518	0	0	1246	0	0	643	736
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	11.0	66.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	42.6%	42.6%	0.0%	9.6%	57.4%	0.0%	0.0%	47.8%	47.8%
Maximum Green (s)				45.0	45.0		7.0	62.0			51.0	51.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.13			1.17			0.34	0.93
Control Delay					88.1			104.6			15.6	41.9
Queue Delay					63.3			304.4			0.0	0.0
Total Delay					151.3			409.0			15.6	41.9
Queue Length 50th (ft)					~607			~593			135	453
Queue Length 95th (ft)					m#340			m213			157	#628
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2223			1061			1889	795
Starvation Cap Reductn					0			389			0	0
Spillback Cap Reductn					248			0			60	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.27			1.85			0.35	0.93

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ 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: 6: North State St & Atlantic St

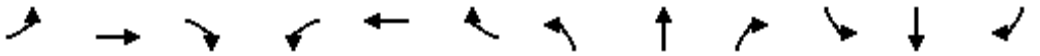




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	235	1577	278	224	810	0	0	534	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.99			1.00	1.00
Satd. Flow (prot)					5620			3046			3504	1425
Flt Permitted					0.99			0.64			1.00	1.00
Satd. Flow (perm)					5620			1968			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	283	1900	335	270	976	0	0	643	736
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	2494	0	0	1246	0	0	643	709
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					45.0			62.0			62.0	62.0
Effective Green, g (s)					45.0			62.0			62.0	62.0
Actuated g/C Ratio					0.39			0.54			0.54	0.54
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2199			1061			1889	768
v/s Ratio Prot					c0.44						0.18	
v/s Ratio Perm								c0.63				0.50
v/c Ratio					1.13			1.17			0.34	0.92
Uniform Delay, d1					35.0			26.5			15.0	24.3
Progression Factor					0.72			0.91			1.00	1.00
Incremental Delay, d2					63.0			79.5			0.5	18.4
Delay (s)					88.3			103.6			15.4	42.8
Level of Service					F			F			B	D
Approach Delay (s)		0.0			88.3			103.6			30.0	
Approach LOS		A			F			F			C	

Intersection Summary			
HCM Average Control Delay	76.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

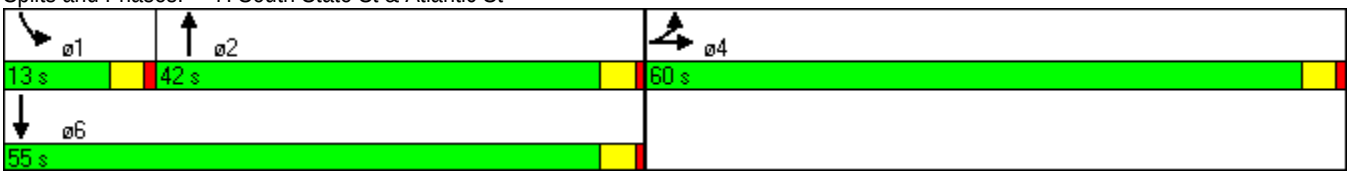


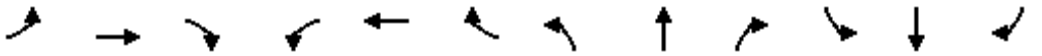
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	502	1962	81	0	0	0	0	532	401	272	497	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.942				
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	644	2515	104	0	0	0	0	682	514	349	637	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	580	2683	0	0	0	0	0	1196	0	349	637	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	60.0	60.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	13.0	55.0	0.0
Total Split (%)	52.2%	52.2%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	0.0%	11.3%	47.8%	0.0%
Maximum Green (s)	56.0	56.0						38.0		9.0	51.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.96	1.05						2.08		1.49	0.89	
Control Delay	56.6	57.2						515.1		279.1	37.8	
Queue Delay	285.5	53.8						83.6		0.0	0.7	
Total Delay	342.1	111.1						598.7		279.1	38.5	
Queue Length 50th (ft)	492	393						~1428		~174	456	
Queue Length 95th (ft)	#613	m210						#1355		m#200	m463	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	607	2544						574		234	719	
Starvation Cap Reductn	0	0						0		0	10	
Spillback Cap Reductn	256	268						47		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	1.65	1.18						2.27		1.49	0.90	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

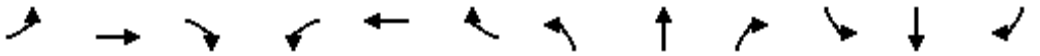




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	502	1962	81	0	0	0	0	532	401	272	497	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.99						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5214						1737		2987	1621	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5214						1737		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	644	2515	104	0	0	0	0	682	514	349	637	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	580	2678	0	0	0	0	0	1196	0	349	637	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	56.0	56.0						38.0		9.0	51.0	
Effective Green, g (s)	56.0	56.0						38.0		9.0	51.0	
Actuated g/C Ratio	0.49	0.49						0.33		0.08	0.44	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	607	2539						574		234	719	
v/s Ratio Prot	0.47	c0.51						c0.69		c0.12	0.39	
v/s Ratio Perm												
v/c Ratio	0.96	1.05						2.08		1.49	0.89	
Uniform Delay, d1	28.3	29.5						38.5		53.0	29.3	
Progression Factor	1.00	0.89						0.79		1.11	0.80	
Incremental Delay, d2	25.7	32.9						493.0		239.4	13.1	
Delay (s)	54.0	59.2						523.6		298.4	36.6	
Level of Service	D	E						F		F	D	
Approach Delay (s)		58.3			0.0			523.6			129.3	
Approach LOS		E			A			F			F	

Intersection Summary			
HCM Average Control Delay	173.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



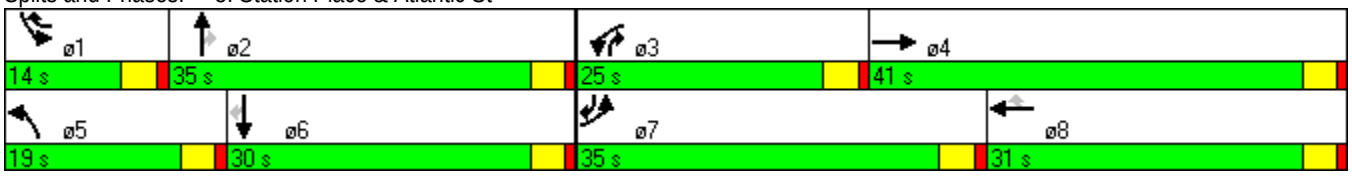
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	175	90	273	132	110	50	596	226	80	333	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.949				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1623	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1623	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				120			220			176
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	245	190	98	297	143	120	54	648	246	87	362	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	288	0	297	143	120	54	648	246	87	362	176
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	35.0	41.0	0.0	25.0	31.0	14.0	19.0	35.0	25.0	14.0	30.0	35.0
Total Split (%)	30.4%	35.7%	0.0%	21.7%	27.0%	12.2%	16.5%	30.4%	21.7%	12.2%	26.1%	30.4%
Maximum Green (s)	31.0	37.0		21.0	27.0	10.0	15.0	31.0	21.0	10.0	26.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

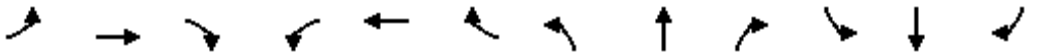
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.79	0.77		1.06	0.45	0.22	0.42	0.57	0.27	0.56	0.30	0.19
Control Delay	61.0	49.9		105.8	64.5	7.2	53.0	32.1	8.2	74.9	12.5	0.6
Queue Delay	673.0	0.1		74.1	0.0	674.7	0.0	15.0	0.7	0.0	0.0	0.5
Total Delay	734.0	50.0		179.9	64.5	681.9	53.0	47.1	9.0	74.9	12.5	1.0
Queue Length 50th (ft)	178	169		~245	111	7	39	206	34	69	26	0
Queue Length 95th (ft)	m259	m207		m#349	m121	m9	m63	304	103	m65	m80	m10
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	409	538		281	381	543	208	1143	914	162	1217	1017
Starvation Cap Reductn	0	0		0	0	0	0	343	401	0	0	515
Spillback Cap Reductn	390	11		42	0	519	0	484	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	12.89	0.55		1.24	0.38	5.00	0.26	0.98	0.48	0.54	0.30	0.35

Intersection Summary

Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ 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.

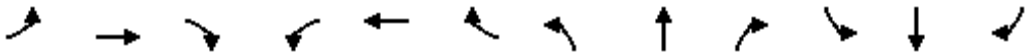
Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	175	90	273	132	110	50	596	226	80	333	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1623		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1623		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	245	190	98	297	143	120	54	648	246	87	362	176
RTOR Reduction (vph)	0	19	0	0	0	84	0	0	101	0	0	72
Lane Group Flow (vph)	245	269	0	297	143	36	54	648	145	87	362	104
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	23.6	25.2		21.0	22.6	34.2	8.2	41.2	62.2	11.6	44.6	68.2
Effective Green, g (s)	23.6	25.2		21.0	22.6	34.2	8.2	41.2	62.2	11.6	44.6	68.2
Actuated g/C Ratio	0.21	0.22		0.18	0.20	0.30	0.07	0.36	0.54	0.10	0.39	0.59
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	311	356		281	319	458	114	1141	820	155	1194	865
v/s Ratio Prot	0.16	c0.17		c0.19	0.09	0.01	0.03	c0.20	0.03	c0.06	c0.12	0.02
v/s Ratio Perm						0.02			0.07			0.05
v/c Ratio	0.79	0.76		1.06	0.45	0.08	0.47	0.57	0.18	0.56	0.30	0.12
Uniform Delay, d1	43.3	42.0		47.0	40.7	29.1	51.3	29.7	13.4	49.3	24.4	10.3
Progression Factor	1.04	0.98		1.06	1.48	1.41	0.91	0.96	2.58	1.41	0.46	0.24
Incremental Delay, d2	11.3	8.0		57.9	0.6	0.0	2.6	1.7	0.1	1.8	0.3	0.0
Delay (s)	56.5	49.0		107.7	60.9	40.9	49.1	30.2	34.7	71.6	11.6	2.5
Level of Service	E	D		F	E	D	D	C	C	E	B	A
Approach Delay (s)		52.5			81.4			32.5			17.4	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM Average Control Delay	43.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

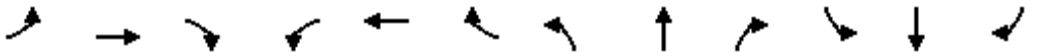


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	323	1282	261	417	717	0	0	700	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.979						0.962	
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	5409	0	1540	3079	0	0	2962	0
Flt Permitted					0.991		0.096					
Satd. Flow (perm)	0	0	0	0	5409	0	156	3079	0	0	2962	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	340	1349	275	439	755	0	0	737	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1964	0	439	755	0	0	984	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	36.0	77.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	33.0%	33.0%	0.0%	31.3%	67.0%	0.0%	0.0%	35.7%	0.0%
Maximum Green (s)				34.0	34.0		32.0	72.0			36.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.21		0.95	0.39			0.98	
Control Delay					135.6		67.0	9.5			61.9	
Queue Delay					143.2		205.1	2.6			36.7	
Total Delay					278.8		272.1	12.1			98.6	
Queue Length 50th (ft)					~513		274	95			~398	
Queue Length 95th (ft)					#591		m#392	m135			#532	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					1625		484	1928			1002	
Starvation Cap Reductn					0		184	1015			0	
Spillback Cap Reductn					340		0	0			103	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.53		1.46	0.83			1.09	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
~ 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.	

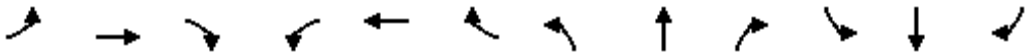
Splits and Phases: 9: North State St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	323	1282	261	417	717	0	0	700	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5411		1540	3079			2963	
Flt Permitted					0.99		0.10	1.00			1.00	
Satd. Flow (perm)					5411		155	3079			2963	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	340	1349	275	439	755	0	0	737	247
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	1939	0	439	755	0	0	956	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					34.0		72.0	72.0			37.8	
Effective Green, g (s)					34.0		72.0	72.0			37.8	
Actuated g/C Ratio					0.30		0.63	0.63			0.33	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1600		461	1928			974	
v/s Ratio Prot					c0.36		c0.25	0.25			0.32	
v/s Ratio Perm							c0.35					
v/c Ratio					1.21		0.95	0.39			0.98	
Uniform Delay, d1					40.5		33.5	10.7			38.3	
Progression Factor					1.00		1.43	0.85			1.00	
Incremental Delay, d2					101.3		22.4	0.4			24.7	
Delay (s)					141.8		70.3	9.4			62.9	
Level of Service					F		E	A			E	
Approach Delay (s)		0.0			141.8			31.8			62.9	
Approach LOS		A			F			C			E	

Intersection Summary			
HCM Average Control Delay	91.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

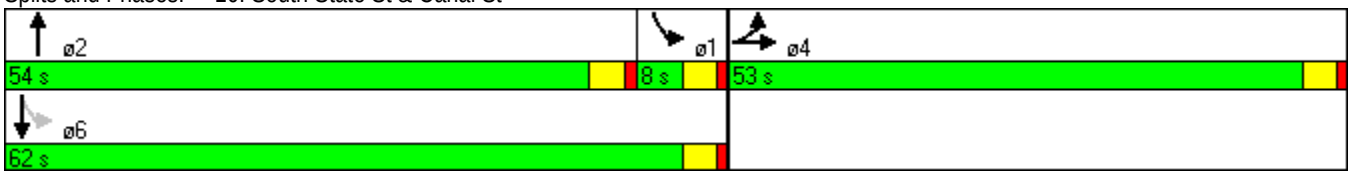


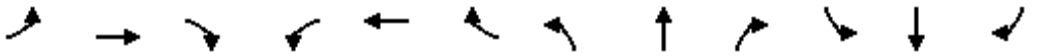
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	1934	433	0	0	0	0	836	339	314	709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.973						0.957				
Flt Protected	0.950										0.985	
Satd. Flow (prot)	1593	4453	0	0	0	0	0	2845	0	0	3033	0
Flt Permitted	0.950										0.508	
Satd. Flow (perm)	1593	4453	0	0	0	0	0	2845	0	0	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54						18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	314	2036	456	0	0	0	0	880	357	331	746	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	314	2492	0	0	0	0	0	1237	0	0	1077	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	53.0	53.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	8.0	62.0	0.0
Total Split (%)	46.1%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.0%	0.0%	7.0%	53.9%	0.0%
Maximum Green (s)	49.0	49.0						50.0		4.0	58.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.46	1.29						0.86			3.48dl	
Control Delay	20.8	156.5						25.5			186.7	
Queue Delay	0.8	0.0						2.7			34.3	
Total Delay	21.6	156.5						28.2			221.0	
Queue Length 50th (ft)	111	~837						272			~567	
Queue Length 95th (ft)	m107	m#628						m311			m#528	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	679	1928						1444			789	
Starvation Cap Reductn	0	0						17			42	
Spillback Cap Reductn	153	0						117			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.60	1.29						0.93			1.44	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

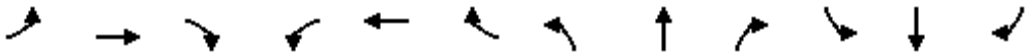




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	1934	433	0	0	0	0	836	339	314	709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.97						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.98	
Satd. Flow (prot)	1593	4451						2844			3033	
Flt Permitted	0.95	1.00						1.00			0.51	
Satd. Flow (perm)	1593	4451						2844			1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	2036	456	0	0	0	0	880	357	331	746	0
RTOR Reduction (vph)	0	31	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	314	2461	0	0	0	0	0	1228	0	0	1077	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	49.0	49.0						58.0			58.0	
Effective Green, g (s)	49.0	49.0						58.0			58.0	
Actuated g/C Ratio	0.43	0.43						0.50			0.50	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	679	1897						1434			788	
v/s Ratio Prot	0.20	c0.55						0.43				
v/s Ratio Perm											c0.69	
v/c Ratio	0.46	1.30						0.86			3.48dl	
Uniform Delay, d1	23.6	33.0						24.9			28.5	
Progression Factor	0.85	0.73						0.88			0.65	
Incremental Delay, d2	0.0	134.2						3.5			165.8	
Delay (s)	20.2	158.2						25.3			184.2	
Level of Service	C	F						C			F	
Approach Delay (s)		142.8			0.0			25.3			184.2	
Approach LOS		F			A			C			F	

Intersection Summary			
HCM Average Control Delay	123.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	131.9%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

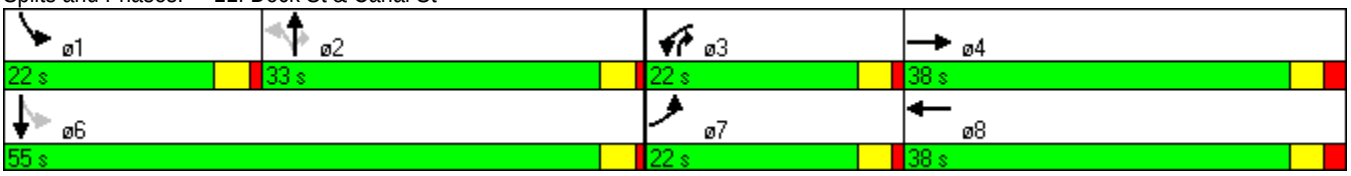


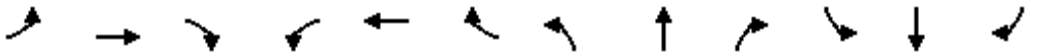
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	453	0	438	414	380	21	518	477	554	493	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.928				0.850		0.975	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1540	3079	0	1486	2857	0	0	3073	1378	1540	3002	0
Flt Permitted	0.950			0.950				0.913		0.212		
Satd. Flow (perm)	1540	3079	0	1486	2857	0	0	2811	1378	344	3002	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					204				95		26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	262	477	0	461	436	400	22	545	502	583	519	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	262	477	0	461	836	0	0	567	502	583	621	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	22.0	38.0	0.0	22.0	38.0	0.0	33.0	33.0	22.0	22.0	55.0	0.0
Total Split (%)	19.1%	33.0%	0.0%	19.1%	33.0%	0.0%	28.7%	28.7%	19.1%	19.1%	47.8%	0.0%
Maximum Green (s)	18.0	33.0		18.0	33.0		29.0	29.0	18.0	18.0	51.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.09	0.56		1.98	0.89			0.80	0.76	1.58	0.44	
Control Delay	127.1	50.8		482.8	42.4			50.0	30.1	288.4	19.4	
Queue Delay	0.0	0.0		0.0	0.1			0.5	0.0	0.0	0.6	
Total Delay	127.1	50.8		482.8	42.5			50.5	30.1	288.4	20.0	
Queue Length 50th (ft)	~222	174		~532	238			207	252	~561	141	
Queue Length 95th (ft)	#393	232		#735	#326			276	399	m#334	m98	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	241	910		233	988			709	664	369	1401	
Starvation Cap Reductn	0	0		0	0			0	0	0	418	
Spillback Cap Reductn	0	0		0	4			18	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	1.09	0.52		1.98	0.85			0.82	0.76	1.58	0.63	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	453	0	438	414	380	21	518	477	554	493	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.93			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2858			3073	1378	1540	3003	
Flt Permitted	0.95	1.00		0.95	1.00			0.91	1.00	0.21	1.00	
Satd. Flow (perm)	1540	3079		1486	2858			2812	1378	343	3003	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	262	477	0	461	436	400	22	545	502	583	519	102
RTOR Reduction (vph)	0	0	0	0	147	0	0	0	56	0	14	0
Lane Group Flow (vph)	262	477	0	461	689	0	0	567	446	583	607	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	18.0	30.9		18.0	30.9			29.0	47.0	53.1	53.1	
Effective Green, g (s)	18.0	31.9		18.0	31.9			29.0	47.0	53.1	53.1	
Actuated g/C Ratio	0.16	0.28		0.16	0.28			0.25	0.41	0.46	0.46	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	241	854		233	793			709	611	368	1387	
v/s Ratio Prot	0.17	0.15		c0.31	c0.24				0.11	c0.28	0.20	
v/s Ratio Perm								0.20	0.21	c0.46		
v/c Ratio	1.09	0.56		1.98	0.87			0.80	0.73	1.58	0.44	
Uniform Delay, d1	48.5	35.5		48.5	39.6			40.3	28.6	26.1	20.9	
Progression Factor	0.97	1.36		1.00	1.00			1.00	1.00	1.22	0.93	
Incremental Delay, d2	82.3	0.8		455.4	9.9			9.2	4.4	264.1	0.1	
Delay (s)	129.3	49.2		503.9	49.5			49.5	33.0	295.8	19.6	
Level of Service	F	D		F	D			D	C	F	B	
Approach Delay (s)		77.6			211.0			41.7			153.4	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	130.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	391	12	1	320	89	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.963	
Flt Protected					0.965	
Satd. Flow (prot)	1863	1583	0	1900	1731	0
Flt Permitted					0.965	
Satd. Flow (perm)	1863	1583	0	1900	1731	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	425	13	1	348	97	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	425	13	0	349	133	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	391	12	1	320	89	33
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	425	13	1	348	97	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.97	
vC, conflicting volume			438		775	425
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			438		756	425
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		74	94
cM capacity (veh/h)			1122		366	629

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	425	13	349	133
Volume Left	0	0	1	97
Volume Right	0	13	0	36
cSH	1700	1700	1122	413
Volume to Capacity	0.25	0.01	0.00	0.32
Queue Length 95th (ft)	0	0	0	34
Control Delay (s)	0.0	0.0	0.0	17.8
Lane LOS			A	C
Approach Delay (s)	0.0		0.0	17.8
Approach LOS				C

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	423	1	23	321	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.997		
Satd. Flow (prot)	1863	0	0	1894	0	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1894	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	460	1	25	349	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	461	0	0	374	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	423	1	23	321	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	460	1	25	349	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.95	
vC, conflicting volume			461		859	460
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			461		823	460
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1100		317	601

Direction, Lane #	EB 1	WB 1
Volume Total	461	374
Volume Left	0	25
Volume Right	1	0
cSH	1700	1100
Volume to Capacity	0.27	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.8
Lane LOS		A
Approach Delay (s)	0.0	0.8
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	423	0	0	344	0	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	445	0	0	362	0	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	445	0	0	362	0	71
Sign Control	Free			Free	Stop	

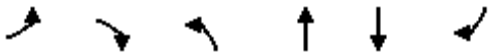
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

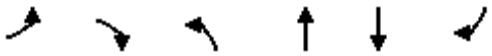
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	423	0	0	344	0	67
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	445	0	0	362	0	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.94	
vC, conflicting volume			445		807	445
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			445		760	445
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	88
cM capacity (veh/h)			1115		350	613

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	445	362	71
Volume Left	0	0	0
Volume Right	0	0	71
cSH	1700	1700	613
Volume to Capacity	0.26	0.21	0.12
Queue Length 95th (ft)	0	0	10
Control Delay (s)	0.0	0.0	11.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.6
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		



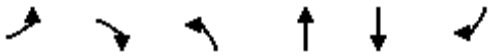
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	62	20	30	810	660	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.967					0.850
Flt Protected	0.964			0.998		
Satd. Flow (prot)	1736	0	0	1859	1863	1583
Flt Permitted	0.964			0.960		
Satd. Flow (perm)	1736	0	0	1788	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13					39
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	67	22	33	880	717	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	913	717	39
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	31.0	0.0	84.0	84.0	84.0	84.0
Total Split (%)	27.0%	0.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	26.0		79.0	79.0	79.0	79.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.48			0.60	0.45	0.03
Control Delay	49.2			5.5	6.2	1.2
Queue Delay	0.0			0.4	1.2	0.0
Total Delay	49.2			5.9	7.4	1.2
Queue Length 50th (ft)	54			174	253	1
Queue Length 95th (ft)	103			333	m297	m6
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	418			1532	1597	1352
Starvation Cap Reductn	0			0	620	0
Spillback Cap Reductn	2			219	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.21			0.70	0.73	0.03

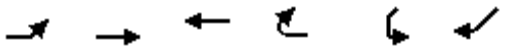
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	62	20	30	810	660	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1735			1859	1863	1583
Flt Permitted	0.96			0.96	1.00	1.00
Satd. Flow (perm)	1735			1789	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	22	33	880	717	39
RTOR Reduction (vph)	12	0	0	0	0	7
Lane Group Flow (vph)	77	0	0	913	717	32
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	9.2			95.8	95.8	95.8
Effective Green, g (s)	10.2			96.8	96.8	95.8
Actuated g/C Ratio	0.09			0.84	0.84	0.83
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	154			1506	1568	1319
v/s Ratio Prot	c0.04				0.38	
v/s Ratio Perm				c0.51		0.02
v/c Ratio	0.50			0.61	0.46	0.02
Uniform Delay, d1	50.0			2.9	2.3	1.6
Progression Factor	1.00			1.00	1.90	1.47
Incremental Delay, d2	2.6			1.8	0.8	0.0
Delay (s)	52.5			4.8	5.2	2.4
Level of Service	D			A	A	A
Approach Delay (s)	52.5			4.8	5.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

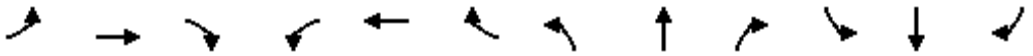


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	540	182	0	0	0	0	415	522	53	326	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.066		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	118	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198						11			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	170	587	198	0	0	0	0	451	567	58	354	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	587	198	0	0	0	0	451	567	58	354	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	25.0	25.0	25.0	0.0	0.0	0.0	0.0	90.0	90.0	70.0	70.0	0.0
Total Split (%)	21.7%	21.7%	21.7%	0.0%	0.0%	0.0%	0.0%	78.3%	78.3%	60.9%	60.9%	0.0%
Maximum Green (s)	20.0	20.0	20.0							65.0	65.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	62.0	20.0	8.0
Total Split (%)	54%	17%	7%
Maximum Green (s)	57.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

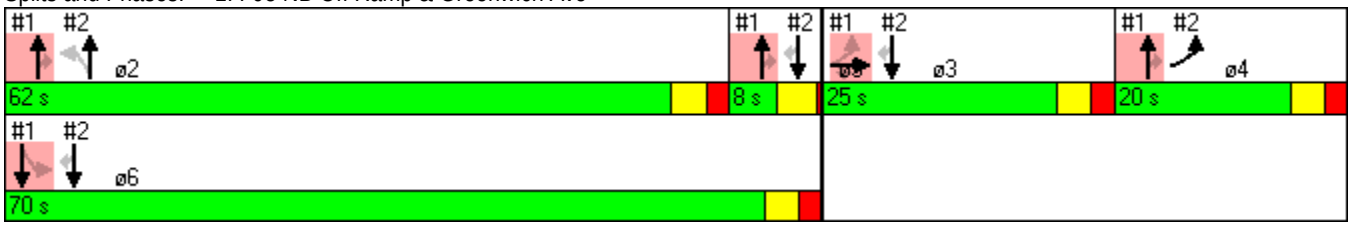
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.53	0.92	0.44					0.32	0.49	0.89	0.19	
Control Delay	49.7	67.2	9.2					0.4	1.3	115.1	12.8	
Queue Delay	0.0	0.0	0.0					2.7	2.7	0.0	0.0	
Total Delay	49.7	67.2	9.2					3.0	4.0	115.1	12.8	
Queue Length 50th (ft)	116	229	0					1	9	35	63	
Queue Length 95th (ft)	190	#344	64					m1	m29	#126	88	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	318	636	446					1453	1201	70	1997	
Starvation Cap Reductn	0	0	0					860	498	0	0	
Spillback Cap Reductn	0	0	1					0	0	0	25	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.92	0.44					0.76	0.81	0.83	0.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 110.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

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: 1: I-95 NB Off Ramp & Greenwich Ave

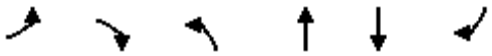


Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

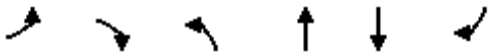
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	540	182	0	0	0	0	415	522	53	326	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.07	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	118	3388	
Peak-hour factor, PHF	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)	170	587	198	0	0	0	0	451	567	58	354	0
RTOR Reduction (vph)	0	0	162	0	0	0	0	0	3	0	0	0
Lane Group Flow (vph)	170	587	36	0	0	0	0	451	564	58	354	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	20.1	20.1	20.1					81.8	81.8	60.7	60.7	
Effective Green, g (s)	20.1	20.1	20.1					81.8	81.8	60.7	60.7	
Actuated g/C Ratio	0.18	0.18	0.18					0.74	0.74	0.55	0.55	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	318	635	284					1431	1180	65	1854	
v/s Ratio Prot		c0.17						0.23			0.10	
v/s Ratio Perm	0.10		0.02						c0.35	c0.49		
v/c Ratio	0.53	0.92	0.13					0.32	0.48	0.89	0.19	
Uniform Delay, d1	41.2	44.7	38.0					5.0	5.9	22.2	12.7	
Progression Factor	1.00	1.00	1.00					0.01	0.09	1.00	1.00	
Incremental Delay, d2	2.2	19.5	0.3					0.1	0.2	75.6	0.1	
Delay (s)	43.4	64.2	38.3					0.1	0.7	97.8	12.7	
Level of Service	D	E	D					A	A	F	B	
Approach Delay (s)		55.1			0.0			0.4			24.7	
Approach LOS		E			A			A			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	382	64	33	555	381	74			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.978				0.997	0.850			
Flt Protected	0.959			0.997					
Satd. Flow (prot)	3389	0	0	1857	1764	1504			
Flt Permitted	0.959			0.956					
Satd. Flow (perm)	3389	0	0	1781	1764	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	14				3	72			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	415	70	36	603	414	80			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	485	0	0	639	422	72			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	62.0	62.0	103.0	103.0	25.0	8.0	70.0
Total Split (%)	17.4%	0.0%	53.9%	53.9%	89.6%	89.6%	22%	7%	61%
Maximum Green (s)	15.0		57.0	57.0			20.0	4.0	65.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



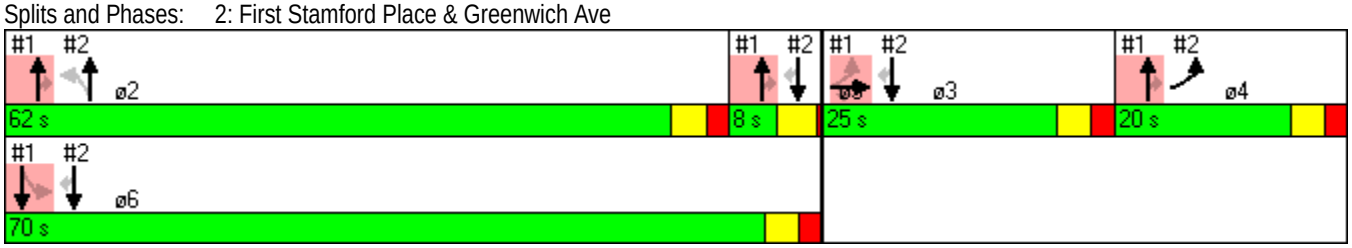
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	1.03			0.85	0.31	0.06			
Control Delay	94.9			39.8	2.2	0.1			
Queue Delay	4.1			0.0	0.5	1.5			
Total Delay	99.0			39.8	2.7	1.5			
Queue Length 50th (ft)	~200			407	22	0			
Queue Length 95th (ft)	#308			507	27	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	473			921	1365	1180			
Starvation Cap Reductn	0			0	554	979			
Spillback Cap Reductn	6			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	1.04			0.69	0.52	0.36			

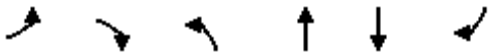
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 110.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	382	64	33	555	381	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3390			1858	1765	1504
Flt Permitted	0.96			0.96	1.00	1.00
Satd. Flow (perm)	3390			1781	1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	415	70	36	603	414	80
RTOR Reduction (vph)	12	0	0	0	1	19
Lane Group Flow (vph)	473	0	0	639	421	53
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.1			46.9	85.8	85.8
Effective Green, g (s)	15.1			46.9	81.8	81.8
Actuated g/C Ratio	0.14			0.42	0.74	0.74
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	462			753	1302	1109
v/s Ratio Prot	c0.14				c0.24	
v/s Ratio Perm				c0.36		0.04
v/c Ratio	1.02			0.85	0.32	0.05
Uniform Delay, d1	47.9			28.8	5.0	4.0
Progression Factor	1.00			1.00	0.43	0.00
Incremental Delay, d2	48.0			9.0	0.2	0.0
Delay (s)	95.9			37.8	2.3	0.0
Level of Service	F			D	A	A
Approach Delay (s)	95.9			37.8	2.0	
Approach LOS	F			D	A	

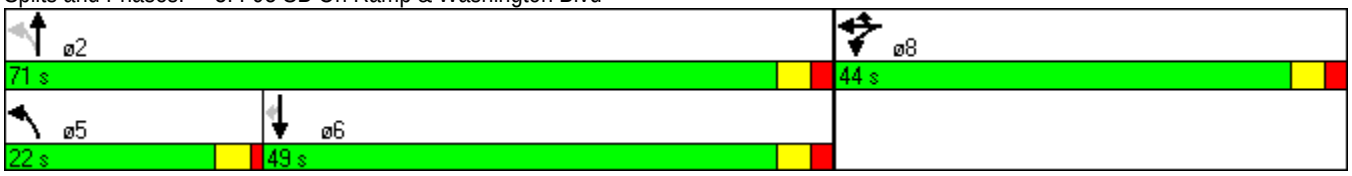
Intersection Summary			
HCM Average Control Delay	44.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

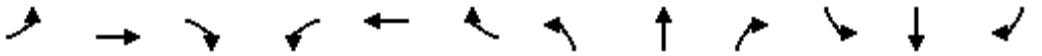
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	156	283	685	433	1252	0	0	1221	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.083					
Satd. Flow (perm)	0	0	0	1438	1513	1458	128	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						55						264
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	159	289	699	442	1278	0	0	1246	661
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	159	289	699	442	1278	0	0	1246	661
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	44.0	44.0	44.0	22.0	71.0	0.0	0.0	49.0	49.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	38.3%	19.1%	61.7%	0.0%	0.0%	42.6%	42.6%
Maximum Green (s)				39.0	39.0	39.0	18.0	66.0			44.0	44.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.33	0.56	1.32	1.56	0.76			1.04	0.95
Control Delay				39.7	43.5	180.9	286.8	31.8			73.1	44.8
Queue Delay				674.5	0.0	0.0	187.2	289.0			226.6	0.0
Total Delay				714.2	43.5	180.9	474.0	320.8			299.7	44.8
Queue Length 50th (ft)				100	193	~632	~432	322			~526	319
Queue Length 95th (ft)				m94	m180	m#575	m#231	m130			#662	#581
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				488	513	531	284	1684			1195	698
Starvation Cap Reductn				0	0	0	60	905			0	0
Spillback Cap Reductn				488	0	0	0	0			396	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				159.00	0.56	1.32	1.97	1.64			1.56	0.95

Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ 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.

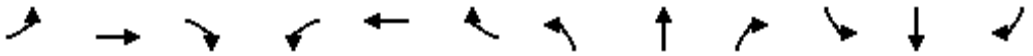
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	156	283	685	433	1252	0	0	1221	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.08	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	129	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	159	289	699	442	1278	0	0	1246	661
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	163
Lane Group Flow (vph)	0	0	0	159	289	663	442	1278	0	0	1246	498
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Effective Green, g (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Actuated g/C Ratio				0.34	0.34	0.34	0.57	0.57			0.38	0.38
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				488	513	494	284	1684			1195	535
v/s Ratio Prot				0.11	0.19	c0.45	c0.24	0.44			0.40	
v/s Ratio Perm							c0.65					0.36
v/c Ratio				0.33	0.56	1.34	1.56	0.76			1.04	0.93
Uniform Delay, d1				28.2	31.0	38.0	36.8	18.5			35.5	34.0
Progression Factor				1.37	1.36	1.34	1.56	1.66			1.00	1.00
Incremental Delay, d2				0.1	0.2	154.9	251.9	0.3			37.9	25.1
Delay (s)				38.8	42.3	206.0	309.1	31.0			73.4	59.1
Level of Service				D	D	F	F	C			E	E
Approach Delay (s)		0.0			141.6			102.5			68.4	
Approach LOS		A			F			F			E	

Intersection Summary			
HCM Average Control Delay	98.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	168.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



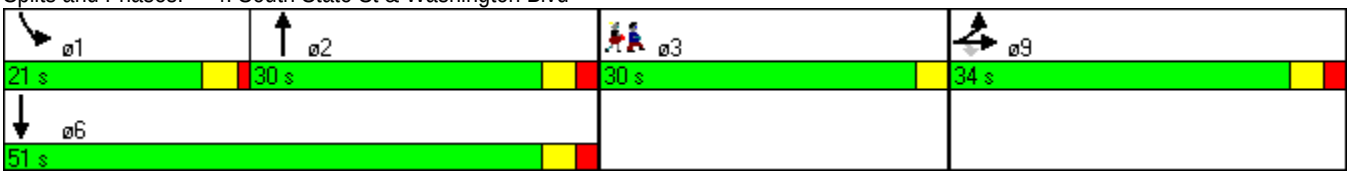
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	594	229	0	0	0	0	1270	261	556	821	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					1.00		1.00		
Frt			0.850					0.974				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3978	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1454	1545	1225	0	0	0	0	3978	0	2742	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177					35				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	506	724	279	0	0	0	0	1549	318	678	1001	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	506	724	279	0	0	0	0	1867	0	678	1001	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	34.0	34.0	34.0	0.0	0.0	0.0	0.0	30.0	0.0	21.0	51.0	0.0
Total Split (%)	29.6%	29.6%	29.6%	0.0%	0.0%	0.0%	0.0%	26.1%	0.0%	18.3%	44.3%	0.0%
Maximum Green (s)	29.0	29.0	29.0					25.0		17.0	46.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	26%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.67	0.91	0.39					2.09		1.67	0.88	
Control Delay	26.3	43.5	7.7					517.7		345.1	22.5	
Queue Delay	317.0	0.0	0.0					103.1		26.8	40.6	
Total Delay	343.3	43.5	7.7					620.8		371.9	63.1	
Queue Length 50th (ft)	268	473	39					~804		~370	121	
Queue Length 95th (ft)	338	#579	77					#790		m#368	m120	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	753	793	715					892		406	1134	
Starvation Cap Reductn	0	0	0					24		14	210	
Spillback Cap Reductn	455	0	6					88		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.70	0.91	0.39					2.32		1.73	1.08	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ 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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	594	229	0	0	0	0	1270	261	556	821	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1262					3980		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1262					3980		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	506	724	279	0	0	0	0	1549	318	678	1001	0
RTOR Reduction (vph)	0	0	86	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	506	724	193	0	0	0	0	1840	0	678	1001	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Effective Green, g (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Actuated g/C Ratio	0.51	0.51	0.51					0.22		0.15	0.40	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	753	793	647					865		406	1134	
v/s Ratio Prot	0.34	c0.47						c0.46		c0.25	0.35	
v/s Ratio Perm			0.15									
v/c Ratio	0.67	0.91	0.30					2.13		1.67	0.88	
Uniform Delay, d1	20.8	25.6	16.1					45.0		49.0	32.0	
Progression Factor	1.00	1.00	1.00					0.80		1.31	0.49	
Incremental Delay, d2	4.7	16.7	1.2					510.0		307.6	6.1	
Delay (s)	25.6	42.3	17.3					546.1		371.9	21.6	
Level of Service	C	D	B					F		F	C	
Approach Delay (s)		32.1			0.0			546.1			163.1	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	265.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	168.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	90	410	1120	150	200	850	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.982				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3012	0	1561	3123	
Flt Permitted	0.950				0.111		
Satd. Flow (perm)	1578	2361	3012	0	182	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		471	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	103	471	1287	172	230	977	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	103	471	1459	0	230	977	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	23.0	56.0	0.0	23.0	79.0	20.0
Total Split (%)	13.9%	20.0%	48.7%	0.0%	20.0%	68.7%	17%
Maximum Green (s)	11.0	19.0	51.0		19.0	74.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.71	0.47	0.76		0.65	0.38	
Control Delay	73.6	10.0	18.9		30.9	2.9	
Queue Delay	0.0	0.3	500.8		0.7	0.6	
Total Delay	73.6	10.3	519.7		31.6	3.5	
Queue Length 50th (ft)	75	25	364		116	67	
Queue Length 95th (ft)	#149	68	522		m149	85	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	151	1064	1931		396	2564	
Starvation Cap Reductn	0	0	0		34	1083	
Spillback Cap Reductn	0	193	1240		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.68	0.54	2.11		0.64	0.66	

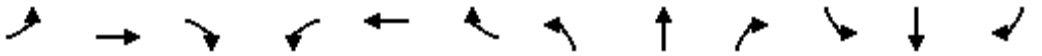
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	90	410	1120	150	200	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3013		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3013		183	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	103	471	1287	172	230	977
RTOR Reduction (vph)	0	358	6	0	0	0
Lane Group Flow (vph)	103	113	1453	0	230	977
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.6	27.5	73.5		94.4	94.4
Effective Green, g (s)	10.6	27.5	73.5		94.4	94.4
Actuated g/C Ratio	0.09	0.24	0.64		0.82	0.82
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	145	565	1926		353	2564
v/s Ratio Prot	c0.07	0.03	c0.48		c0.10	0.31
v/s Ratio Perm		0.02			0.44	
v/c Ratio	0.71	0.20	0.75		0.65	0.38
Uniform Delay, d1	50.7	35.0	14.5		19.1	2.7
Progression Factor	0.94	3.40	1.00		1.99	0.96
Incremental Delay, d2	15.0	0.2	2.8		2.6	0.3
Delay (s)	62.7	119.0	17.3		40.5	2.8
Level of Service	E	F	B		D	A
Approach Delay (s)	108.9		17.3			10.0
Approach LOS	F		B			B

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

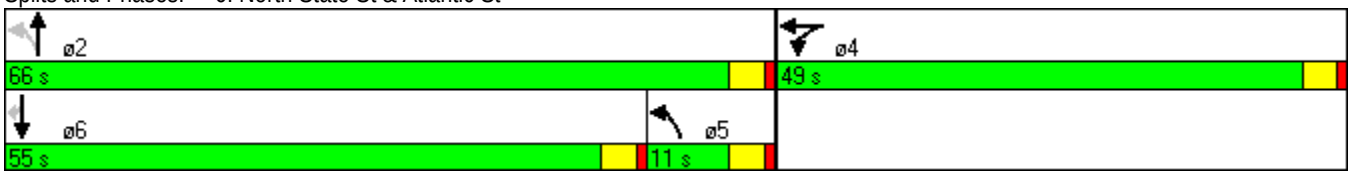


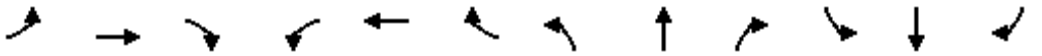
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	234	1577	278	224	801	0	0	530	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.980							0.850
Flt Protected					0.994			0.989				
Satd. Flow (prot)	0	0	0	0	5618	0	0	3045	0	0	3504	1425
Flt Permitted					0.994			0.640				
Satd. Flow (perm)	0	0	0	0	5618	0	0	1971	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					40							58
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	282	1900	335	270	965	0	0	639	736
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2517	0	0	1235	0	0	639	736
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	11.0	66.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	42.6%	42.6%	0.0%	9.6%	57.4%	0.0%	0.0%	47.8%	47.8%
Maximum Green (s)				45.0	45.0		7.0	62.0			51.0	51.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.13			1.16			0.34	0.93
Control Delay					87.9			99.2			15.6	41.9
Queue Delay					62.1			302.5			0.0	0.0
Total Delay					150.0			401.7			15.6	41.9
Queue Length 50th (ft)					~606			~583			134	453
Queue Length 95th (ft)					m#343			m217			156	#628
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2223			1063			1889	795
Starvation Cap Reductn					0			391			0	0
Spillback Cap Reductn					244			0			60	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.27			1.84			0.35	0.93

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ 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: 6: North State St & Atlantic St

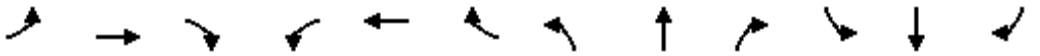




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	234	1577	278	224	801	0	0	530	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.99			1.00	1.00
Satd. Flow (prot)					5620			3046			3504	1425
Flt Permitted					0.99			0.64			1.00	1.00
Satd. Flow (perm)					5620			1970			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	282	1900	335	270	965	0	0	639	736
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	2493	0	0	1235	0	0	639	709
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					45.0			62.0			62.0	62.0
Effective Green, g (s)					45.0			62.0			62.0	62.0
Actuated g/C Ratio					0.39			0.54			0.54	0.54
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2199			1062			1889	768
v/s Ratio Prot					c0.44						0.18	
v/s Ratio Perm								c0.63				0.50
v/c Ratio					1.13			1.16			0.34	0.92
Uniform Delay, d1					35.0			26.5			14.9	24.3
Progression Factor					0.72			0.92			1.00	1.00
Incremental Delay, d2					62.8			74.4			0.5	18.4
Delay (s)					88.1			98.7			15.4	42.8
Level of Service					F			F			B	D
Approach Delay (s)		0.0			88.1			98.7			30.1	
Approach LOS		A			F			F			C	

Intersection Summary			
HCM Average Control Delay	75.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

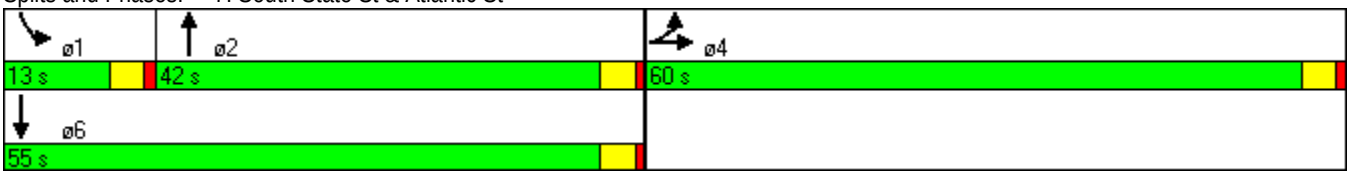


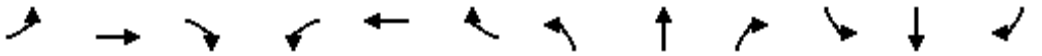
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	502	1962	81	0	0	0	0	523	399	272	492	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.942				
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	644	2515	104	0	0	0	0	671	512	349	631	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	580	2683	0	0	0	0	0	1183	0	349	631	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	60.0	60.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	13.0	55.0	0.0
Total Split (%)	52.2%	52.2%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	0.0%	11.3%	47.8%	0.0%
Maximum Green (s)	56.0	56.0						38.0		9.0	51.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.96	1.05						2.06		1.49	0.88	
Control Delay	56.6	57.3						505.1		279.1	37.0	
Queue Delay	281.3	53.4						80.8		0.0	0.9	
Total Delay	337.9	110.6						586.0		279.1	37.9	
Queue Length 50th (ft)	492	393						~1406		~174	451	
Queue Length 95th (ft)	#613	m210						#1336		m#201	m457	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	607	2544						574		234	719	
Starvation Cap Reductn	0	0						0		0	15	
Spillback Cap Reductn	254	266						46		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	1.64	1.18						2.24		1.49	0.90	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

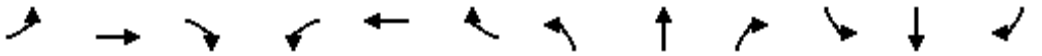




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	502	1962	81	0	0	0	0	523	399	272	492	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.99						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5214						1736		2987	1621	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5214						1736		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	644	2515	104	0	0	0	0	671	512	349	631	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	580	2678	0	0	0	0	0	1183	0	349	631	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	56.0	56.0						38.0		9.0	51.0	
Effective Green, g (s)	56.0	56.0						38.0		9.0	51.0	
Actuated g/C Ratio	0.49	0.49						0.33		0.08	0.44	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	607	2539						574		234	719	
v/s Ratio Prot	0.47	c0.51						c0.68		c0.12	0.39	
v/s Ratio Perm												
v/c Ratio	0.96	1.05						2.06		1.49	0.88	
Uniform Delay, d1	28.3	29.5						38.5		53.0	29.2	
Progression Factor	1.00	0.89						0.80		1.11	0.80	
Incremental Delay, d2	25.7	32.9						482.9		239.4	12.4	
Delay (s)	54.0	59.2						513.6		298.2	35.8	
Level of Service	D	E						F		F	D	
Approach Delay (s)		58.3			0.0			513.6			129.2	
Approach LOS		E			A			F			F	

Intersection Summary			
HCM Average Control Delay	170.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

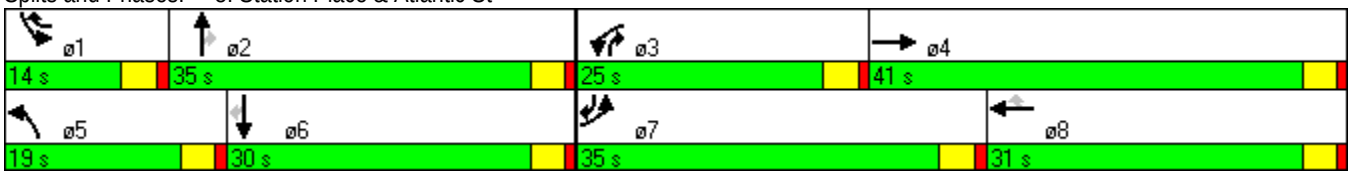


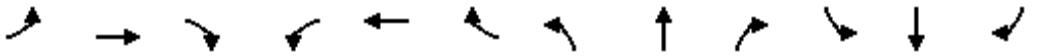
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	170	90	270	130	110	50	590	220	80	330	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.948				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1621	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1621	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				120			216			174
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	239	185	98	293	141	120	54	641	239	87	359	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	239	283	0	293	141	120	54	641	239	87	359	174
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	35.0	41.0	0.0	25.0	31.0	14.0	19.0	35.0	25.0	14.0	30.0	35.0
Total Split (%)	30.4%	35.7%	0.0%	21.7%	27.0%	12.2%	16.5%	30.4%	21.7%	12.2%	26.1%	30.4%
Maximum Green (s)	31.0	37.0		21.0	27.0	10.0	15.0	31.0	21.0	10.0	26.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.78	0.76		1.04	0.44	0.22	0.42	0.56	0.26	0.56	0.29	0.19
Control Delay	60.4	50.2		102.1	64.8	7.3	53.8	31.5	8.3	74.8	12.3	0.5
Queue Delay	673.2	0.1		67.3	0.0	674.7	0.0	11.3	0.7	0.0	0.0	0.4
Total Delay	733.5	50.2		169.4	64.8	682.0	53.8	42.8	9.0	74.8	12.3	1.0
Queue Length 50th (ft)	172	167		~239	109	8	39	201	32	69	26	0
Queue Length 95th (ft)	m251	m204		m#343	m120	m9	m64	300	100	m66	m78	m9
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	409	538		281	381	545	208	1149	915	163	1224	1019
Starvation Cap Reductn	0	0		0	0	0	0	347	409	0	0	514
Spillback Cap Reductn	383	8		40	0	518	0	482	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	9.19	0.53		1.22	0.37	4.44	0.26	0.96	0.47	0.53	0.29	0.34

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
~ 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: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	170	90	270	130	110	50	590	220	80	330	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1621		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1621		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	239	185	98	293	141	120	54	641	239	87	359	174
RTOR Reduction (vph)	0	19	0	0	0	84	0	0	99	0	0	71
Lane Group Flow (vph)	239	264	0	293	141	36	54	641	140	87	359	103
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	23.2	24.9		21.0	22.7	34.3	8.2	41.5	62.5	11.6	44.9	68.1
Effective Green, g (s)	23.2	24.9		21.0	22.7	34.3	8.2	41.5	62.5	11.6	44.9	68.1
Actuated g/C Ratio	0.20	0.22		0.18	0.20	0.30	0.07	0.36	0.54	0.10	0.39	0.59
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	351		281	320	459	114	1149	824	155	1202	864
v/s Ratio Prot	0.16	c0.16		c0.19	0.09	0.01	0.03	c0.20	0.03	c0.06	c0.12	0.02
v/s Ratio Perm						0.02			0.07			0.05
v/c Ratio	0.78	0.75		1.04	0.44	0.08	0.47	0.56	0.17	0.56	0.30	0.12
Uniform Delay, d1	43.5	42.2		47.0	40.6	29.0	51.3	29.4	13.2	49.3	24.2	10.3
Progression Factor	1.04	0.99		1.06	1.49	1.43	0.92	0.95	2.70	1.41	0.46	0.23
Incremental Delay, d2	11.0	7.9		53.6	0.6	0.0	2.6	1.6	0.1	1.9	0.3	0.0
Delay (s)	56.2	49.6		103.5	61.1	41.6	49.9	29.5	35.8	71.6	11.4	2.4
Level of Service	E	D		F	E	D	D	C	D	E	B	A
Approach Delay (s)		52.6			79.3			32.3			17.3	
Approach LOS		D			E			C			B	

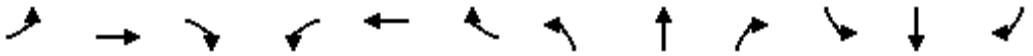
Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	322	1281	261	417	711	0	0	687	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.979						0.962	
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	5409	0	1540	3079	0	0	2962	0
Flt Permitted					0.991		0.096					
Satd. Flow (perm)	0	0	0	0	5409	0	156	3079	0	0	2962	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						43	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	339	1348	275	439	748	0	0	723	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1962	0	439	748	0	0	970	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	36.0	77.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	33.0%	33.0%	0.0%	31.3%	67.0%	0.0%	0.0%	35.7%	0.0%
Maximum Green (s)				34.0	34.0		32.0	72.0			36.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.21		0.95	0.39			0.97	
Control Delay					135.1		67.0	9.5			58.8	
Queue Delay					138.8		202.9	2.5			30.5	
Total Delay					273.9		269.9	12.0			89.2	
Queue Length 50th (ft)					~512		274	95			~374	
Queue Length 95th (ft)					#590		m#393	m135			#520	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					1625		484	1928			1003	
Starvation Cap Reductn					0		183	1018			0	
Spillback Cap Reductn					332		0	0			99	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.52		1.46	0.82			1.07	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	322	1281	261	417	711	0	0	687	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5411		1540	3079			2962	
Flt Permitted					0.99		0.10	1.00			1.00	
Satd. Flow (perm)					5411		155	3079			2962	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	339	1348	275	439	748	0	0	723	247
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	1937	0	439	748	0	0	941	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					34.0		72.0	72.0			37.8	
Effective Green, g (s)					34.0		72.0	72.0			37.8	
Actuated g/C Ratio					0.30		0.63	0.63			0.33	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1600		461	1928			974	
v/s Ratio Prot					c0.36		c0.25	0.24			0.32	
v/s Ratio Perm							c0.35					
v/c Ratio					1.21		0.95	0.39			0.97	
Uniform Delay, d1					40.5		33.5	10.6			38.0	
Progression Factor					1.00		1.43	0.85			1.00	
Incremental Delay, d2					100.8		22.5	0.4			21.8	
Delay (s)					141.3		70.2	9.4			59.7	
Level of Service					F		E	A			E	
Approach Delay (s)		0.0			141.3			31.9			59.7	
Approach LOS		A			F			C			E	

Intersection Summary			
HCM Average Control Delay	90.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

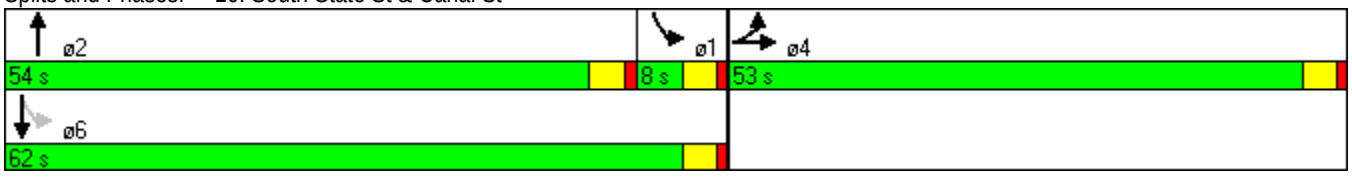
c Critical Lane Group

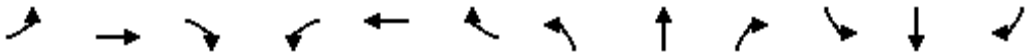
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	1934	433	0	0	0	0	830	337	314	705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.973						0.957				
Flt Protected	0.950										0.985	
Satd. Flow (prot)	1593	4453	0	0	0	0	0	2845	0	0	3033	0
Flt Permitted	0.950										0.507	
Satd. Flow (perm)	1593	4453	0	0	0	0	0	2845	0	0	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54						18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	314	2036	456	0	0	0	0	874	355	331	742	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	314	2492	0	0	0	0	0	1229	0	0	1073	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	53.0	53.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	8.0	62.0	0.0
Total Split (%)	46.1%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.0%	0.0%	7.0%	53.9%	0.0%
Maximum Green (s)	49.0	49.0						50.0		4.0	58.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.46	1.29						0.85			3.45dl	
Control Delay	20.8	156.5						25.1			186.1	
Queue Delay	0.8	0.0						2.3			34.4	
Total Delay	21.6	156.5						27.5			220.5	
Queue Length 50th (ft)	110	~837						268			~564	
Queue Length 95th (ft)	m107	m#629						m310			m#538	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	679	1928						1444			787	
Starvation Cap Reductn	0	0						17			42	
Spillback Cap Reductn	153	0						115			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.60	1.29						0.92			1.44	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

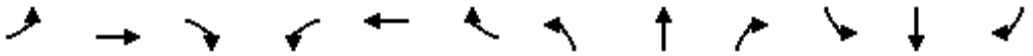




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	1934	433	0	0	0	0	830	337	314	705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.97						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.98	
Satd. Flow (prot)	1593	4451						2844			3032	
Flt Permitted	0.95	1.00						1.00			0.51	
Satd. Flow (perm)	1593	4451						2844			1562	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	2036	456	0	0	0	0	874	355	331	742	0
RTOR Reduction (vph)	0	31	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	314	2461	0	0	0	0	0	1220	0	0	1073	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	49.0	49.0						58.0			58.0	
Effective Green, g (s)	49.0	49.0						58.0			58.0	
Actuated g/C Ratio	0.43	0.43						0.50			0.50	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	679	1897						1434			788	
v/s Ratio Prot	0.20	c0.55						0.43				
v/s Ratio Perm											c0.69	
v/c Ratio	0.46	1.30						0.85			3.45dl	
Uniform Delay, d1	23.6	33.0						24.7			28.5	
Progression Factor	0.85	0.73						0.87			0.66	
Incremental Delay, d2	0.0	134.2						3.4			163.5	
Delay (s)	20.2	158.2						24.9			182.4	
Level of Service	C	F						C			F	
Approach Delay (s)		142.8			0.0			24.9			182.4	
Approach LOS		F			A			C			F	

Intersection Summary			
HCM Average Control Delay	122.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	131.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



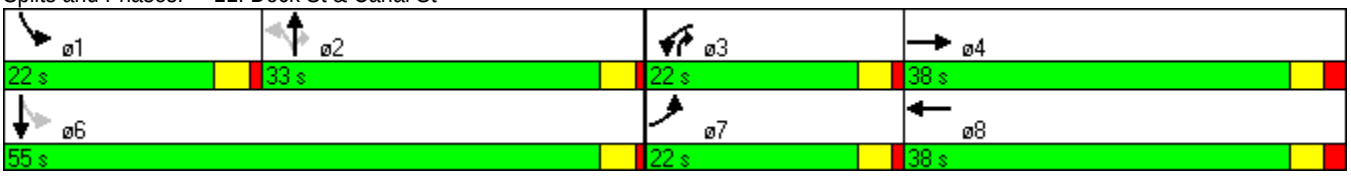
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	241	450	0	438	413	380	21	518	477	554	493	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.928				0.850		0.976	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1540	3079	0	1486	2857	0	0	3073	1378	1540	3005	0
Flt Permitted	0.950			0.950				0.914		0.212		
Satd. Flow (perm)	1540	3079	0	1486	2857	0	0	2814	1378	344	3005	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					204				96		24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	254	474	0	461	435	400	22	545	502	583	519	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	474	0	461	835	0	0	567	502	583	617	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	22.0	38.0	0.0	22.0	38.0	0.0	33.0	33.0	22.0	22.0	55.0	0.0
Total Split (%)	19.1%	33.0%	0.0%	19.1%	33.0%	0.0%	28.7%	28.7%	19.1%	19.1%	47.8%	0.0%
Maximum Green (s)	18.0	33.0		18.0	33.0		29.0	29.0	18.0	18.0	51.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

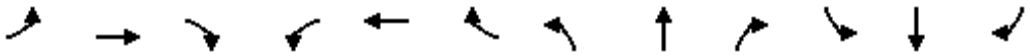
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.05	0.56		1.98	0.89			0.80	0.75	1.58	0.44	
Control Delay	118.0	50.8		482.8	42.3			49.9	29.9	287.6	19.4	
Queue Delay	0.0	0.0		0.0	0.0			0.5	0.0	0.0	0.6	
Total Delay	118.0	50.8		482.8	42.3			50.4	29.9	287.6	20.1	
Queue Length 50th (ft)	~209	172		~532	238			207	251	~561	140	
Queue Length 95th (ft)	#379	231		#735	#325			276	398	m#332	m98	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	241	910		233	988			710	665	369	1402	
Starvation Cap Reductn	0	0		0	0			0	0	0	421	
Spillback Cap Reductn	0	0		0	1			18	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	1.05	0.52		1.98	0.85			0.82	0.75	1.58	0.63	

Intersection Summary

Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	241	450	0	438	413	380	21	518	477	554	493	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.93			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2858			3073	1378	1540	3006	
Flt Permitted	0.95	1.00		0.95	1.00			0.91	1.00	0.21	1.00	
Satd. Flow (perm)	1540	3079		1486	2858			2813	1378	343	3006	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	254	474	0	461	435	400	22	545	502	583	519	98
RTOR Reduction (vph)	0	0	0	0	148	0	0	0	57	0	13	0
Lane Group Flow (vph)	254	474	0	461	687	0	0	567	445	583	604	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	18.0	30.8		18.0	30.8			29.0	47.0	53.2	53.2	
Effective Green, g (s)	18.0	31.8		18.0	31.8			29.0	47.0	53.2	53.2	
Actuated g/C Ratio	0.16	0.28		0.16	0.28			0.25	0.41	0.46	0.46	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	241	851		233	790			709	611	369	1391	
v/s Ratio Prot	0.16	0.15		c0.31	c0.24				0.11	c0.28	0.20	
v/s Ratio Perm								0.20	0.21	c0.45		
v/c Ratio	1.05	0.56		1.98	0.87			0.80	0.73	1.58	0.43	
Uniform Delay, d1	48.5	35.6		48.5	39.6			40.3	28.6	26.1	20.8	
Progression Factor	0.97	1.37		1.00	1.00			1.00	1.00	1.21	0.94	
Incremental Delay, d2	72.1	0.8		455.4	10.3			9.2	4.3	262.2	0.1	
Delay (s)	119.0	49.4		503.9	49.9			49.5	33.0	293.8	19.5	
Level of Service	F	D		F	D			D	C	F	B	
Approach Delay (s)		73.7			211.4			41.7			152.8	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	129.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	390	10	0	320	80	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.963	
Flt Protected					0.965	
Satd. Flow (prot)	1863	1583	0	1900	1731	0
Flt Permitted					0.965	
Satd. Flow (perm)	1863	1583	0	1900	1731	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	424	11	0	348	87	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	424	11	0	348	120	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	390	10	0	320	80	30
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	424	11	0	348	87	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.97	
vC, conflicting volume			435		772	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			435		753	424
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		76	95
cM capacity (veh/h)			1125		368	630

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	424	11	348	120
Volume Left	0	0	0	87
Volume Right	0	11	0	33
cSH	1700	1700	1125	415
Volume to Capacity	0.25	0.01	0.00	0.29
Queue Length 95th (ft)	0	0	0	29
Control Delay (s)	0.0	0.0	0.0	17.1
Lane LOS				C
Approach Delay (s)	0.0		0.0	17.1
Approach LOS				C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	420	0	20	320	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.997		
Satd. Flow (prot)	1863	0	0	1894	0	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1894	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	457	0	22	348	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	457	0	0	370	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	420	0	20	320	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	457	0	22	348	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.95	
vC, conflicting volume			457		848	457
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			457		812	457
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1104		324	604

Direction, Lane #	EB 1	WB 1
Volume Total	457	370
Volume Left	0	22
Volume Right	0	0
cSH	1700	1104
Volume to Capacity	0.27	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.7
Lane LOS		A
Approach Delay (s)	0.0	0.7
Approach LOS		

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		36.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	420	0	0	340	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	442	0	0	358	0	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	442	0	0	358	0	63
Sign Control	Free			Free	Stop	

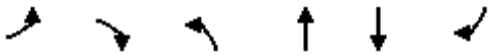
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

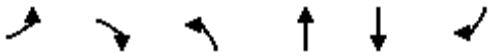
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	420	0	0	340	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	442	0	0	358	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.94	
vC, conflicting volume			442		800	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		753	442
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	90
cM capacity (veh/h)			1118		354	615

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	442	358	63
Volume Left	0	0	0
Volume Right	0	0	63
cSH	1700	1700	615
Volume to Capacity	0.26	0.21	0.10
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	11.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		



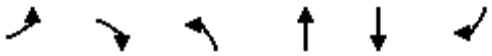
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	20	30	810	660	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.961					0.850
Flt Protected	0.966			0.998		
Satd. Flow (prot)	1729	0	0	1859	1863	1583
Flt Permitted	0.966			0.960		
Satd. Flow (perm)	1729	0	0	1788	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					33
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	54	22	33	880	717	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	0	0	913	717	33
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	31.0	0.0	84.0	84.0	84.0	84.0
Total Split (%)	27.0%	0.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	26.0		79.0	79.0	79.0	79.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.43			0.59	0.44	0.02
Control Delay	45.6			5.0	5.6	1.0
Queue Delay	0.0			0.3	1.2	0.0
Total Delay	45.6			5.4	6.9	1.0
Queue Length 50th (ft)	42			159	250	1
Queue Length 95th (ft)	87			307	m293	m4
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	419			1547	1612	1363
Starvation Cap Reductn	0			0	633	0
Spillback Cap Reductn	1			202	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.18			0.68	0.73	0.02

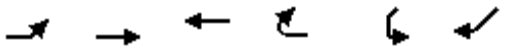
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	50	20	30	810	660	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.96			1.00	1.00	0.85
Flt Protected	0.97			1.00	1.00	1.00
Satd. Flow (prot)	1729			1859	1863	1583
Flt Permitted	0.97			0.96	1.00	1.00
Satd. Flow (perm)	1729			1789	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	33	880	717	33
RTOR Reduction (vph)	16	0	0	0	0	5
Lane Group Flow (vph)	60	0	0	913	717	28
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	8.3			96.7	96.7	96.7
Effective Green, g (s)	9.3			97.7	97.7	96.7
Actuated g/C Ratio	0.08			0.85	0.85	0.84
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	140			1520	1583	1331
v/s Ratio Prot	c0.03				0.38	
v/s Ratio Perm				c0.51		0.02
v/c Ratio	0.43			0.60	0.45	0.02
Uniform Delay, d1	50.3			2.7	2.1	1.5
Progression Factor	1.00			1.00	1.92	1.31
Incremental Delay, d2	2.1			1.8	0.7	0.0
Delay (s)	52.5			4.4	4.8	2.0
Level of Service	D			A	A	A
Approach Delay (s)	52.5			4.4	4.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

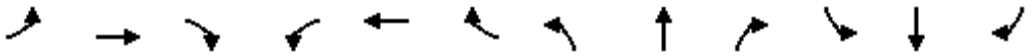


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	862	560	0	0	0	0	330	300	180	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.085		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	152	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			375						9			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	293	937	609	0	0	0	0	359	326	196	750	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	937	609	0	0	0	0	359	326	196	750	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	33.0	33.0	33.0	0.0	0.0	0.0	0.0	72.0	72.0	52.0	52.0	0.0
Total Split (%)	31.4%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%	68.6%	68.6%	49.5%	49.5%	0.0%
Maximum Green (s)	28.0	28.0	28.0							47.0	47.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	44.0	20.0	8.0
Total Split (%)	42%	19%	8%
Maximum Green (s)	39.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.63	1.00	0.88					0.29	0.32	2.88	0.49	
Control Delay	40.9	69.2	29.6					0.3	0.1	902.9	22.0	
Queue Delay	0.0	0.0	1.0					78.9	78.7	0.0	0.0	
Total Delay	40.9	69.2	30.5					79.2	78.9	902.9	22.0	
Queue Length 50th (ft)	173	~333	163					3	1	~185	183	
Queue Length 95th (ft)	266	#474	#384					m1	m0	#331	237	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	467	935	693					1238	1024	68	1517	
Starvation Cap Reductn	0	0	0					926	740	0	0	
Spillback Cap Reductn	0	0	14					0	0	0	15	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.63	1.00	0.90					1.15	1.15	2.88	0.50	

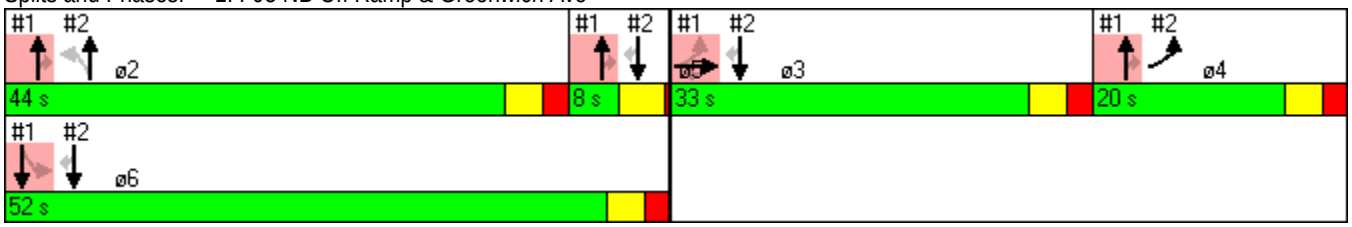
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave

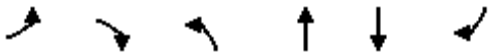


Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

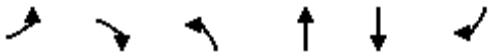
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	862	560	0	0	0	0	330	300	180	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	152	3388	
Peak-hour factor, PHF	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)	293	937	609	0	0	0	0	359	326	196	750	0
RTOR Reduction (vph)	0	0	275	0	0	0	0	0	3	0	0	0
Lane Group Flow (vph)	293	937	334	0	0	0	0	359	323	196	750	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Effective Green, g (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Actuated g/C Ratio	0.27	0.27	0.27					0.65	0.65	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	467	935	418					1256	1036	68	1517	
v/s Ratio Prot		c0.27						0.19			0.22	
v/s Ratio Perm	0.17		0.21						c0.20	c1.29		
v/c Ratio	0.63	1.00	0.80					0.29	0.31	2.88	0.49	
Uniform Delay, d1	33.9	38.5	35.9					8.0	8.2	29.0	20.6	
Progression Factor	1.00	1.00	1.00					0.03	0.01	1.00	1.00	
Incremental Delay, d2	3.0	29.9	10.8					0.0	0.0	885.8	0.3	
Delay (s)	36.9	68.4	46.7					0.2	0.1	914.8	20.9	
Level of Service	D	E	D					A	A	F	C	
Approach Delay (s)		56.2			0.0			0.2			206.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM Average Control Delay	86.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.88		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	240	70	70	390	890	360			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.966				0.994	0.850			
Flt Protected	0.963			0.992					
Satd. Flow (prot)	3362	0	0	1848	1759	1504			
Flt Permitted	0.963			0.159					
Satd. Flow (perm)	3362	0	0	296	1759	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	31				6	352			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	261	76	76	424	967	391			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	337	0	0	500	1006	352			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	44.0	44.0	93.0	93.0	33.0	8.0	52.0
Total Split (%)	19.0%	0.0%	41.9%	41.9%	88.6%	88.6%	31%	8%	50%
Maximum Green (s)	15.0		39.0	39.0			28.0	4.0	47.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.66			4.55	0.75	0.29			
Control Delay	45.7			1628.1	8.6	0.4			
Queue Delay	0.0			0.0	2.6	0.9			
Total Delay	45.7			1628.1	11.2	1.3			
Queue Length 50th (ft)	101			~563	454	0			
Queue Length 95th (ft)	150			#769	m608	m0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	507			110	1342	1230			
Starvation Cap Reductn	0			0	217	596			
Spillback Cap Reductn	0			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.66			4.55	0.89	0.56			

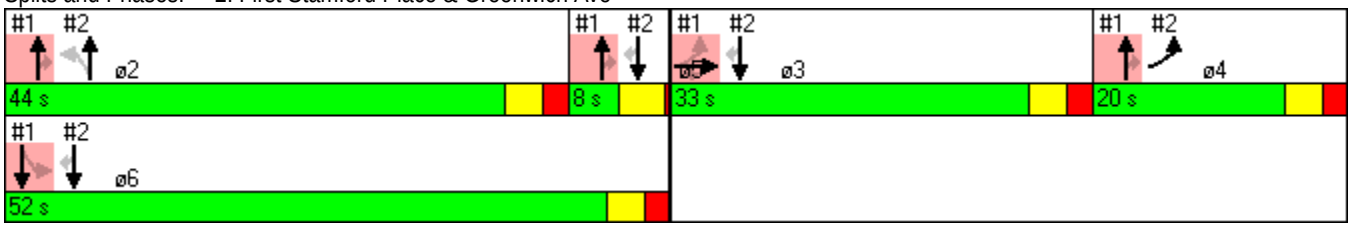
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

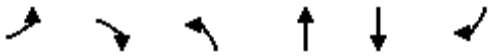
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

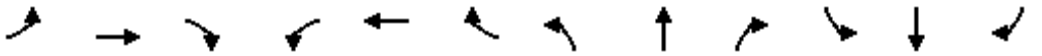
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	240	70	70	390	890	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.97			1.00	0.99	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	3361			1849	1759	1504
Flt Permitted	0.96			0.16	1.00	1.00
Satd. Flow (perm)	3361			296	1759	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	76	76	424	967	391
RTOR Reduction (vph)	27	0	0	0	2	97
Lane Group Flow (vph)	310	0	0	500	1004	255
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			39.0	80.0	80.0
Effective Green, g (s)	15.0			39.0	76.0	76.0
Actuated g/C Ratio	0.14			0.37	0.72	0.72
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	480			110	1273	1089
v/s Ratio Prot	c0.09				c0.57	
v/s Ratio Perm				c1.69		0.17
v/c Ratio	0.65			4.55	0.79	0.23
Uniform Delay, d1	42.5			33.0	9.3	4.8
Progression Factor	1.00			1.00	0.76	0.02
Incremental Delay, d2	3.3			1616.2	2.6	0.1
Delay (s)	45.8			1649.2	9.8	0.2
Level of Service	D			F	A	A
Approach Delay (s)	45.8			1649.2	7.3	
Approach LOS	D			F	A	

Intersection Summary			
HCM Average Control Delay	387.2	HCM Level of Service	F
HCM Volume to Capacity ratio	2.38		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

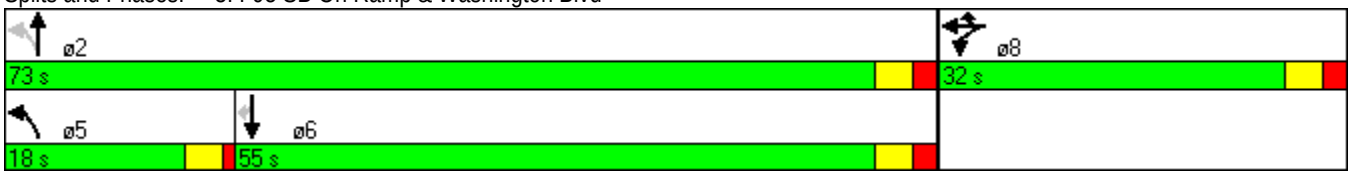


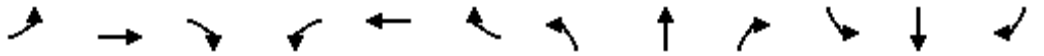
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	360	120	900	350	1033	0	0	1184	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.108					
Satd. Flow (perm)	0	0	0	1438	1513	1458	167	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						127						423
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	367	122	918	357	1054	0	0	1208	745
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	367	122	918	357	1054	0	0	1208	745
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	32.0	32.0	32.0	18.0	73.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	30.5%	30.5%	30.5%	17.1%	69.5%	0.0%	0.0%	52.4%	52.4%
Maximum Green (s)				27.0	27.0	27.0	14.0	68.0			50.0	50.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.99	0.31	1.96	1.26	0.55			0.81	0.84
Control Delay				58.7	39.7	455.7	138.6	9.5			28.9	20.1
Queue Delay				92.9	0.0	0.0	1.9	90.4			673.5	0.0
Total Delay				151.6	39.7	455.7	140.6	99.9			702.4	20.1
Queue Length 50th (ft)				221	68	~928	~249	269			353	197
Queue Length 95th (ft)				m157	m50	m#530	m#160	m197			448	#489
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				370	389	469	283	1901			1488	887
Starvation Cap Reductn				0	0	0	1	1018			0	0
Spillback Cap Reductn				74	0	0	0	0			1022	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				1.24	0.31	1.96	1.27	1.19			2.59	0.84

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 19 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
~ 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.	

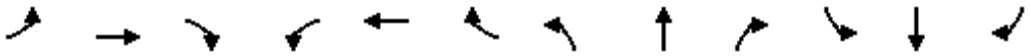
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	360	120	900	350	1033	0	0	1184	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	166	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	367	122	918	357	1054	0	0	1208	745
RTOR Reduction (vph)	0	0	0	0	0	94	0	0	0	0	0	222
Lane Group Flow (vph)	0	0	0	367	122	824	357	1054	0	0	1208	523
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Effective Green, g (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Actuated g/C Ratio				0.26	0.26	0.26	0.65	0.65			0.48	0.48
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				370	389	375	281	1901			1488	666
v/s Ratio Prot				0.26	0.08	c0.57	c0.17	0.36			0.39	
v/s Ratio Perm							c0.65					0.37
v/c Ratio				0.99	0.31	2.20	1.27	0.55			0.81	0.79
Uniform Delay, d1				38.9	31.5	39.0	28.3	10.2			23.5	23.0
Progression Factor				1.18	1.23	1.24	0.49	0.90			1.00	1.00
Incremental Delay, d2				12.2	0.1	539.2	124.4	0.1			4.9	9.1
Delay (s)				58.1	38.8	587.5	138.3	9.3			28.4	32.1
Level of Service				E	D	F	F	A			C	C
Approach Delay (s)		0.0			401.9			41.9			29.8	
Approach LOS		A			F			D			C	

Intersection Summary			
HCM Average Control Delay	143.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	185.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



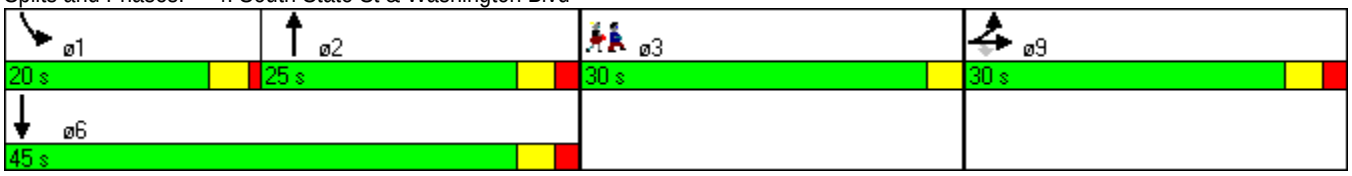
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	310	532	0	0	0	0	883	240	440	1104	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		1.00		
Frt			0.850					0.968				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3948	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1453	1545	1221	0	0	0	0	3948	0	2736	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			472					58				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	610	378	649	0	0	0	0	1077	293	537	1346	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	610	378	649	0	0	0	0	1370	0	537	1346	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	25.0	0.0	20.0	45.0	0.0
Total Split (%)	28.6%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%	23.8%	0.0%	19.0%	42.9%	0.0%
Maximum Green (s)	25.0	25.0	25.0					20.0		16.0	40.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.79	0.47	0.75					1.71		1.28	1.25	
Control Delay	29.8	18.2	11.3					354.6		173.8	146.9	
Queue Delay	0.3	0.0	0.2					273.3		9.6	338.3	
Total Delay	30.0	18.2	11.5					627.9		183.4	485.2	
Queue Length 50th (ft)	319	153	74					~501		~239	~611	
Queue Length 95th (ft)	404	202	151					m#448		m#290	m#641	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	769	809	864					799		419	1080	
Starvation Cap Reductn	0	0	0					0		7	407	
Spillback Cap Reductn	13	0	15					209		0	66	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.81	0.47	0.76					2.32		1.30	2.00	

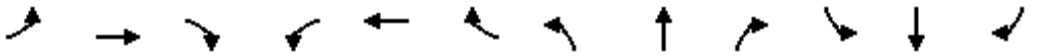
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 59 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after 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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	310	532	0	0	0	0	883	240	440	1104	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1263					3948		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1263					3948		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	610	378	649	0	0	0	0	1077	293	537	1346	0
RTOR Reduction (vph)	0	0	225	0	0	0	0	47	0	0	0	0
Lane Group Flow (vph)	610	378	424	0	0	0	0	1323	0	537	1346	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Effective Green, g (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Actuated g/C Ratio	0.52	0.52	0.52					0.19		0.15	0.38	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	769	809	662					752		419	1080	
v/s Ratio Prot	c0.42	0.24						c0.34		0.20	c0.47	
v/s Ratio Perm			0.34									
v/c Ratio	0.79	0.47	0.64					1.76		1.28	1.25	
Uniform Delay, d1	20.4	15.8	17.9					42.5		44.5	32.5	
Progression Factor	1.00	1.00	1.00					1.18		0.90	1.01	
Incremental Delay, d2	8.2	1.9	4.7					344.4		138.9	116.3	
Delay (s)	28.6	17.7	22.6					394.5		179.0	149.1	
Level of Service	C	B	C					F		F	F	
Approach Delay (s)		23.7			0.0			394.5			157.6	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	179.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	185.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	120	273	850	121	726	910	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.981				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3009	0	1561	3123	
Flt Permitted	0.950				0.105		
Satd. Flow (perm)	1578	2361	3009	0	173	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		314	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	138	314	977	139	834	1046	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	138	314	1116	0	834	1046	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	30.0	39.0	0.0	30.0	69.0	20.0
Total Split (%)	15.2%	28.6%	37.1%	0.0%	28.6%	65.7%	19%
Maximum Green (s)	11.0	26.0	34.0		26.0	64.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.85	0.21	1.13		1.11	0.42	
Control Delay	87.0	1.4	106.3		66.4	1.5	
Queue Delay	0.0	1.0	272.5		100.9	5.0	
Total Delay	87.0	2.4	378.7		167.3	6.5	
Queue Length 50th (ft)	92	0	~458		~610	20	
Queue Length 95th (ft)	#190	16	#560		m#515	m21	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	165	1523	985		750	2503	
Starvation Cap Reductn	0	0	0		129	1373	
Spillback Cap Reductn	0	942	345		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.84	0.54	1.74		1.34	0.93	

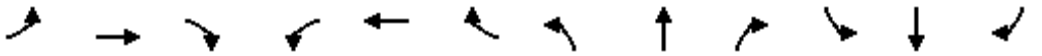
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 7 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after 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: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	120	273	850	121	726	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3010		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3010		173	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	138	314	977	139	834	1046
RTOR Reduction (vph)	0	144	11	0	0	0
Lane Group Flow (vph)	138	170	1105	0	834	1046
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.8	57.0	34.0		84.2	84.2
Effective Green, g (s)	10.8	57.0	34.0		84.2	84.2
Actuated g/C Ratio	0.10	0.54	0.32		0.80	0.80
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	162	1282	975		749	2504
v/s Ratio Prot	c0.09	0.06	0.37		c0.49	0.33
v/s Ratio Perm		0.01			c0.40	
v/c Ratio	0.85	0.13	1.13		1.11	0.42
Uniform Delay, d1	46.3	11.8	35.5		25.5	3.1
Progression Factor	1.00	1.00	1.00		0.38	0.44
Incremental Delay, d2	32.6	0.0	73.0		53.1	0.0
Delay (s)	78.9	11.9	108.5		62.8	1.4
Level of Service	E	B	F		E	A
Approach Delay (s)	32.3		108.5			28.6
Approach LOS	C		F			C

Intersection Summary			
HCM Average Control Delay	55.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

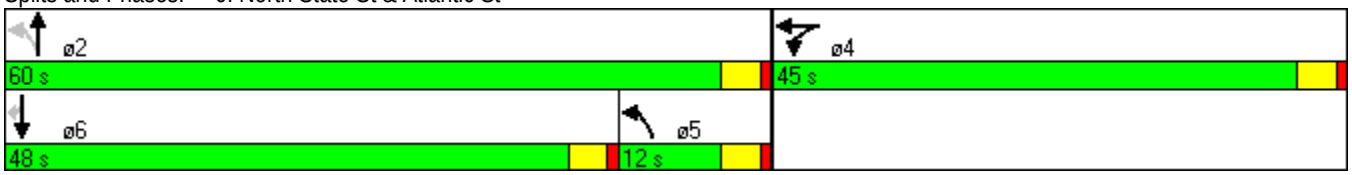


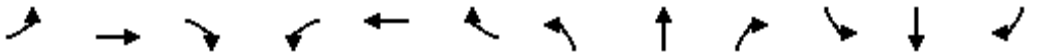
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	495	2190	300	480	1013	0	0	579	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.985							0.850
Flt Protected					0.992			0.984				
Satd. Flow (prot)	0	0	0	0	5635	0	0	3030	0	0	3504	1425
Flt Permitted					0.992			0.585				
Satd. Flow (perm)	0	0	0	0	5635	0	0	1801	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30							20
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	596	2639	361	578	1220	0	0	698	675
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3596	0	0	1798	0	0	698	675
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	12.0	60.0	0.0	0.0	48.0	48.0
Total Split (%)	0.0%	0.0%	0.0%	42.9%	42.9%	0.0%	11.4%	57.1%	0.0%	0.0%	45.7%	45.7%
Maximum Green (s)				41.0	41.0		8.0	56.0			44.0	44.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.62			2.04dl			0.37	0.88
Control Delay					305.0			417.5			15.0	35.7
Queue Delay					189.6			281.9			0.0	0.0
Total Delay					494.6			699.4			15.0	35.7
Queue Length 50th (ft)					~999			~981			136	370
Queue Length 95th (ft)					m#607			m#573			160	483
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2219			961			1869	769
Starvation Cap Reductn					0			279			0	0
Spillback Cap Reductn					458			0			75	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					2.04			2.64			0.39	0.88

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: North State St & Atlantic St

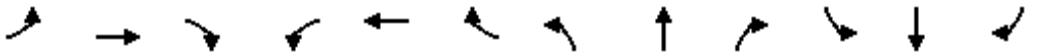




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	495	2190	300	480	1013	0	0	579	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.98			1.00	1.00
Satd. Flow (prot)					5634			3030			3504	1425
Flt Permitted					0.99			0.58			1.00	1.00
Satd. Flow (perm)					5634			1801			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	596	2639	361	578	1220	0	0	698	675
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	0	0	0	3578	0	0	1798	0	0	698	666
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					41.0			56.0			56.0	56.0
Effective Green, g (s)					41.0			56.0			56.0	56.0
Actuated g/C Ratio					0.39			0.53			0.53	0.53
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2200			961			1869	760
v/s Ratio Prot					c0.64						0.20	
v/s Ratio Perm								c1.00				0.47
v/c Ratio					1.63			2.04dl			0.37	0.88
Uniform Delay, d1					32.0			24.5			14.3	21.5
Progression Factor					0.95			1.47			1.00	1.00
Incremental Delay, d2					282.0			392.3			0.6	13.5
Delay (s)					312.3			428.3			14.8	34.9
Level of Service					F			F			B	C
Approach Delay (s)		0.0			312.3			428.3			24.7	
Approach LOS		A			F			F			C	

Intersection Summary			
HCM Average Control Delay	284.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.77		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	144.3%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

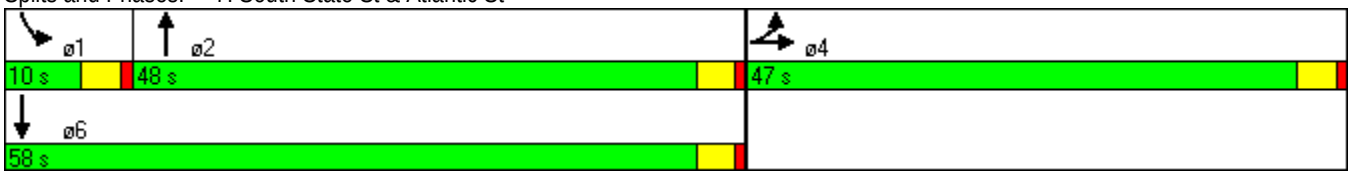


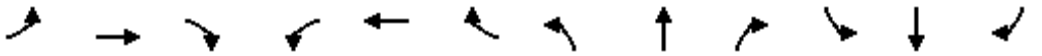
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1040	1520	390	0	0	0	0	450	340	185	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.975						0.942				
Flt Protected	0.950	0.990								0.950		
Satd. Flow (prot)	1247	5068	0	0	0	0	0	1737	0	2987	1621	0
Flt Permitted	0.950	0.990								0.950		
Satd. Flow (perm)	1247	5068	0	0	0	0	0	1737	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		57										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1333	1949	500	0	0	0	0	577	436	237	1108	0
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	746	3036	0	0	0	0	0	1013	0	237	1108	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	10.0	58.0	0.0
Total Split (%)	44.8%	44.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45.7%	0.0%	9.5%	55.2%	0.0%
Maximum Green (s)	43.0	43.0						44.0		6.0	54.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.46	1.44						1.39		1.39	1.33	
Control Delay	245.1	225.5						212.4		226.8	175.3	
Queue Delay	464.8	125.3						461.4		0.0	21.4	
Total Delay	709.8	350.8						673.8		226.8	196.7	
Queue Length 50th (ft)	~850	~521						~911		~109	~991	
Queue Length 95th (ft)	#920	m261						#935		m#106	m#726	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	511	2109						728		171	834	
Starvation Cap Reductn	0	0						155		0	29	
Spillback Cap Reductn	332	342						309		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	4.17	1.72						2.42		1.39	1.38	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

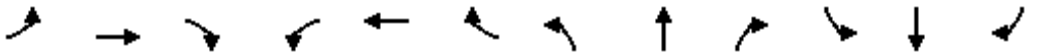




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1040	1520	390	0	0	0	0	450	340	185	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.98						0.94		1.00	1.00	
Flt Protected	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5072						1737		2987	1621	
Flt Permitted	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5072						1737		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1333	1949	500	0	0	0	0	577	436	237	1108	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	746	3002	0	0	0	0	0	1013	0	237	1108	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	43.0	43.0						44.0		6.0	54.0	
Effective Green, g (s)	43.0	43.0						44.0		6.0	54.0	
Actuated g/C Ratio	0.41	0.41						0.42		0.06	0.51	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	511	2077						728		171	834	
v/s Ratio Prot	c0.60	0.59						0.58		0.08	c0.68	
v/s Ratio Perm												
v/c Ratio	1.46	1.45						1.39		1.39	1.33	
Uniform Delay, d1	31.0	31.0						30.5		49.5	25.5	
Progression Factor	1.00	1.12						1.00		1.05	0.89	
Incremental Delay, d2	217.6	203.2						184.6		187.5	151.2	
Delay (s)	248.6	237.8						215.1		239.6	174.0	
Level of Service	F	F						F		F	F	
Approach Delay (s)		240.0			0.0			215.1			185.5	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	223.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



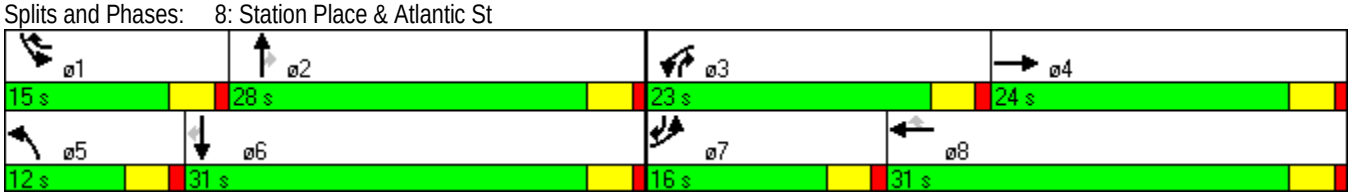
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	122	70	277	256	150	80	572	171	100	739	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.945				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				163			186			296
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	77	133	76	301	278	163	87	622	186	109	803	408
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	209	0	301	278	163	87	622	186	109	803	408
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	16.0	24.0	0.0	23.0	31.0	15.0	12.0	28.0	23.0	15.0	31.0	16.0
Total Split (%)	17.8%	26.7%	0.0%	25.6%	34.4%	16.7%	13.3%	31.1%	25.6%	16.7%	34.4%	17.8%
Maximum Green (s)	12.0	20.0		19.0	27.0	11.0	8.0	24.0	19.0	11.0	27.0	12.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

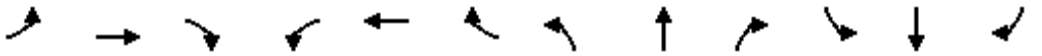
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.48	0.55		0.93	0.53	0.22	0.64	0.70	0.22	0.64	0.79	0.50
Control Delay	47.5	32.7		72.9	29.7	3.1	61.9	34.2	2.5	55.9	35.7	6.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	2.6	0.5	0.0	4.6	0.7
Total Delay	47.5	32.7		72.9	29.7	3.1	61.9	36.9	2.9	55.9	40.3	7.6
Queue Length 50th (ft)	42	90		169	128	0	49	169	0	59	226	37
Queue Length 95th (ft)	84	162		#324	214	33	#114	231	30	#122	#331	104
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	202	382		325	529	762	142	893	850	188	1012	844
Starvation Cap Reductn	0	0		0	0	0	0	163	358	0	146	183
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.55		0.93	0.53	0.21	0.61	0.85	0.38	0.58	0.93	0.62

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	122	70	277	256	150	80	572	171	100	739	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1617		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1617		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	77	133	76	301	278	163	87	622	186	109	803	408
RTOR Reduction (vph)	0	23	0	0	0	92	0	0	95	0	0	170
Lane Group Flow (vph)	77	186	0	301	278	71	87	622	91	109	803	238
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	9.5	20.1		18.8	29.4	39.3	6.4	25.2	44.0	9.9	28.7	38.2
Effective Green, g (s)	9.5	20.1		18.8	29.4	39.3	6.4	25.2	44.0	9.9	28.7	38.2
Actuated g/C Ratio	0.11	0.22		0.21	0.33	0.44	0.07	0.28	0.49	0.11	0.32	0.42
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	160	361		322	530	663	113	892	760	169	982	646
v/s Ratio Prot	0.05	0.12		c0.20	c0.17	0.01	0.05	0.20	0.02	c0.07	c0.26	0.04
v/s Ratio Perm						0.04			0.04			0.13
v/c Ratio	0.48	0.52		0.93	0.52	0.11	0.77	0.70	0.12	0.64	0.82	0.37
Uniform Delay, d1	37.9	30.7		35.0	24.6	15.0	41.1	29.0	12.5	38.4	28.2	17.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.3		33.3	0.9	0.1	26.5	4.5	0.1	8.2	7.5	0.4
Delay (s)	40.2	31.9		68.3	25.6	15.1	67.6	33.5	12.6	46.5	35.8	18.0
Level of Service	D	C		E	C	B	E	C	B	D	D	B
Approach Delay (s)		34.2			40.6			32.5			31.2	
Approach LOS		C			D			C			C	

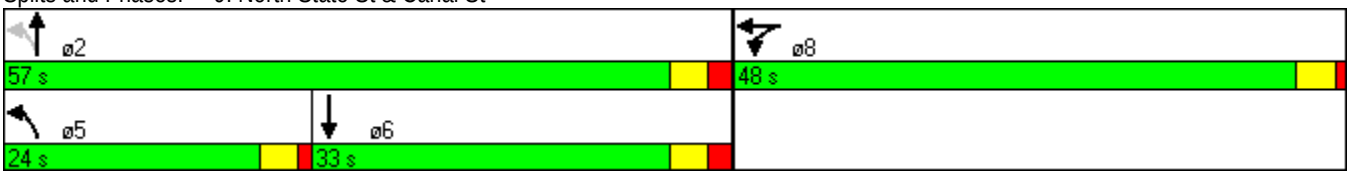
Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

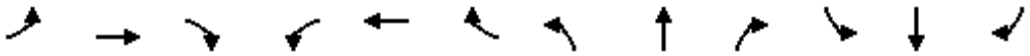
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	385	2405	300	480	672	0	0	839	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.985						0.970	
Flt Protected					0.994		0.950					
Satd. Flow (prot)	0	0	0	0	5458	0	1540	3079	0	0	2987	0
Flt Permitted					0.994		0.125					
Satd. Flow (perm)	0	0	0	0	5458	0	203	3079	0	0	2987	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30						19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	405	2532	316	505	707	0	0	883	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3253	0	505	707	0	0	1104	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	24.0	57.0	0.0	0.0	33.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	22.9%	54.3%	0.0%	0.0%	31.4%	0.0%
Maximum Green (s)				44.0	44.0		20.0	52.0			28.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.41		1.41	0.46			1.36	
Control Delay					215.2		220.4	16.9			203.2	
Queue Delay					210.0		105.5	3.6			124.4	
Total Delay					425.2		325.9	20.5			327.7	
Queue Length 50th (ft)					~861		~406	163			~515	
Queue Length 95th (ft)					#931		m#558	m192			#648	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					2305		357	1525			810	
Starvation Cap Reductn					0		51	706			0	
Spillback Cap Reductn					573		0	0			137	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.88		1.65	0.86			1.64	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St

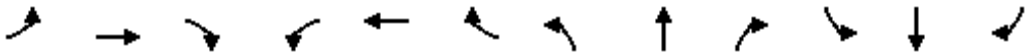




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	385	2405	300	480	672	0	0	839	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5460		1540	3079			2987	
Flt Permitted					0.99		0.12	1.00			1.00	
Satd. Flow (perm)					5460		203	3079			2987	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	405	2532	316	505	707	0	0	883	221
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	3236	0	505	707	0	0	1090	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					44.0		52.0	52.0			28.0	
Effective Green, g (s)					44.0		52.0	52.0			28.0	
Actuated g/C Ratio					0.42		0.50	0.50			0.27	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2288		355	1525			797	
v/s Ratio Prot					c0.59		c0.27	0.23			0.36	
v/s Ratio Perm							c0.43					
v/c Ratio					1.41		1.42	0.46			1.37	
Uniform Delay, d1					30.5		31.2	17.4			38.5	
Progression Factor					1.00		0.71	0.92			1.00	
Incremental Delay, d2					189.0		201.2	0.7			173.5	
Delay (s)					219.5		223.5	16.7			212.0	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			219.5			102.8			212.0	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM Average Control Delay	192.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	124.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

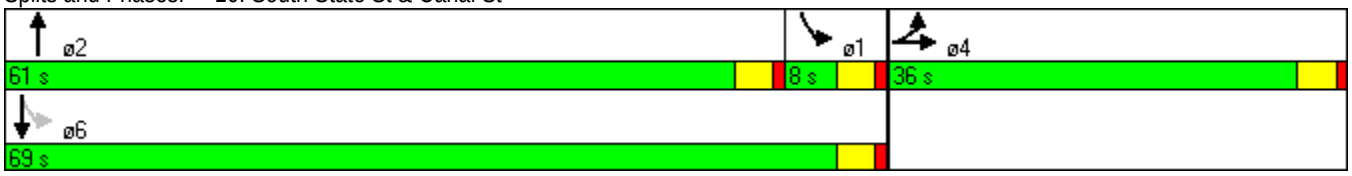


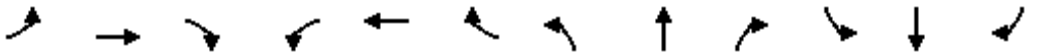
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1060	560	0	0	0	0	722	260	340	884	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.948						0.960				
Flt Protected	0.950										0.986	
Satd. Flow (prot)	1593	4339	0	0	0	0	0	2854	0	0	3036	0
Flt Permitted	0.950										0.533	
Satd. Flow (perm)	1593	4339	0	0	0	0	0	2854	0	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		130						38				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	453	1116	589	0	0	0	0	760	274	358	931	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	453	1705	0	0	0	0	0	1034	0	0	1289	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	36.0	36.0	0.0	0.0	0.0	0.0	0.0	61.0	0.0	8.0	69.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	0.0%	7.6%	65.7%	0.0%
Maximum Green (s)	32.0	32.0						57.0		4.0	65.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.93	1.21						0.58			1.62dl	
Control Delay	47.2	129.4						13.0			147.7	
Queue Delay	35.9	0.0						1.6			170.1	
Total Delay	83.1	129.4						14.6			317.8	
Queue Length 50th (ft)	248	~478						192			~591	
Queue Length 95th (ft)	m170	m215						251			m171	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1413						1781			1016	
Starvation Cap Reductn	0	0						533			234	
Spillback Cap Reductn	64	0						197			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	1.08	1.21						0.83			1.65	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

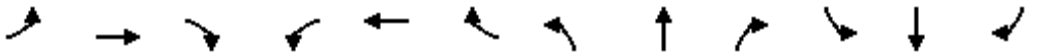




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1060	560	0	0	0	0	722	260	340	884	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.95						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.99	
Satd. Flow (prot)	1593	4340						2855			3037	
Flt Permitted	0.95	1.00						1.00			0.53	
Satd. Flow (perm)	1593	4340						2855			1641	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	1116	589	0	0	0	0	760	274	358	931	0
RTOR Reduction (vph)	0	90	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	453	1615	0	0	0	0	0	1020	0	0	1289	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	32.0	32.0						65.0			65.0	
Effective Green, g (s)	32.0	32.0						65.0			65.0	
Actuated g/C Ratio	0.30	0.30						0.62			0.62	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	485	1323						1767			1016	
v/s Ratio Prot	0.28	c0.37						0.36				
v/s Ratio Perm											c0.79	
v/c Ratio	0.93	1.22						0.58			1.62dl	
Uniform Delay, d1	35.5	36.5						11.9			20.0	
Progression Factor	1.19	1.20						1.00			1.29	
Incremental Delay, d2	3.7	99.9						1.4			121.7	
Delay (s)	46.1	143.5						13.2			147.5	
Level of Service	D	F						B			F	
Approach Delay (s)		123.1			0.0			13.2			147.5	
Approach LOS		F			A			B			F	

Intersection Summary			
HCM Average Control Delay	104.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

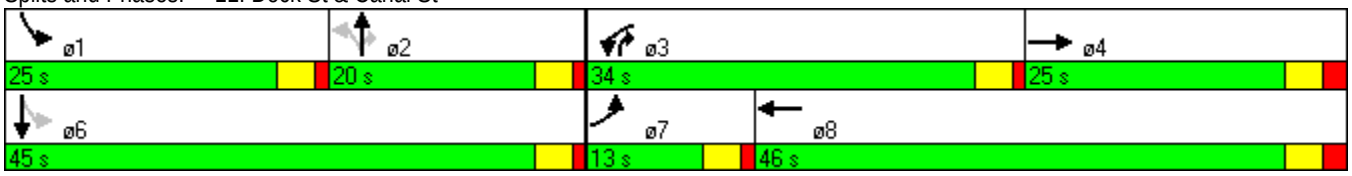


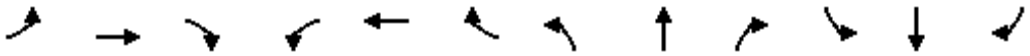
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	321	0	400	709	520	0	410	240	450	820	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.937				0.850		0.974	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1540	3079	0	1486	2885	0	0	3079	1378	1540	2999	0
Flt Permitted	0.950			0.950						0.208		
Satd. Flow (perm)	1540	3079	0	1486	2885	0	0	3079	1378	337	2999	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					213				101		28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	55	338	0	421	746	547	0	432	253	474	863	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	338	0	421	1293	0	0	432	253	474	1046	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	13.0	25.0	0.0	34.0	46.0	0.0	20.0	20.0	34.0	25.0	45.0	0.0
Total Split (%)	12.5%	24.0%	0.0%	32.7%	44.2%	0.0%	19.2%	19.2%	32.7%	24.0%	43.3%	0.0%
Maximum Green (s)	9.0	20.0		30.0	41.0		16.0	16.0	30.0	21.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.46	0.54		0.98	0.95			0.91	0.35	1.26	0.87	
Control Delay	58.4	41.0		77.2	39.8			68.5	11.4	164.4	37.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	18.5	
Total Delay	58.4	41.0		77.2	39.8			68.5	11.4	164.4	56.3	
Queue Length 50th (ft)	35	106		277	~393			150	57	~353	324	
Queue Length 95th (ft)	76	153		#478	#562			#243	115	#556	#435	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	133	622		429	1366			474	715	376	1199	
Starvation Cap Reductn	0	0		0	0			0	0	0	176	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.41	0.54		0.98	0.95			0.91	0.35	1.26	1.02	

Intersection Summary	
Area Type:	CBD
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 12 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	321	0	400	709	520	0	410	240	450	820	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2884			3079	1378	1540	2998	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.21	1.00	
Satd. Flow (perm)	1540	3079		1486	2884			3079	1378	338	2998	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	338	0	421	746	547	0	432	253	474	863	183
RTOR Reduction (vph)	0	0	0	0	121	0	0	0	57	0	17	0
Lane Group Flow (vph)	55	338	0	421	1172	0	0	432	196	474	1029	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	6.9	20.8		30.0	43.9			15.2	45.2	40.2	40.2	
Effective Green, g (s)	6.9	21.8		30.0	44.9			15.2	45.2	40.2	40.2	
Actuated g/C Ratio	0.07	0.21		0.29	0.43			0.15	0.43	0.39	0.39	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	102	645		429	1245			450	652	373	1159	
v/s Ratio Prot	0.04	0.11		c0.28	c0.41			0.14	0.09	c0.26	0.34	
v/s Ratio Perm									0.06	c0.23		
v/c Ratio	0.54	0.52		0.98	0.94			0.96	0.30	1.27	0.89	
Uniform Delay, d1	47.0	36.5		36.7	28.3			44.1	19.1	28.5	29.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.4	0.8		38.4	13.8			33.5	0.3	141.4	10.2	
Delay (s)	52.4	37.3		75.1	42.1			77.6	19.4	169.9	40.0	
Level of Service	D	D		E	D			E	B	F	D	
Approach Delay (s)		39.4			50.2			56.1			80.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	60.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	472	255	6	520	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1863	1583	0	1898	1735	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1863	1583	0	1898	1735	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	513	277	7	565	3	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	513	277	0	572	4	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	472	255	6	520	3	1
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	513	277	7	565	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.99	
vC, conflicting volume			790		1091	513
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			790		1088	513
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			830		235	561

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	513	277	572	4
Volume Left	0	0	7	3
Volume Right	0	277	0	1
cSH	1700	1700	830	275
Volume to Capacity	0.30	0.16	0.01	0.02
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.0	0.0	0.2	18.3
Lane LOS			A	C
Approach Delay (s)	0.0		0.2	18.3
Approach LOS				C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	261	212	185	526	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.940					
Flt Protected				0.987		
Satd. Flow (prot)	1751	0	0	1875	0	0
Flt Permitted				0.987		
Satd. Flow (perm)	1751	0	0	1875	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	284	230	201	572	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	514	0	0	773	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	261	212	185	526	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	284	230	201	572	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.89	
vC, conflicting volume			514		1373	399
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			514		1356	399
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			81		100	100
cM capacity (veh/h)			1051		118	651

Direction, Lane #	EB 1	WB 1
Volume Total	514	773
Volume Left	0	201
Volume Right	230	0
cSH	1700	1051
Volume to Capacity	0.30	0.19
Queue Length 95th (ft)	0	18
Control Delay (s)	0.0	4.4
Lane LOS		A
Approach Delay (s)	0.0	4.4
Approach LOS		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	261	0	0	711	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	180	
Travel Time (s)	4.4			6.5	4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	275	0	0	748	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	275	0	0	748	0	2
Sign Control	Free			Free	Stop	

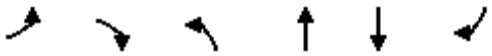
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

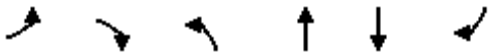
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	261	0	0	711	0	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	275	0	0	748	0	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.87	
vC, conflicting volume			275		1023	275
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			275		955	275
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1288		251	764

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	275	748	2
Volume Left	0	0	0
Volume Right	0	0	2
cSH	1700	1700	764
Volume to Capacity	0.16	0.44	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		



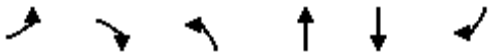
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	63	20	42	760	920	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.967					0.850
Flt Protected	0.964			0.997		
Satd. Flow (prot)	1736	0	0	1857	1863	1583
Flt Permitted	0.964			0.913		
Satd. Flow (perm)	1736	0	0	1701	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12					180
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	68	22	46	826	1000	180
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	0	0	872	1000	180
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	15.0	0.0	90.0	90.0	90.0	90.0
Total Split (%)	14.3%	0.0%	85.7%	85.7%	85.7%	85.7%
Maximum Green (s)	10.0		85.0	85.0	85.0	85.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.51			0.60	0.63	0.13
Control Delay	49.1			5.1	5.3	0.5
Queue Delay	0.0			0.0	5.2	0.5
Total Delay	49.1			5.1	10.5	1.1
Queue Length 50th (ft)	50			162	195	0
Queue Length 95th (ft)	101			242	289	10
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	193			1460	1599	1374
Starvation Cap Reductn	0			0	526	870
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.47			0.60	0.93	0.36

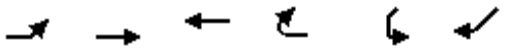
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 85 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	63	20	42	760	920	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1736			1858	1863	1583
Flt Permitted	0.96			0.91	1.00	1.00
Satd. Flow (perm)	1736			1700	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	22	46	826	1000	180
RTOR Reduction (vph)	11	0	0	0	0	30
Lane Group Flow (vph)	79	0	0	872	1000	150
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	7.7			87.3	87.3	87.3
Effective Green, g (s)	8.7			88.3	88.3	87.3
Actuated g/C Ratio	0.08			0.84	0.84	0.83
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	144			1430	1567	1316
v/s Ratio Prot	c0.05				c0.54	
v/s Ratio Perm				0.51		0.09
v/c Ratio	0.55			0.61	0.64	0.11
Uniform Delay, d1	46.3			2.7	2.9	1.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	4.2			1.9	2.0	0.2
Delay (s)	50.5			4.7	4.9	1.8
Level of Service	D			A	A	A
Approach Delay (s)	50.5			4.7	4.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

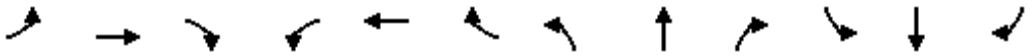


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	860	560	0	0	0	0	330	300	180	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.085		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	152	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			375						9			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	293	935	609	0	0	0	0	359	326	196	750	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	935	609	0	0	0	0	359	326	196	750	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	33.0	33.0	33.0	0.0	0.0	0.0	0.0	72.0	72.0	52.0	52.0	0.0
Total Split (%)	31.4%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%	68.6%	68.6%	49.5%	49.5%	0.0%
Maximum Green (s)	28.0	28.0	28.0							47.0	47.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	44.0	20.0	8.0
Total Split (%)	42%	19%	8%
Maximum Green (s)	39.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.63	1.00	0.88					0.29	0.32	2.88	0.49	
Control Delay	40.9	68.7	29.6					0.3	0.1	902.9	22.0	
Queue Delay	0.0	0.0	1.0					78.9	78.7	0.0	0.0	
Total Delay	40.9	68.7	30.5					79.2	78.9	902.9	22.0	
Queue Length 50th (ft)	173	~331	163					3	1	~185	183	
Queue Length 95th (ft)	266	#472	#384					m1	m0	#331	237	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	467	935	693					1238	1024	68	1517	
Starvation Cap Reductn	0	0	0					926	740	0	0	
Spillback Cap Reductn	0	0	14					0	0	0	15	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.63	1.00	0.90					1.15	1.15	2.88	0.50	

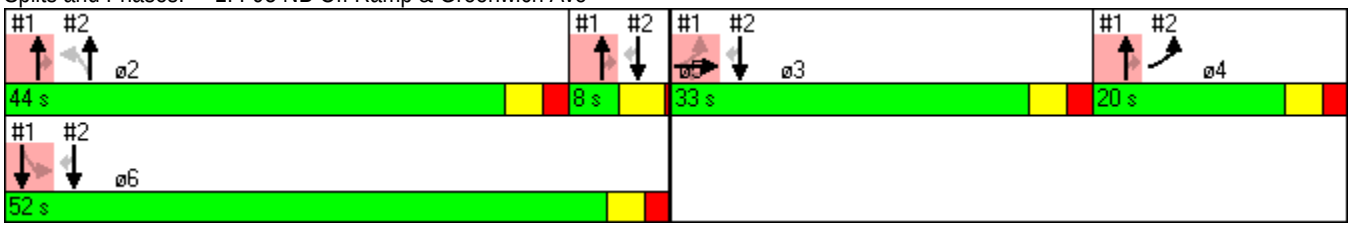
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave

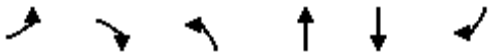


Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

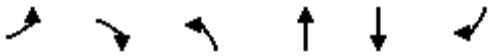
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	860	560	0	0	0	0	330	300	180	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.09	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	152	3388	
Peak-hour factor, PHF	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)	293	935	609	0	0	0	0	359	326	196	750	0
RTOR Reduction (vph)	0	0	275	0	0	0	0	0	3	0	0	0
Lane Group Flow (vph)	293	935	334	0	0	0	0	359	323	196	750	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Effective Green, g (s)	28.0	28.0	28.0					68.0	68.0	47.0	47.0	
Actuated g/C Ratio	0.27	0.27	0.27					0.65	0.65	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	467	935	418					1256	1036	68	1517	
v/s Ratio Prot		c0.27						0.19			0.22	
v/s Ratio Perm	0.17		0.21						c0.20	c1.29		
v/c Ratio	0.63	1.00	0.80					0.29	0.31	2.88	0.49	
Uniform Delay, d1	33.9	38.5	35.9					8.0	8.2	29.0	20.6	
Progression Factor	1.00	1.00	1.00					0.03	0.01	1.00	1.00	
Incremental Delay, d2	3.0	29.4	10.8					0.0	0.0	885.8	0.3	
Delay (s)	36.9	67.9	46.7					0.2	0.1	914.8	20.9	
Level of Service	D	E	D					A	A	F	C	
Approach Delay (s)		55.9			0.0			0.2			206.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM Average Control Delay	85.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.88		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	240	70	70	390	890	360			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.966				0.994	0.850			
Flt Protected	0.963			0.992					
Satd. Flow (prot)	3362	0	0	1848	1759	1504			
Flt Permitted	0.963			0.159					
Satd. Flow (perm)	3362	0	0	296	1759	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	31				6	352			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	261	76	76	424	967	391			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	337	0	0	500	1006	352			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	44.0	44.0	93.0	93.0	33.0	8.0	52.0
Total Split (%)	19.0%	0.0%	41.9%	41.9%	88.6%	88.6%	31%	8%	50%
Maximum Green (s)	15.0		39.0	39.0			28.0	4.0	47.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	0.66			4.55	0.75	0.29			
Control Delay	45.7			1628.1	8.6	0.4			
Queue Delay	0.0			0.0	2.6	0.9			
Total Delay	45.7			1628.1	11.2	1.3			
Queue Length 50th (ft)	101			~563	454	0			
Queue Length 95th (ft)	150			#769	m608	m0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	507			110	1342	1230			
Starvation Cap Reductn	0			0	217	596			
Spillback Cap Reductn	0			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	0.66			4.55	0.89	0.56			

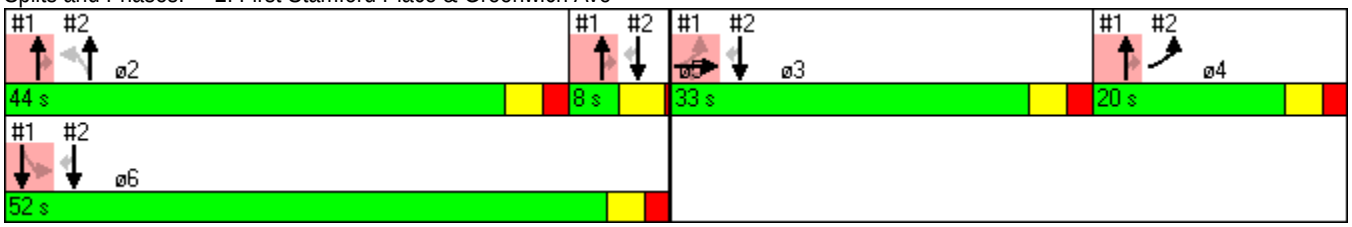
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

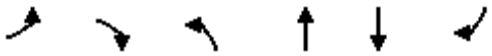
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	240	70	70	390	890	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.97			1.00	0.99	0.85
Flt Protected	0.96			0.99	1.00	1.00
Satd. Flow (prot)	3361			1849	1759	1504
Flt Permitted	0.96			0.16	1.00	1.00
Satd. Flow (perm)	3361			296	1759	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	76	76	424	967	391
RTOR Reduction (vph)	27	0	0	0	2	97
Lane Group Flow (vph)	310	0	0	500	1004	255
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			39.0	80.0	80.0
Effective Green, g (s)	15.0			39.0	76.0	76.0
Actuated g/C Ratio	0.14			0.37	0.72	0.72
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	480			110	1273	1089
v/s Ratio Prot	c0.09				c0.57	
v/s Ratio Perm				c1.69		0.17
v/c Ratio	0.65			4.55	0.79	0.23
Uniform Delay, d1	42.5			33.0	9.3	4.8
Progression Factor	1.00			1.00	0.76	0.02
Incremental Delay, d2	3.3			1616.2	2.6	0.1
Delay (s)	45.8			1649.2	9.8	0.2
Level of Service	D			F	A	A
Approach Delay (s)	45.8			1649.2	7.3	
Approach LOS	D			F	A	

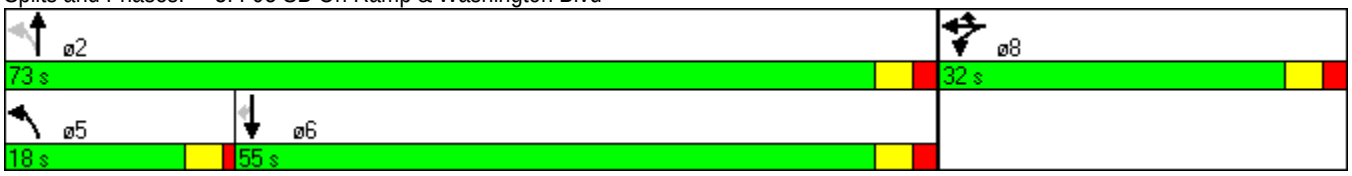
Intersection Summary			
HCM Average Control Delay	387.2	HCM Level of Service	F
HCM Volume to Capacity ratio	2.38		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

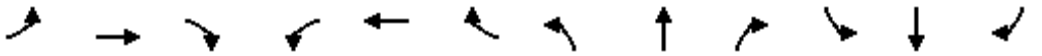
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	360	120	900	350	1030	0	0	1160	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.114					
Satd. Flow (perm)	0	0	0	1438	1513	1458	176	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						128						424
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	367	122	918	357	1051	0	0	1184	745
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	367	122	918	357	1051	0	0	1184	745
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	32.0	32.0	32.0	18.0	73.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	30.5%	30.5%	30.5%	17.1%	69.5%	0.0%	0.0%	52.4%	52.4%
Maximum Green (s)				27.0	27.0	27.0	14.0	68.0			50.0	50.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.99	0.31	1.95	1.24	0.55			0.80	0.84
Control Delay				58.6	39.7	453.8	128.4	9.4			28.2	20.0
Queue Delay				92.9	0.0	0.0	1.9	88.9			673.6	0.0
Total Delay				151.5	39.7	453.8	130.2	98.4			701.8	20.0
Queue Length 50th (ft)				221	68	~927	~242	268			341	196
Queue Length 95th (ft)				m158	m50	m#532	m#154	m197			434	#489
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				370	389	470	288	1901			1488	888
Starvation Cap Reductn				0	0	0	1	1018			0	0
Spillback Cap Reductn				74	0	0	0	0			1019	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				1.24	0.31	1.95	1.24	1.19			2.52	0.84

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 19 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
~ 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.	

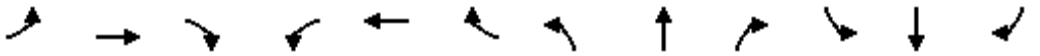
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	360	120	900	350	1030	0	0	1160	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	177	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	367	122	918	357	1051	0	0	1184	745
RTOR Reduction (vph)	0	0	0	0	0	95	0	0	0	0	0	222
Lane Group Flow (vph)	0	0	0	367	122	823	357	1051	0	0	1184	523
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Effective Green, g (s)				27.0	27.0	27.0	68.0	68.0			50.0	50.0
Actuated g/C Ratio				0.26	0.26	0.26	0.65	0.65			0.48	0.48
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				370	389	375	287	1901			1488	666
v/s Ratio Prot				0.26	0.08	c0.56	c0.17	0.36			0.38	
v/s Ratio Perm							c0.64					0.37
v/c Ratio				0.99	0.31	2.19	1.24	0.55			0.80	0.79
Uniform Delay, d1				38.9	31.5	39.0	27.5	10.2			23.2	23.0
Progression Factor				1.18	1.23	1.24	0.48	0.90			1.00	1.00
Incremental Delay, d2				12.2	0.1	538.3	112.6	0.1			4.5	9.0
Delay (s)				58.1	38.8	586.6	125.8	9.2			27.7	32.0
Level of Service				E	D	F	F	A			C	C
Approach Delay (s)		0.0			401.2			38.8			29.4	
Approach LOS		A			F			D			C	

Intersection Summary			
HCM Average Control Delay	142.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	185.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



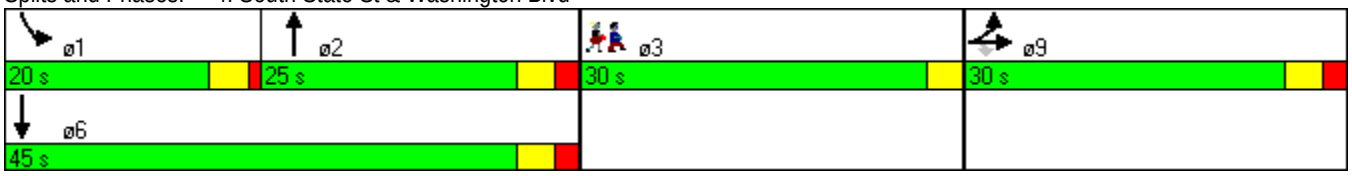
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	310	530	0	0	0	0	880	240	440	1080	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					0.99		1.00		
Frt			0.850					0.968				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3948	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1453	1545	1221	0	0	0	0	3948	0	2735	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			473					58				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	610	378	646	0	0	0	0	1073	293	537	1317	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	610	378	646	0	0	0	0	1366	0	537	1317	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	25.0	0.0	20.0	45.0	0.0
Total Split (%)	28.6%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%	23.8%	0.0%	19.0%	42.9%	0.0%
Maximum Green (s)	25.0	25.0	25.0					20.0		16.0	40.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.79	0.47	0.75					1.71		1.28	1.22	
Control Delay	29.8	18.2	11.1					352.4		174.2	135.8	
Queue Delay	0.3	0.0	0.1					272.5		9.6	333.4	
Total Delay	30.0	18.2	11.2					625.0		183.8	469.2	
Queue Length 50th (ft)	319	153	71					~500		~239	~589	
Queue Length 95th (ft)	404	202	148					m#446		m#290	m#620	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	769	809	865					799		419	1080	
Starvation Cap Reductn	0	0	0					0		7	409	
Spillback Cap Reductn	13	0	10					209		0	61	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.81	0.47	0.76					2.32		1.30	1.96	

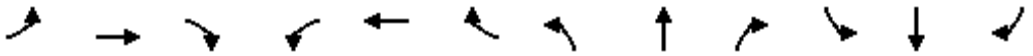
Intersection Summary
Area Type: CBD
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 59 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	310	530	0	0	0	0	880	240	440	1080	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1263					3947		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1263					3947		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	610	378	646	0	0	0	0	1073	293	537	1317	0
RTOR Reduction (vph)	0	0	225	0	0	0	0	47	0	0	0	0
Lane Group Flow (vph)	610	378	421	0	0	0	0	1319	0	537	1317	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Effective Green, g (s)	55.0	55.0	55.0					20.0		16.0	40.0	
Actuated g/C Ratio	0.52	0.52	0.52					0.19		0.15	0.38	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	769	809	662					752		419	1080	
v/s Ratio Prot	c0.42	0.24						c0.33		0.20	c0.46	
v/s Ratio Perm			0.33									
v/c Ratio	0.79	0.47	0.64					1.75		1.28	1.22	
Uniform Delay, d1	20.4	15.8	17.8					42.5		44.5	32.5	
Progression Factor	1.00	1.00	1.00					1.18		0.91	1.01	
Incremental Delay, d2	8.2	1.9	4.6					342.0		139.1	104.8	
Delay (s)	28.6	17.7	22.5					392.2		179.4	137.6	
Level of Service	C	B	C					F		F	F	
Approach Delay (s)		23.7			0.0			392.2			149.7	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM Average Control Delay	175.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	185.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	120	270	850	120	700	910	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.981				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3009	0	1561	3123	
Flt Permitted	0.950				0.105		
Satd. Flow (perm)	1578	2361	3009	0	173	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		310	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	138	310	977	138	805	1046	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	138	310	1115	0	805	1046	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	30.0	39.0	0.0	30.0	69.0	20.0
Total Split (%)	15.2%	28.6%	37.1%	0.0%	28.6%	65.7%	19%
Maximum Green (s)	11.0	26.0	34.0		26.0	64.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.85	0.20	1.13		1.07	0.42	
Control Delay	87.0	1.4	105.9		49.3	1.5	
Queue Delay	0.0	1.0	271.0		100.3	4.5	
Total Delay	87.0	2.4	376.8		149.6	6.0	
Queue Length 50th (ft)	92	0	~457		~569	20	
Queue Length 95th (ft)	#190	16	#558		m#492	m21	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	165	1521	985		750	2503	
Starvation Cap Reductn	0	0	0		134	1363	
Spillback Cap Reductn	0	940	344		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.84	0.53	1.74		1.31	0.92	

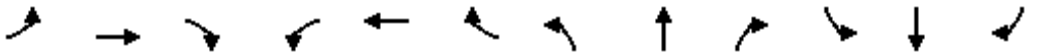
Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 7 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after 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: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	120	270	850	120	700	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3010		1561	3123
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1578	2361	3010		173	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	138	310	977	138	805	1046
RTOR Reduction (vph)	0	142	11	0	0	0
Lane Group Flow (vph)	138	168	1104	0	805	1046
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.8	57.0	34.0		84.2	84.2
Effective Green, g (s)	10.8	57.0	34.0		84.2	84.2
Actuated g/C Ratio	0.10	0.54	0.32		0.80	0.80
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	162	1282	975		749	2504
v/s Ratio Prot	c0.09	0.06	0.37		c0.47	0.33
v/s Ratio Perm		0.01			c0.39	
v/c Ratio	0.85	0.13	1.13		1.07	0.42
Uniform Delay, d1	46.3	11.8	35.5		25.5	3.1
Progression Factor	1.00	1.00	1.00		0.38	0.44
Incremental Delay, d2	32.6	0.0	72.6		36.5	0.0
Delay (s)	78.9	11.9	108.1		46.2	1.4
Level of Service	E	B	F		D	A
Approach Delay (s)	32.5		108.1			20.9
Approach LOS	C		F			C

Intersection Summary			
HCM Average Control Delay	50.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

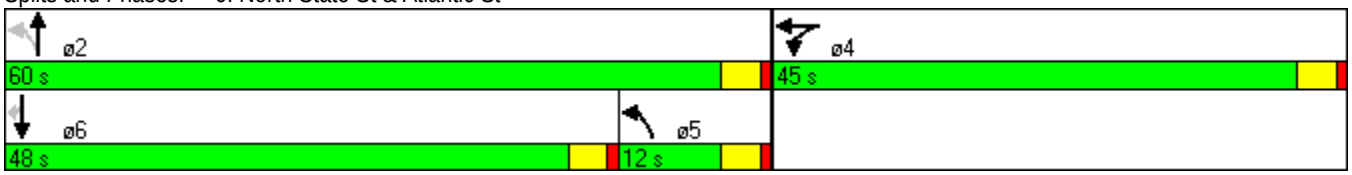


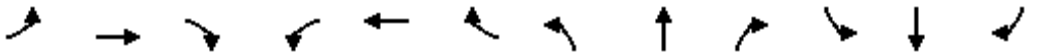
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	490	2190	300	480	1010	0	0	550	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.985							0.850
Flt Protected					0.992			0.984				
Satd. Flow (prot)	0	0	0	0	5635	0	0	3030	0	0	3504	1425
Flt Permitted					0.992			0.595				
Satd. Flow (perm)	0	0	0	0	5635	0	0	1832	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30							20
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	590	2639	361	578	1217	0	0	663	675
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3590	0	0	1795	0	0	663	675
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	12.0	60.0	0.0	0.0	48.0	48.0
Total Split (%)	0.0%	0.0%	0.0%	42.9%	42.9%	0.0%	11.4%	57.1%	0.0%	0.0%	45.7%	45.7%
Maximum Green (s)				41.0	41.0		8.0	56.0			44.0	44.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.62			1.95dl			0.35	0.88
Control Delay					303.8			402.7			14.8	35.7
Queue Delay					164.5			297.0			0.0	0.0
Total Delay					468.3			699.7			14.8	35.7
Queue Length 50th (ft)					~997			~972			128	370
Queue Length 95th (ft)					m#609			m#565			151	483
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2219			977			1869	769
Starvation Cap Reductn					0			290			0	0
Spillback Cap Reductn					409			0			2	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.98			2.61			0.36	0.88

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 6: North State St & Atlantic St

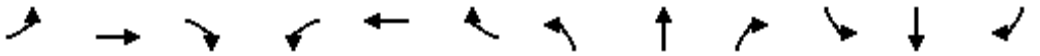




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	490	2190	300	480	1010	0	0	550	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.98			1.00	1.00
Satd. Flow (prot)					5634			3030			3504	1425
Flt Permitted					0.99			0.59			1.00	1.00
Satd. Flow (perm)					5634			1832			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	590	2639	361	578	1217	0	0	663	675
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	0	0	0	3572	0	0	1795	0	0	663	666
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					41.0			56.0			56.0	56.0
Effective Green, g (s)					41.0			56.0			56.0	56.0
Actuated g/C Ratio					0.39			0.53			0.53	0.53
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2200			977			1869	760
v/s Ratio Prot					c0.63						0.19	
v/s Ratio Perm								c0.98				0.47
v/c Ratio					1.62			1.95dl			0.35	0.88
Uniform Delay, d1					32.0			24.5			14.1	21.5
Progression Factor					0.95			1.47			1.00	1.00
Incremental Delay, d2					280.8			377.1			0.5	13.5
Delay (s)					311.1			413.2			14.6	34.9
Level of Service					F			F			B	C
Approach Delay (s)		0.0			311.1			413.2			24.9	
Approach LOS		A			F			F			C	

Intersection Summary			
HCM Average Control Delay	281.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	144.2%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

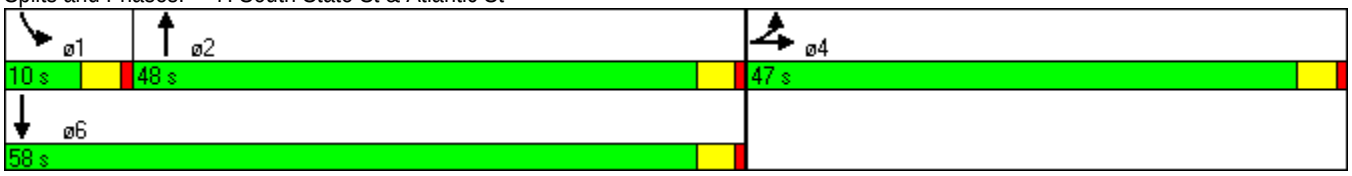


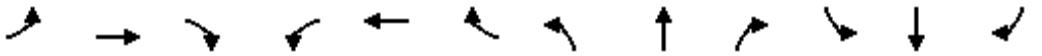
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1040	1520	390	0	0	0	0	450	340	185	718	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.975						0.942				
Flt Protected	0.950	0.990								0.950		
Satd. Flow (prot)	1247	5068	0	0	0	0	0	1737	0	2987	1621	0
Flt Permitted	0.950	0.990								0.950		
Satd. Flow (perm)	1247	5068	0	0	0	0	0	1737	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		57										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1333	1949	500	0	0	0	0	577	436	237	921	0
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	746	3036	0	0	0	0	0	1013	0	237	921	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	10.0	58.0	0.0
Total Split (%)	44.8%	44.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45.7%	0.0%	9.5%	55.2%	0.0%
Maximum Green (s)	43.0	43.0						44.0		6.0	54.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.46	1.44						1.39		1.39	1.10	
Control Delay	245.1	225.5						212.4		224.5	77.9	
Queue Delay	464.8	124.4						446.0		0.0	17.4	
Total Delay	709.8	349.9						658.4		224.5	95.3	
Queue Length 50th (ft)	~850	~521						~911		~110	~722	
Queue Length 95th (ft)	#920	m261						#935		m#103	m521	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	511	2109						728		171	834	
Starvation Cap Reductn	0	0						155		0	30	
Spillback Cap Reductn	331	340						303		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	4.14	1.72						2.38		1.39	1.15	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: South State St & Atlantic St

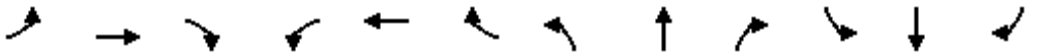




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1040	1520	390	0	0	0	0	450	340	185	718	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.98						0.94		1.00	1.00	
Flt Protected	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5072						1737		2987	1621	
Flt Permitted	0.95	0.99						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5072						1737		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1333	1949	500	0	0	0	0	577	436	237	921	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	746	3002	0	0	0	0	0	1013	0	237	921	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	43.0	43.0						44.0		6.0	54.0	
Effective Green, g (s)	43.0	43.0						44.0		6.0	54.0	
Actuated g/C Ratio	0.41	0.41						0.42		0.06	0.51	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	511	2077						728		171	834	
v/s Ratio Prot	c0.60	0.59						c0.58		c0.08	0.57	
v/s Ratio Perm												
v/c Ratio	1.46	1.45						1.39		1.39	1.10	
Uniform Delay, d1	31.0	31.0						30.5		49.5	25.5	
Progression Factor	1.00	1.12						1.00		1.05	0.90	
Incremental Delay, d2	217.6	203.2						184.6		185.2	53.4	
Delay (s)	248.6	237.8						215.1		237.2	76.3	
Level of Service	F	F						F		F	E	
Approach Delay (s)		239.9			0.0			215.1			109.2	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	210.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



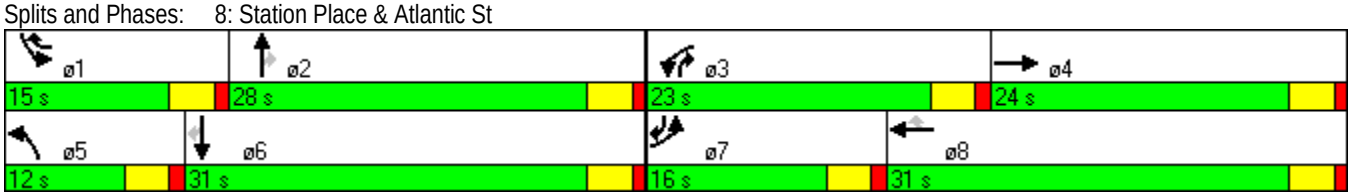
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	120	70	260	240	150	80	570	170	100	720	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.945				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1616	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				163			185			291
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	130	76	283	261	163	87	620	185	109	783	391
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	206	0	283	261	163	87	620	185	109	783	391
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	16.0	24.0	0.0	23.0	31.0	15.0	12.0	28.0	23.0	15.0	31.0	16.0
Total Split (%)	17.8%	26.7%	0.0%	25.6%	34.4%	16.7%	13.3%	31.1%	25.6%	16.7%	34.4%	17.8%
Maximum Green (s)	12.0	20.0		19.0	27.0	11.0	8.0	24.0	19.0	11.0	27.0	12.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

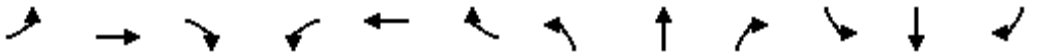
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.48	0.54		0.90	0.50	0.22	0.64	0.68	0.22	0.64	0.76	0.48
Control Delay	47.4	32.3		67.2	29.2	3.1	61.9	33.6	2.4	55.9	34.1	6.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	2.1	0.5	0.0	2.9	0.6
Total Delay	47.4	32.3		67.2	29.2	3.1	61.9	35.8	2.9	55.9	37.0	7.1
Queue Length 50th (ft)	41	88		157	119	0	49	168	0	59	218	32
Queue Length 95th (ft)	83	159		#298	201	33	#114	231	30	#122	#317	95
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	202	382		325	521	756	142	909	856	188	1027	847
Starvation Cap Reductn	0	0		0	0	0	0	163	359	0	148	186
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.54		0.87	0.50	0.22	0.61	0.83	0.37	0.58	0.89	0.59

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	120	70	260	240	150	80	570	170	100	720	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1615		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1615		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	76	130	76	283	261	163	87	620	185	109	783	391
RTOR Reduction (vph)	0	23	0	0	0	93	0	0	94	0	0	166
Lane Group Flow (vph)	76	183	0	283	261	70	87	620	91	109	783	225
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	9.4	20.0		18.4	29.0	38.9	6.4	25.7	44.1	9.9	29.2	38.6
Effective Green, g (s)	9.4	20.0		18.4	29.0	38.9	6.4	25.7	44.1	9.9	29.2	38.6
Actuated g/C Ratio	0.10	0.22		0.20	0.32	0.43	0.07	0.29	0.49	0.11	0.32	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	158	359		315	522	657	113	909	762	169	999	652
v/s Ratio Prot	0.05	0.11		c0.18	c0.16	0.01	0.05	0.19	0.02	c0.07	c0.25	0.04
v/s Ratio Perm						0.04			0.04			0.13
v/c Ratio	0.48	0.51		0.90	0.50	0.11	0.77	0.68	0.12	0.64	0.78	0.34
Uniform Delay, d1	38.0	30.7		34.9	24.6	15.2	41.1	28.5	12.4	38.4	27.5	17.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.1		26.4	0.8	0.1	26.5	4.1	0.1	8.2	6.1	0.3
Delay (s)	40.3	31.8		61.3	25.4	15.3	67.6	32.7	12.5	46.5	33.7	17.5
Level of Service	D	C		E	C	B	E	C	B	D	C	B
Approach Delay (s)		34.1			37.4			31.9			29.9	
Approach LOS		C			D			C			C	

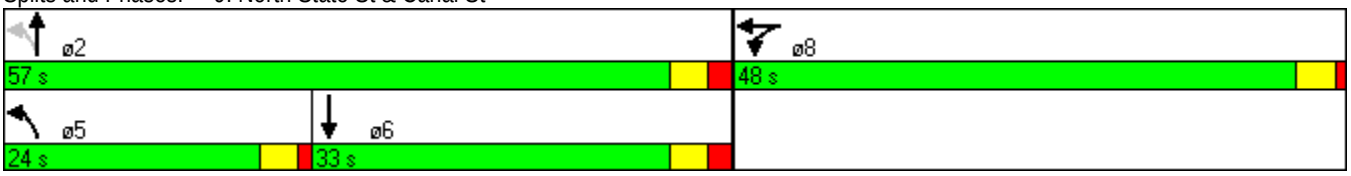
Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

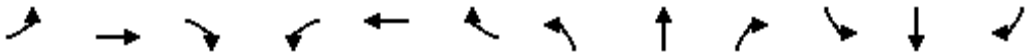
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	380	2400	300	480	670	0	0	820	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.985						0.969	
Flt Protected					0.994		0.950					
Satd. Flow (prot)	0	0	0	0	5458	0	1540	3079	0	0	2984	0
Flt Permitted					0.994		0.125					
Satd. Flow (perm)	0	0	0	0	5458	0	203	3079	0	0	2984	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30						19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	400	2526	316	505	705	0	0	863	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3242	0	505	705	0	0	1084	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	24.0	57.0	0.0	0.0	33.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.7%	45.7%	0.0%	22.9%	54.3%	0.0%	0.0%	31.4%	0.0%
Maximum Green (s)				44.0	44.0		20.0	52.0			28.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.41		1.41	0.46			1.34	
Control Delay					213.1		220.4	16.9			192.9	
Queue Delay					209.3		105.5	3.6			103.3	
Total Delay					422.4		325.9	20.5			296.1	
Queue Length 50th (ft)					~856		~405	162			~500	
Queue Length 95th (ft)					#926		m#557	m192			#633	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					2305		357	1525			810	
Starvation Cap Reductn					0		51	707			0	
Spillback Cap Reductn					573		0	0			119	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.87		1.65	0.86			1.57	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ 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: 9: North State St & Canal St

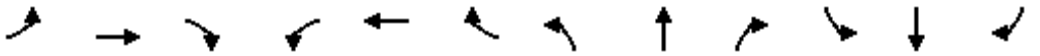




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	380	2400	300	480	670	0	0	820	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5460		1540	3079			2985	
Flt Permitted					0.99		0.12	1.00			1.00	
Satd. Flow (perm)					5460		203	3079			2985	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	400	2526	316	505	705	0	0	863	221
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	3225	0	505	705	0	0	1070	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					44.0		52.0	52.0			28.0	
Effective Green, g (s)					44.0		52.0	52.0			28.0	
Actuated g/C Ratio					0.42		0.50	0.50			0.27	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2288		355	1525			796	
v/s Ratio Prot					c0.59		c0.27	0.23			0.36	
v/s Ratio Perm							c0.43					
v/c Ratio					1.41		1.42	0.46			1.34	
Uniform Delay, d1					30.5		31.2	17.3			38.5	
Progression Factor					1.00		0.71	0.92			1.00	
Incremental Delay, d2					186.9		201.2	0.7			163.3	
Delay (s)					217.4		223.4	16.7			201.8	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			217.4			103.0			201.8	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM Average Control Delay	189.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	123.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

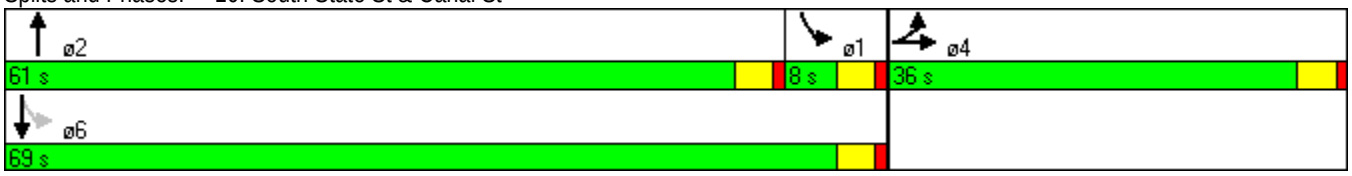


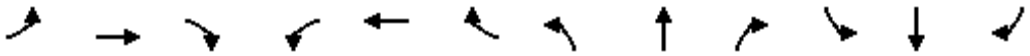
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1060	560	0	0	0	0	720	260	340	860	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.948						0.960				
Flt Protected	0.950										0.986	
Satd. Flow (prot)	1593	4339	0	0	0	0	0	2854	0	0	3036	0
Flt Permitted	0.950										0.532	
Satd. Flow (perm)	1593	4339	0	0	0	0	0	2854	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		130						38				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	453	1116	589	0	0	0	0	758	274	358	905	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	453	1705	0	0	0	0	0	1032	0	0	1263	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	36.0	36.0	0.0	0.0	0.0	0.0	0.0	61.0	0.0	8.0	69.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	0.0%	7.6%	65.7%	0.0%
Maximum Green (s)	32.0	32.0						57.0		4.0	65.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.93	1.21						0.58			1.61dl	
Control Delay	47.2	129.4						13.0			137.3	
Queue Delay	36.9	0.0						1.6			164.5	
Total Delay	84.1	129.4						14.6			301.9	
Queue Length 50th (ft)	248	~478						192			~570	
Queue Length 95th (ft)	m170	m215						250			m168	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	485	1413						1781			1014	
Starvation Cap Reductn	0	0						534			231	
Spillback Cap Reductn	65	0						196			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	1.08	1.21						0.83			1.61	

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	1060	560	0	0	0	0	720	260	340	860	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.95						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.99	
Satd. Flow (prot)	1593	4340						2855			3036	
Flt Permitted	0.95	1.00						1.00			0.53	
Satd. Flow (perm)	1593	4340						2855			1638	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	1116	589	0	0	0	0	758	274	358	905	0
RTOR Reduction (vph)	0	90	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	453	1615	0	0	0	0	0	1018	0	0	1263	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	32.0	32.0						65.0			65.0	
Effective Green, g (s)	32.0	32.0						65.0			65.0	
Actuated g/C Ratio	0.30	0.30						0.62			0.62	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	485	1323						1767			1014	
v/s Ratio Prot	0.28	c0.37						0.36				
v/s Ratio Perm											c0.77	
v/c Ratio	0.93	1.22						0.58			1.61dl	
Uniform Delay, d1	35.5	36.5						11.8			20.0	
Progression Factor	1.19	1.20						1.00			1.28	
Incremental Delay, d2	3.7	99.9						1.4			111.3	
Delay (s)	46.1	143.5						13.2			137.0	
Level of Service	D	F						B			F	
Approach Delay (s)		123.1			0.0			13.2			137.0	
Approach LOS		F			A			B			F	

Intersection Summary			
HCM Average Control Delay	101.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

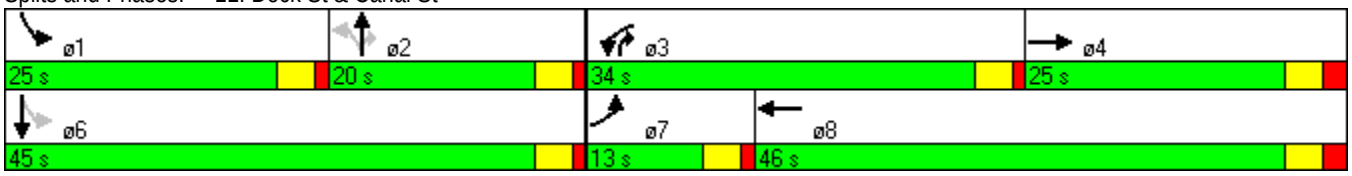
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

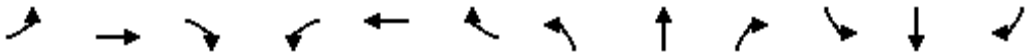
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	320	0	400	700	520	0	410	240	450	820	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936				0.850		0.977	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1540	3079	0	1486	2882	0	0	3079	1378	1540	3008	0
Flt Permitted	0.950			0.950						0.208		
Satd. Flow (perm)	1540	3079	0	1486	2882	0	0	3079	1378	337	3008	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					216				101		24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	53	337	0	421	737	547	0	432	253	474	863	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	337	0	421	1284	0	0	432	253	474	1021	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	13.0	25.0	0.0	34.0	46.0	0.0	20.0	20.0	34.0	25.0	45.0	0.0
Total Split (%)	12.5%	24.0%	0.0%	32.7%	44.2%	0.0%	19.2%	19.2%	32.7%	24.0%	43.3%	0.0%
Maximum Green (s)	9.0	20.0		30.0	41.0		16.0	16.0	30.0	21.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.45	0.54		0.98	0.94			0.91	0.35	1.26	0.85	
Control Delay	57.8	40.9		77.2	38.6			68.5	11.4	164.4	36.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	13.4	
Total Delay	57.8	40.9		77.2	38.6			68.5	11.4	164.4	49.7	
Queue Length 50th (ft)	34	106		277	385			150	57	~353	313	
Queue Length 95th (ft)	74	153		#478	#554			#243	115	#556	405	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	133	622		429	1368			474	715	376	1200	
Starvation Cap Reductn	0	0		0	0			0	0	0	181	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.40	0.54		0.98	0.94			0.91	0.35	1.26	1.00	

Intersection Summary	
Area Type:	CBD
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 12 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	320	0	400	700	520	0	410	240	450	820	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2882			3079	1378	1540	3008	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.21	1.00	
Satd. Flow (perm)	1540	3079		1486	2882			3079	1378	338	3008	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	337	0	421	737	547	0	432	253	474	863	158
RTOR Reduction (vph)	0	0	0	0	123	0	0	0	57	0	15	0
Lane Group Flow (vph)	53	337	0	421	1161	0	0	432	196	474	1006	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	6.9	20.8		30.0	43.9			15.2	45.2	40.2	40.2	
Effective Green, g (s)	6.9	21.8		30.0	44.9			15.2	45.2	40.2	40.2	
Actuated g/C Ratio	0.07	0.21		0.29	0.43			0.15	0.43	0.39	0.39	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	102	645		429	1244			450	652	373	1163	
v/s Ratio Prot	0.03	0.11		c0.28	c0.40			0.14	0.09	c0.26	0.33	
v/s Ratio Perm									0.06	c0.23		
v/c Ratio	0.52	0.52		0.98	0.93			0.96	0.30	1.27	0.87	
Uniform Delay, d1	46.9	36.5		36.7	28.1			44.1	19.1	28.5	29.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	0.8		38.4	12.7			33.5	0.3	141.4	8.7	
Delay (s)	51.4	37.2		75.1	40.8			77.6	19.4	169.9	38.1	
Level of Service	D	D		E	D			E	B	F	D	
Approach Delay (s)		39.2			49.3			56.1			79.9	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	60.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	460	240	0	520	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	1583	0	1900	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	1583	0	1900	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	500	261	0	565	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	500	261	0	565	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	460	240	0	520	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	500	261	0	565	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.99	
vC, conflicting volume			761		1065	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			761		1060	500
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			851		245	571

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	500	261	565	0
Volume Left	0	0	0	0
Volume Right	0	261	0	0
cSH	1700	1700	851	1700
Volume to Capacity	0.29	0.15	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0		0.0	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	260	200	160	520	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941					
Flt Protected				0.988		
Satd. Flow (prot)	1753	0	0	1877	0	0
Flt Permitted				0.988		
Satd. Flow (perm)	1753	0	0	1877	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	283	217	174	565	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	500	0	0	739	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	260	200	160	520	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	217	174	565	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.90	
vC, conflicting volume			500		1304	391
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			500		1282	391
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		100	100
cM capacity (veh/h)			1064		137	657

Direction, Lane #	EB 1	WB 1
Volume Total	500	739
Volume Left	0	174
Volume Right	217	0
cSH	1700	1064
Volume to Capacity	0.29	0.16
Queue Length 95th (ft)	0	15
Control Delay (s)	0.0	3.8
Lane LOS		A
Approach Delay (s)	0.0	3.8
Approach LOS		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	260	0	0	680	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1863
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	180	
Travel Time (s)	4.4			6.5	4.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	274	0	0	716	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	716	0	0
Sign Control	Free			Free	Stop	

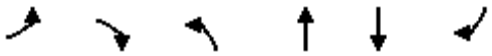
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

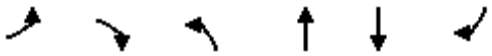
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	260	0	0	680	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	274	0	0	716	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.88	
vC, conflicting volume			274		989	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			274		923	274
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1289		265	765

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	274	716	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.16	0.42	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



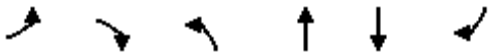
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	20	40	760	920	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.966					0.850
Flt Protected	0.964			0.998		
Satd. Flow (prot)	1735	0	0	1859	1863	1583
Flt Permitted	0.964			0.919		
Satd. Flow (perm)	1735	0	0	1712	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13					141
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	65	22	43	826	1000	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	0	869	1000	141
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	15.0	0.0	90.0	90.0	90.0	90.0
Total Split (%)	14.3%	0.0%	85.7%	85.7%	85.7%	85.7%
Maximum Green (s)	10.0		85.0	85.0	85.0	85.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.49			0.59	0.62	0.10
Control Delay	47.9			4.9	5.2	0.5
Queue Delay	0.0			0.0	5.2	0.0
Total Delay	47.9			4.9	10.4	0.5
Queue Length 50th (ft)	47			157	192	0
Queue Length 95th (ft)	98			239	289	9
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	193			1471	1601	1369
Starvation Cap Reductn	0			0	527	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.45			0.59	0.93	0.10

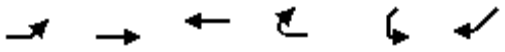
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 85 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	20	40	760	920	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1734			1858	1863	1583
Flt Permitted	0.96			0.92	1.00	1.00
Satd. Flow (perm)	1734			1712	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	22	43	826	1000	141
RTOR Reduction (vph)	12	0	0	0	0	24
Lane Group Flow (vph)	75	0	0	869	1000	117
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	7.6			87.4	87.4	87.4
Effective Green, g (s)	8.6			88.4	88.4	87.4
Actuated g/C Ratio	0.08			0.84	0.84	0.83
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	142			1441	1568	1318
v/s Ratio Prot	c0.04				c0.54	
v/s Ratio Perm				0.51		0.07
v/c Ratio	0.53			0.60	0.64	0.09
Uniform Delay, d1	46.3			2.7	2.8	1.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	3.5			1.9	2.0	0.1
Delay (s)	49.8			4.5	4.8	1.7
Level of Service	D			A	A	A
Approach Delay (s)	49.8			4.5	4.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

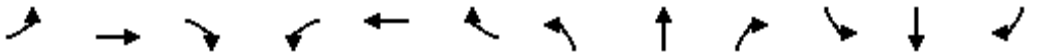


Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	630	210	0	0	0	0	480	600	60	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.062		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	111	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228						5			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	196	685	228	0	0	0	0	522	652	65	348	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	685	228	0	0	0	0	522	652	65	348	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	25.0	25.0	25.0	0.0	0.0	0.0	0.0	90.0	90.0	70.0	70.0	0.0
Total Split (%)	21.7%	21.7%	21.7%	0.0%	0.0%	0.0%	0.0%	78.3%	78.3%	60.9%	60.9%	0.0%
Maximum Green (s)	20.0	20.0	20.0							65.0	65.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	62.0	20.0	8.0
Total Split (%)	54%	17%	7%
Maximum Green (s)	57.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.64	1.12	0.49					0.36	0.55	1.03	0.18	
Control Delay	54.9	118.8	9.4					0.2	1.2	154.8	12.4	
Queue Delay	0.0	0.0	0.0					6.7	8.1	0.0	0.0	
Total Delay	54.9	118.8	9.4					6.9	9.2	154.8	12.4	
Queue Length 50th (ft)	136	~308	0					1	32	~52	62	
Queue Length 95th (ft)	217	#428	68					m1	m35	#99	87	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	305	610	461					1427	1178	63	1915	
Starvation Cap Reductn	0	0	0					844	481	0	0	
Spillback Cap Reductn	0	0	4					0	0	0	65	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.64	1.12	0.50					0.90	0.94	1.03	0.19	

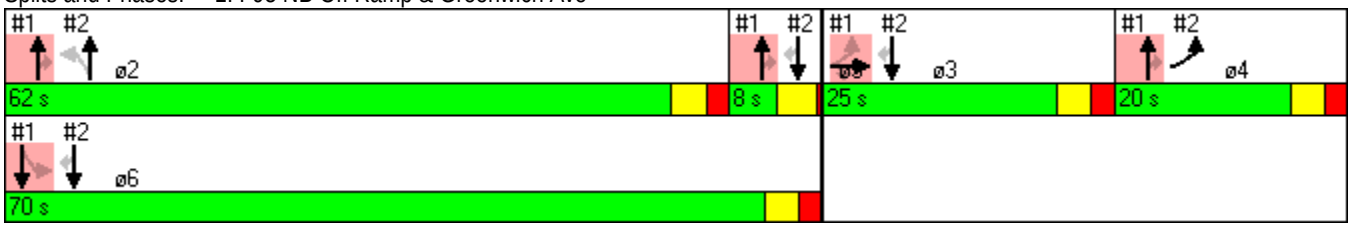
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

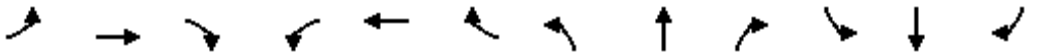
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave



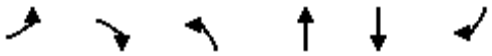
Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal 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

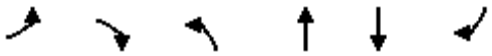


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	630	210	0	0	0	0	480	600	60	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.06	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	110	3388	
Peak-hour factor, PHF	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)	196	685	228	0	0	0	0	522	652	65	348	0
RTOR Reduction (vph)	0	0	188	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	196	685	40	0	0	0	0	522	651	65	348	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	20.0	20.0	20.0					86.0	86.0	65.0	65.0	
Effective Green, g (s)	20.0	20.0	20.0					86.0	86.0	65.0	65.0	
Actuated g/C Ratio	0.17	0.17	0.17					0.75	0.75	0.57	0.57	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	305	610	273					1451	1197	62	1915	
v/s Ratio Prot		c0.20						0.27			0.10	
v/s Ratio Perm	0.11		0.03						c0.41	c0.59		
v/c Ratio	0.64	1.12	0.15					0.36	0.54	1.05	0.18	
Uniform Delay, d1	44.2	47.5	40.3					5.0	6.2	25.0	12.1	
Progression Factor	1.00	1.00	1.00					0.02	0.15	1.00	1.00	
Incremental Delay, d2	5.1	75.2	0.3					0.0	0.1	128.4	0.1	
Delay (s)	49.3	122.7	40.6					0.1	0.9	153.4	12.2	
Level of Service	D	F	D					A	A	F	B	
Approach Delay (s)		92.8			0.0			0.6			34.4	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	440	70	50	640	450	80			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.979				0.997	0.850			
Flt Protected	0.959			0.996					
Satd. Flow (prot)	3393	0	0	1855	1764	1504			
Flt Permitted	0.959			0.929					
Satd. Flow (perm)	3393	0	0	1730	1764	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	13				3	78			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	478	76	54	696	489	87			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	554	0	0	750	498	78			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	62.0	62.0	103.0	103.0	25.0	8.0	70.0
Total Split (%)	17.4%	0.0%	53.9%	53.9%	89.6%	89.6%	22%	7%	61%
Maximum Green (s)	15.0		57.0	57.0			20.0	4.0	65.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



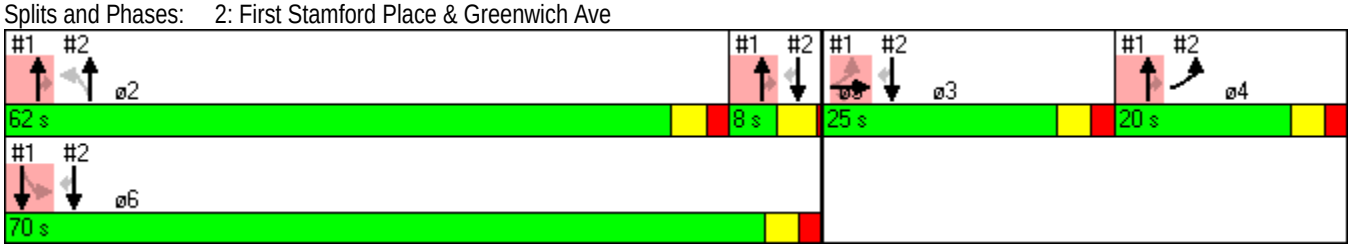
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	1.22			0.92	0.36	0.07			
Control Delay	159.2			45.4	2.6	0.1			
Queue Delay	15.7			0.0	0.4	1.2			
Total Delay	174.9			45.4	3.0	1.3			
Queue Length 50th (ft)	~256			478	30	0			
Queue Length 95th (ft)	#370			#730	48	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	454			857	1381	1194			
Starvation Cap Reductn	0			0	431	968			
Spillback Cap Reductn	13			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	1.26			0.88	0.52	0.35			

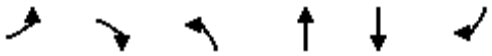
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

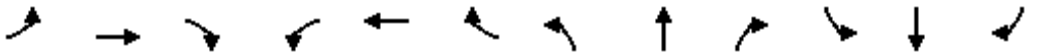
Splits and Phases: 2: First Stamford Place & Greenwich Ave





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	440	70	50	640	450	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3393			1856	1765	1504
Flt Permitted	0.96			0.93	1.00	1.00
Satd. Flow (perm)	3393			1731	1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	76	54	696	489	87
RTOR Reduction (vph)	11	0	0	0	1	20
Lane Group Flow (vph)	543	0	0	750	497	58
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			54.4	90.0	90.0
Effective Green, g (s)	15.0			54.4	86.0	86.0
Actuated g/C Ratio	0.13			0.47	0.75	0.75
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	443			819	1320	1125
v/s Ratio Prot	c0.16				c0.28	
v/s Ratio Perm				c0.43		0.04
v/c Ratio	1.23			0.92	0.38	0.05
Uniform Delay, d1	50.0			28.2	5.1	3.8
Progression Factor	1.00			1.00	0.49	0.00
Incremental Delay, d2	119.9			15.0	0.2	0.0
Delay (s)	169.9			43.1	2.8	0.0
Level of Service	F			D	A	A
Approach Delay (s)	169.9			43.1	2.4	
Approach LOS	F			D	A	

Intersection Summary			
HCM Average Control Delay	68.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

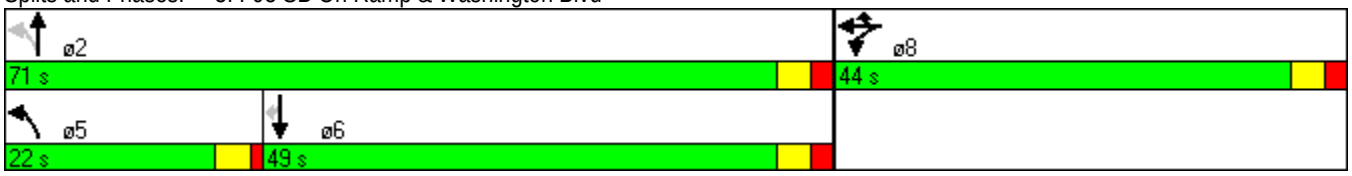


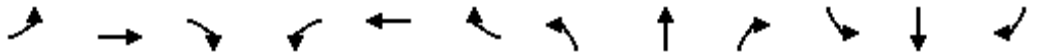
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	330	790	501	1448	0	0	1403	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.083					
Satd. Flow (perm)	0	0	0	1438	1513	1458	128	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						34						215
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	184	337	806	511	1478	0	0	1432	765
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	184	337	806	511	1478	0	0	1432	765
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	44.0	44.0	44.0	22.0	71.0	0.0	0.0	49.0	49.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	38.3%	19.1%	61.7%	0.0%	0.0%	42.6%	42.6%
Maximum Green (s)				39.0	39.0	39.0	18.0	66.0			44.0	44.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.38	0.66	1.56	1.80	0.88			1.20	1.15
Control Delay				40.6	45.2	285.6	391.5	38.2			130.6	107.5
Queue Delay				674.3	0.0	0.0	216.9	403.0			377.6	0.0
Total Delay				715.0	45.2	285.6	608.4	441.2			508.1	107.5
Queue Length 50th (ft)				116	227	~829	~543	407			~677	~562
Queue Length 95th (ft)				m91	m175	m#501	m#228	m126			#815	#802
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				488	513	517	284	1684			1195	668
Starvation Cap Reductn				0	0	0	60	905			0	0
Spillback Cap Reductn				488	0	0	0	0			493	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				184.00	0.66	1.56	2.28	1.90			2.04	1.15

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ 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.	

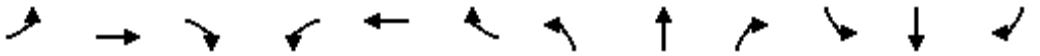
Splits and Phases: 3: I-95 SB On Ramp & Washington Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	330	790	501	1448	0	0	1403	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.08	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	129	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	184	337	806	511	1478	0	0	1432	765
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	0	133
Lane Group Flow (vph)	0	0	0	184	337	784	511	1478	0	0	1432	632
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Effective Green, g (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Actuated g/C Ratio				0.34	0.34	0.34	0.57	0.57			0.38	0.38
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				488	513	494	284	1684			1195	535
v/s Ratio Prot				0.13	0.22	c0.54	c0.28	0.50			0.46	
v/s Ratio Perm							c0.75					0.45
v/c Ratio				0.38	0.66	1.59	1.80	0.88			1.20	1.18
Uniform Delay, d1				28.8	32.3	38.0	37.2	21.0			35.5	35.5
Progression Factor				1.37	1.34	1.33	1.55	1.75			1.00	1.00
Incremental Delay, d2				0.1	0.4	264.6	361.0	0.7			97.6	99.7
Delay (s)				39.7	43.8	315.0	418.6	37.4			133.1	135.2
Level of Service				D	D	F	F	D			F	F
Approach Delay (s)		0.0			207.9			135.3			133.8	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM Average Control Delay	152.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	193.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



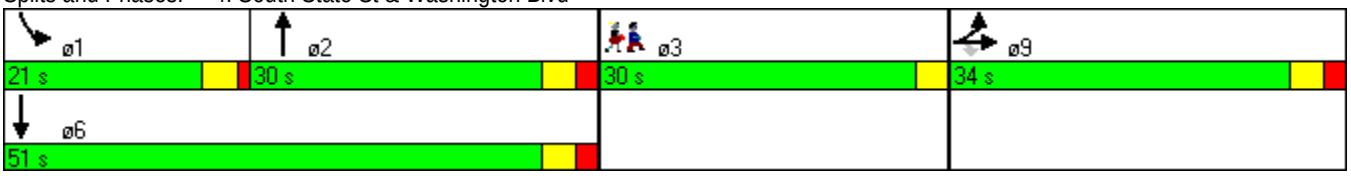
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	690	270	0	0	0	0	1479	300	640	943	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					1.00		1.00		
Frt			0.850					0.975				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3983	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1454	1545	1225	0	0	0	0	3983	0	2744	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			180					34				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	573	841	329	0	0	0	0	1804	366	780	1150	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	573	841	329	0	0	0	0	2170	0	780	1150	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	34.0	34.0	34.0	0.0	0.0	0.0	0.0	30.0	0.0	21.0	51.0	0.0
Total Split (%)	29.6%	29.6%	29.6%	0.0%	0.0%	0.0%	0.0%	26.1%	0.0%	18.3%	44.3%	0.0%
Maximum Green (s)	29.0	29.0	29.0					25.0		17.0	46.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	26%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	1.06	0.46					2.43		1.92	1.01	
Control Delay	30.5	77.9	9.8					667.0		450.4	39.6	
Queue Delay	416.8	0.0	0.1					29.2		30.9	90.6	
Total Delay	447.3	77.9	9.9					696.3		481.2	130.1	
Queue Length 50th (ft)	327	~686	61					~979		~451	~210	
Queue Length 95th (ft)	405	#791	107					#945		m#389	m124	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	753	793	716					892		406	1134	
Starvation Cap Reductn	0	0	0					21		14	203	
Spillback Cap Reductn	455	0	34					146		0	11	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.92	1.06	0.48					2.91		1.99	1.24	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ 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: 4: South State St & Washington Blvd



Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	690	270	0	0	0	0	1479	300	640	943	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1262					3981		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1262					3981		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	573	841	329	0	0	0	0	1804	366	780	1150	0
RTOR Reduction (vph)	0	0	88	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	573	841	241	0	0	0	0	2143	0	780	1150	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Effective Green, g (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Actuated g/C Ratio	0.51	0.51	0.51					0.22		0.15	0.40	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	753	793	647					865		406	1134	
v/s Ratio Prot	0.39	c0.54						c0.54		c0.28	0.41	
v/s Ratio Perm			0.19									
v/c Ratio	0.76	1.06	0.37					2.48		1.92	1.01	
Uniform Delay, d1	22.4	28.0	16.9					45.0		49.0	34.5	
Progression Factor	1.00	1.00	1.00					0.77		1.32	0.51	
Incremental Delay, d2	7.1	49.2	1.6					667.3		417.9	19.8	
Delay (s)	29.5	77.2	18.5					701.8		482.5	37.4	
Level of Service	C	E	B					F		F	D	
Approach Delay (s)		50.5			0.0			701.8			217.3	
Approach LOS		D			A			F			F	

Intersection Summary			
HCM Average Control Delay	347.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	193.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	100	489	1290	170	233	980	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.983				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3015	0	1561	3123	
Flt Permitted	0.950				0.061		
Satd. Flow (perm)	1578	2361	3015	0	100	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		495	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	115	562	1483	195	268	1126	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	115	562	1678	0	268	1126	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	23.0	56.0	0.0	23.0	79.0	20.0
Total Split (%)	13.9%	20.0%	48.7%	0.0%	20.0%	68.7%	17%
Maximum Green (s)	11.0	19.0	51.0		19.0	74.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.79	0.52	0.91		0.78	0.44	
Control Delay	82.8	11.8	30.3		40.1	3.3	
Queue Delay	0.0	0.5	672.1		7.1	0.8	
Total Delay	82.8	12.3	702.4		47.3	4.1	
Queue Length 50th (ft)	85	50	552		168	92	
Queue Length 95th (ft)	#172	100	#787		m183	m84	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	151	1111	1835		367	2564	
Starvation Cap Reductn	0	0	0		63	1043	
Spillback Cap Reductn	0	207	1262		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.76	0.62	2.93		0.88	0.74	

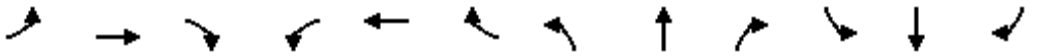
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Station Place & Washington Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	100	489	1290	170	233	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3013		1561	3123
Flt Permitted	0.95	1.00	1.00		0.06	1.00
Satd. Flow (perm)	1578	2361	3013		101	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	115	562	1483	195	268	1126
RTOR Reduction (vph)	0	361	6	0	0	0
Lane Group Flow (vph)	115	201	1672	0	268	1126
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.6	31.2	69.8		94.4	94.4
Effective Green, g (s)	10.6	31.2	69.8		94.4	94.4
Actuated g/C Ratio	0.09	0.27	0.61		0.82	0.82
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	145	641	1829		344	2564
v/s Ratio Prot	c0.07	0.06	c0.55		c0.14	0.36
v/s Ratio Perm		0.03			0.50	
v/c Ratio	0.79	0.31	0.91		0.78	0.44
Uniform Delay, d1	51.1	33.4	20.0		34.0	2.9
Progression Factor	0.93	2.48	1.00		1.17	1.02
Incremental Delay, d2	24.8	0.3	8.6		4.8	0.2
Delay (s)	72.6	83.0	28.5		44.5	3.2
Level of Service	E	F	C		D	A
Approach Delay (s)	81.2		28.5			11.1
Approach LOS	F		C			B

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

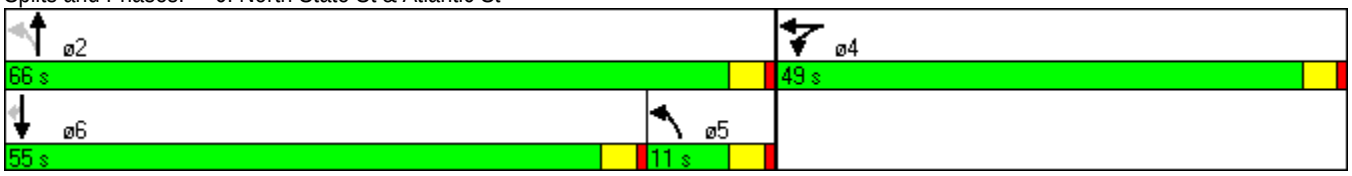


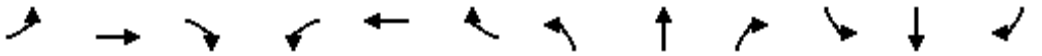
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	281	1820	320	270	919	0	0	594	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.980							0.850
Flt Protected					0.994			0.989				
Satd. Flow (prot)	0	0	0	0	5618	0	0	3045	0	0	3504	1425
Flt Permitted					0.994			0.611				
Satd. Flow (perm)	0	0	0	0	5618	0	0	1881	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					39							45
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	339	2193	386	325	1107	0	0	716	855
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2918	0	0	1432	0	0	716	855
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	11.0	66.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	42.6%	42.6%	0.0%	9.6%	57.4%	0.0%	0.0%	47.8%	47.8%
Maximum Green (s)				45.0	45.0		7.0	62.0			51.0	51.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.31			1.41			0.38	1.08
Control Delay					166.4			210.3			16.1	83.1
Queue Delay					94.2			336.1			0.0	0.0
Total Delay					260.6			546.5			16.1	83.1
Queue Length 50th (ft)					~787			~768			154	~696
Queue Length 95th (ft)					m#553			m247			177	#818
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2222			1014			1889	789
Starvation Cap Reductn					0			351			0	0
Spillback Cap Reductn					306			0			60	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.52			2.16			0.39	1.08

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
~ 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: 6: North State St & Atlantic St

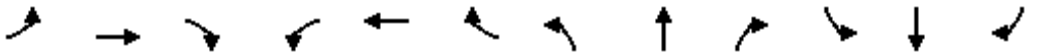




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	281	1820	320	270	919	0	0	594	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.99			1.00	1.00
Satd. Flow (prot)					5620			3045			3504	1425
Flt Permitted					0.99			0.61			1.00	1.00
Satd. Flow (perm)					5620			1880			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	339	2193	386	325	1107	0	0	716	855
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	0	2894	0	0	1432	0	0	716	834
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					45.0			62.0			62.0	62.0
Effective Green, g (s)					45.0			62.0			62.0	62.0
Actuated g/C Ratio					0.39			0.54			0.54	0.54
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2199			1014			1889	768
v/s Ratio Prot					c0.51						0.20	
v/s Ratio Perm								c0.76				0.59
v/c Ratio					1.32			1.41			0.38	1.09
Uniform Delay, d1					35.0			26.5			15.3	26.5
Progression Factor					0.71			0.90			1.00	1.00
Incremental Delay, d2					142.6			186.0			0.6	58.4
Delay (s)					167.6			209.8			15.9	84.9
Level of Service					F			F			B	F
Approach Delay (s)		0.0			167.6			209.8			53.5	
Approach LOS		A			F			F			D	

Intersection Summary			
HCM Average Control Delay	147.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	135.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

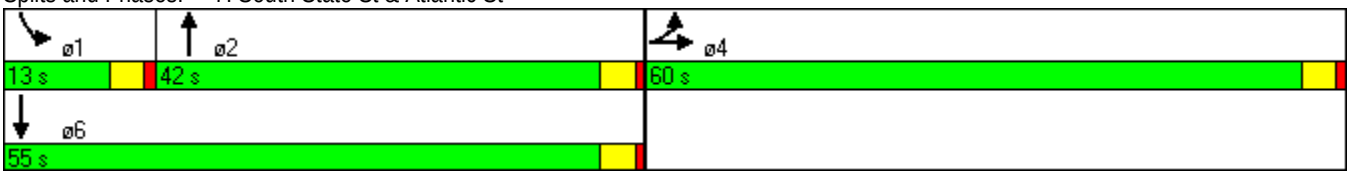


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	2260	100	0	0	0	0	609	462	320	555	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.942				
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1247	5214	0	0	0	0	0	1737	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	744	2897	128	0	0	0	0	781	592	410	712	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	670	3099	0	0	0	0	0	1373	0	410	712	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	60.0	60.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	13.0	55.0	0.0
Total Split (%)	52.2%	52.2%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	0.0%	11.3%	47.8%	0.0%
Maximum Green (s)	56.0	56.0						38.0		9.0	51.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.10	1.22						2.39		1.75	0.99	
Control Delay	98.0	125.1						650.8		385.7	54.6	
Queue Delay	620.2	91.8						47.0		0.0	0.0	
Total Delay	718.2	216.9						697.8		385.7	54.6	
Queue Length 50th (ft)	~697	506						~1706		~223	536	
Queue Length 95th (ft)	#770	m241						#1594		m#234	m508	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	607	2544						574		234	719	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	349	366						30		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	2.60	1.42						2.52		1.75	0.99	

Intersection Summary
Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: South State St & Atlantic St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	2260	100	0	0	0	0	609	462	320	555	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.99						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5212						1737		2987	1621	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5212						1737		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	744	2897	128	0	0	0	0	781	592	410	712	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	670	3094	0	0	0	0	0	1373	0	410	712	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	56.0	56.0						38.0		9.0	51.0	
Effective Green, g (s)	56.0	56.0						38.0		9.0	51.0	
Actuated g/C Ratio	0.49	0.49						0.33		0.08	0.44	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	607	2538						574		234	719	
v/s Ratio Prot	0.54	c0.59						c0.79		c0.14	0.44	
v/s Ratio Perm												
v/c Ratio	1.10	1.22						2.39		1.75	0.99	
Uniform Delay, d1	29.5	29.5						38.5		53.0	31.8	
Progression Factor	1.00	0.99						0.78		1.12	0.82	
Incremental Delay, d2	68.3	101.3						630.9		351.7	27.1	
Delay (s)	97.8	130.6						661.1		411.0	53.1	
Level of Service	F	F						F		F	D	
Approach Delay (s)		124.8			0.0			661.1			183.9	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	252.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

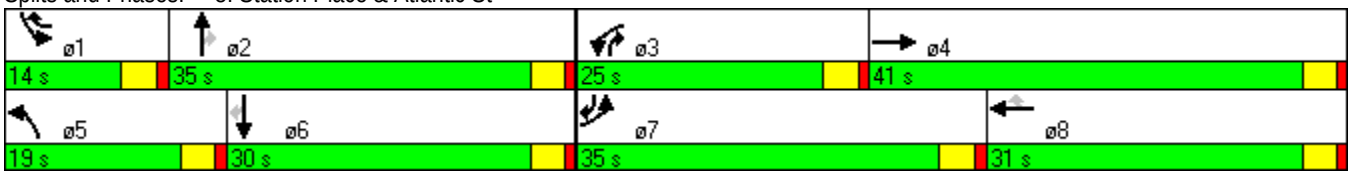
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	205	100	313	152	130	60	686	256	90	383	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.951				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1626	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1626	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				141			216			198
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	277	223	109	340	165	141	65	746	278	98	416	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	332	0	340	165	141	65	746	278	98	416	198
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	35.0	41.0	0.0	25.0	31.0	14.0	19.0	35.0	25.0	14.0	30.0	35.0
Total Split (%)	30.4%	35.7%	0.0%	21.7%	27.0%	12.2%	16.5%	30.4%	21.7%	12.2%	26.1%	30.4%
Maximum Green (s)	31.0	37.0		21.0	27.0	10.0	15.0	31.0	21.0	10.0	26.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

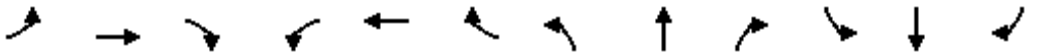
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.83	0.81		1.21	0.50	0.25	0.47	0.70	0.31	0.62	0.37	0.21
Control Delay	64.4	49.9		149.8	60.3	5.9	53.2	35.1	8.9	68.5	15.6	0.8
Queue Delay	672.3	0.3		163.8	0.0	674.7	0.0	102.0	1.0	0.0	0.4	0.6
Total Delay	736.6	50.1		313.6	60.3	680.6	53.2	137.1	9.9	68.5	16.0	1.5
Queue Length 50th (ft)	207	185		~312	124	10	47	260	52	74	52	0
Queue Length 95th (ft)	m275	m213		m#359	m114	m5	m62	#381	m113	m65	m101	m14
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	409	539		281	381	567	208	1065	883	162	1129	990
Starvation Cap Reductn	0	0		0	0	0	0	296	381	0	298	505
Spillback Cap Reductn	409	22		66	0	550	0	453	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	277.00	0.64		1.58	0.43	8.29	0.31	1.22	0.55	0.60	0.50	0.41

Intersection Summary

Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ 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.

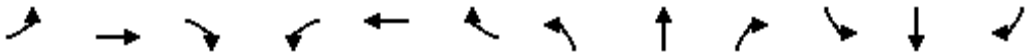
Splits and Phases: 8: Station Place & Atlantic St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	205	100	313	152	130	60	686	256	90	383	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1626		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1626		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	277	223	109	340	165	141	65	746	278	98	416	198
RTOR Reduction (vph)	0	17	0	0	0	98	0	0	104	0	0	83
Lane Group Flow (vph)	277	315	0	340	165	43	65	746	174	98	416	115
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	25.4	27.9		21.0	23.5	35.2	8.8	38.4	59.4	11.7	41.3	66.7
Effective Green, g (s)	25.4	27.9		21.0	23.5	35.2	8.8	38.4	59.4	11.7	41.3	66.7
Actuated g/C Ratio	0.22	0.24		0.18	0.20	0.31	0.08	0.33	0.52	0.10	0.36	0.58
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	335	394		281	331	470	122	1064	786	157	1106	847
v/s Ratio Prot	c0.18	c0.19		c0.22	0.10	0.01	0.04	c0.23	0.04	c0.06	c0.14	0.03
v/s Ratio Perm						0.02			0.08			0.05
v/c Ratio	0.83	0.80		1.21	0.50	0.09	0.53	0.70	0.22	0.62	0.38	0.14
Uniform Delay, d1	42.7	40.9		47.0	40.5	28.5	51.1	33.3	15.2	49.5	27.3	11.0
Progression Factor	1.11	0.98		1.03	1.42	1.27	0.92	0.91	1.91	1.36	0.52	0.45
Incremental Delay, d2	12.9	9.0		108.2	0.5	0.0	3.1	2.7	0.1	0.7	0.1	0.0
Delay (s)	60.4	49.2		156.3	57.9	36.2	50.4	33.1	29.1	68.2	14.3	5.0
Level of Service	E	D		F	E	D	D	C	C	E	B	A
Approach Delay (s)		54.3			105.0			33.1			19.1	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

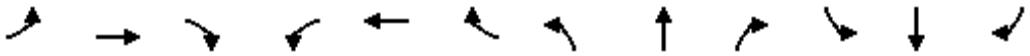


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	371	1481	300	480	826	0	0	813	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.979						0.963	
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	5409	0	1540	3079	0	0	2965	0
Flt Permitted					0.991		0.100					
Satd. Flow (perm)	0	0	0	0	5409	0	162	3079	0	0	2965	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	391	1559	316	505	869	0	0	856	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2266	0	505	869	0	0	1140	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	36.0	77.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	33.0%	33.0%	0.0%	31.3%	67.0%	0.0%	0.0%	35.7%	0.0%
Maximum Green (s)				34.0	34.0		32.0	72.0			36.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.39		1.04	0.45			1.19	
Control Delay					213.9		81.7	10.8			131.7	
Queue Delay					206.7		266.3	7.4			104.3	
Total Delay					420.6		347.9	18.3			236.1	
Queue Length 50th (ft)					~651		~352	130			~527	
Queue Length 95th (ft)					#727		m#413	m142			#665	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					1625		486	1928			956	
Starvation Cap Reductn					0		181	1008			0	
Spillback Cap Reductn					403		0	0			157	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.85		1.66	0.94			1.43	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ 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.	

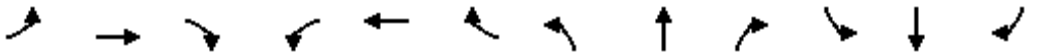
Splits and Phases: 9: North State St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	371	1481	300	480	826	0	0	813	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5412		1540	3079			2964	
Flt Permitted					0.99		0.10	1.00			1.00	
Satd. Flow (perm)					5412		162	3079			2964	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	391	1559	316	505	869	0	0	856	284
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	2241	0	505	869	0	0	1112	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					34.0		72.0	72.0			36.0	
Effective Green, g (s)					34.0		72.0	72.0			36.0	
Actuated g/C Ratio					0.30		0.63	0.63			0.31	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1600		485	1928			928	
v/s Ratio Prot					c0.41		c0.29	0.28			c0.38	
v/s Ratio Perm							0.36					
v/c Ratio					1.40		1.04	0.45			1.20	
Uniform Delay, d1					40.5		34.4	11.2			39.5	
Progression Factor					1.00		1.41	0.92			1.00	
Incremental Delay, d2					184.0		39.2	0.4			99.6	
Delay (s)					224.5		87.7	10.7			139.1	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			224.5			39.0			139.1	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM Average Control Delay	150.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

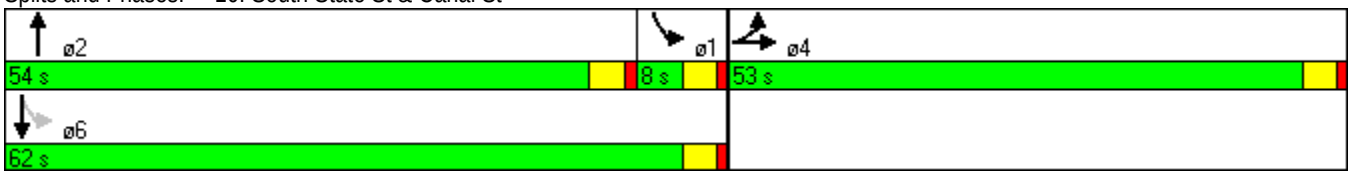


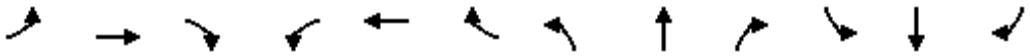
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	2232	500	0	0	0	0	966	392	360	824	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.973						0.957				
Flt Protected	0.950										0.985	
Satd. Flow (prot)	1593	4453	0	0	0	0	0	2845	0	0	3033	0
Flt Permitted	0.950										0.517	
Satd. Flow (perm)	1593	4453	0	0	0	0	0	2845	0	0	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54						14				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	358	2349	526	0	0	0	0	1017	413	379	867	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	2875	0	0	0	0	0	1430	0	0	1246	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	53.0	53.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	8.0	62.0	0.0
Total Split (%)	46.1%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.0%	0.0%	7.0%	53.9%	0.0%
Maximum Green (s)	49.0	49.0						50.0		4.0	58.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.53	1.49						0.99			6.77dl	
Control Delay	25.0	247.3						30.1			269.5	
Queue Delay	0.6	0.0						23.8			39.4	
Total Delay	25.6	247.3						54.0			309.0	
Queue Length 50th (ft)	150	~1067						325			~702	
Queue Length 95th (ft)	m114	m#628						m319			m#494	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	679	1928						1442			803	
Starvation Cap Reductn	0	0						44			43	
Spillback Cap Reductn	93	0						100			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.61	1.49						1.07			1.64	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

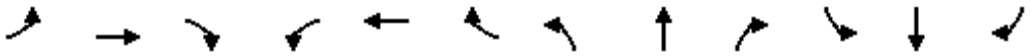




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	2232	500	0	0	0	0	966	392	360	824	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.97						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.99	
Satd. Flow (prot)	1593	4451						2844			3033	
Flt Permitted	0.95	1.00						1.00			0.52	
Satd. Flow (perm)	1593	4451						2844			1591	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	2349	526	0	0	0	0	1017	413	379	867	0
RTOR Reduction (vph)	0	31	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	358	2844	0	0	0	0	0	1423	0	0	1246	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	49.0	49.0						58.0			58.0	
Effective Green, g (s)	49.0	49.0						58.0			58.0	
Actuated g/C Ratio	0.43	0.43						0.50			0.50	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	679	1897						1434			802	
v/s Ratio Prot	0.22	c0.64						0.50				
v/s Ratio Perm											c0.78	
v/c Ratio	0.53	1.50						0.99			6.77dl	
Uniform Delay, d1	24.4	33.0						28.3			28.5	
Progression Factor	0.99	0.88						0.85			0.59	
Incremental Delay, d2	0.1	224.9						5.6			249.7	
Delay (s)	24.2	254.1						29.6			266.4	
Level of Service	C	F						C			F	
Approach Delay (s)		228.6			0.0			29.6			266.4	
Approach LOS		F			A			C			F	

Intersection Summary			
HCM Average Control Delay	188.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



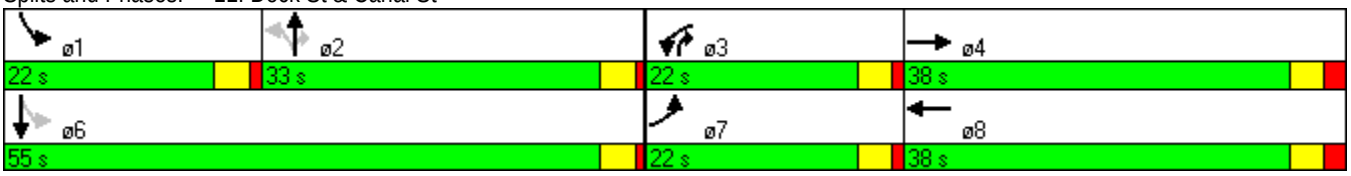
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	523	0	510	471	450	30	610	550	640	570	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.927				0.850		0.975	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1540	3079	0	1486	2854	0	0	3073	1378	1540	3002	0
Flt Permitted	0.950			0.950				0.886		0.142		
Satd. Flow (perm)	1540	3079	0	1486	2854	0	0	2728	1378	230	3002	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					213				63		26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	314	551	0	537	496	474	32	642	579	674	600	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	314	551	0	537	970	0	0	674	579	674	720	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	22.0	38.0	0.0	22.0	38.0	0.0	33.0	33.0	22.0	22.0	55.0	0.0
Total Split (%)	19.1%	33.0%	0.0%	19.1%	33.0%	0.0%	28.7%	28.7%	19.1%	19.1%	47.8%	0.0%
Maximum Green (s)	18.0	33.0		18.0	33.0		29.0	29.0	18.0	18.0	51.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.30	0.61		2.30	0.98			0.98	0.90	2.20	0.53	
Control Delay	200.1	49.7		624.3	55.0			72.9	44.9	561.0	21.1	
Queue Delay	0.0	0.0		0.0	16.3			10.2	0.0	0.0	1.5	
Total Delay	200.1	49.7		624.3	71.4			83.1	44.9	561.0	22.6	
Queue Length 50th (ft)	~305	205		~649	307			262	354	~755	164	
Queue Length 95th (ft)	#487	267		#862	#453			#387	#586	m#392	m100	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	241	910		233	994			688	646	307	1346	
Starvation Cap Reductn	0	0		0	0			0	0	0	416	
Spillback Cap Reductn	0	0		0	60			28	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	1.30	0.61		2.30	1.04			1.02	0.90	2.20	0.77	

Intersection Summary

Area Type: CBD
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ 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: 11: Dock St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	523	0	510	471	450	30	610	550	640	570	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.93			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2853			3072	1378	1540	3002	
Flt Permitted	0.95	1.00		0.95	1.00			0.89	1.00	0.14	1.00	
Satd. Flow (perm)	1540	3079		1486	2853			2728	1378	231	3002	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	314	551	0	537	496	474	32	642	579	674	600	120
RTOR Reduction (vph)	0	0	0	0	150	0	0	0	37	0	14	0
Lane Group Flow (vph)	314	551	0	537	820	0	0	674	542	674	706	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	18.0	33.0		18.0	33.0			29.0	47.0	51.0	51.0	
Effective Green, g (s)	18.0	34.0		18.0	34.0			29.0	47.0	51.0	51.0	
Actuated g/C Ratio	0.16	0.30		0.16	0.30			0.25	0.41	0.44	0.44	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	241	910		233	843			688	611	307	1331	
v/s Ratio Prot	0.20	0.18		c0.36	c0.29				0.14	c0.34	0.24	
v/s Ratio Perm								0.25	0.25	c0.63		
v/c Ratio	1.30	0.61		2.30	0.97			0.98	0.89	2.20	0.53	
Uniform Delay, d1	48.5	34.7		48.5	40.0			42.7	31.5	31.5	23.3	
Progression Factor	0.94	1.33		1.00	1.00			1.00	1.00	1.18	0.92	
Incremental Delay, d2	162.2	1.1		600.5	24.3			29.7	14.5	538.9	0.1	
Delay (s)	208.1	47.4		649.0	64.4			72.4	46.0	576.1	21.7	
Level of Service	F	D		F	E			E	D	F	C	
Approach Delay (s)		105.7			272.7			60.2			289.7	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	195.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	121.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	451	12	1	370	109	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.968	
Flt Protected					0.963	
Satd. Flow (prot)	1863	1583	0	1900	1736	0
Flt Permitted					0.963	
Satd. Flow (perm)	1863	1583	0	1900	1736	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	490	13	1	402	118	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	13	0	403	154	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	451	12	1	370	109	33
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	490	13	1	402	118	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.96	
vC, conflicting volume			503		895	490
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			503		867	490
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		62	94
cM capacity (veh/h)			1061		309	578

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	490	13	403	154
Volume Left	0	0	1	118
Volume Right	0	13	0	36
cSH	1700	1700	1061	346
Volume to Capacity	0.29	0.01	0.00	0.45
Queue Length 95th (ft)	0	0	0	55
Control Delay (s)	0.0	0.0	0.0	23.5
Lane LOS			A	C
Approach Delay (s)	0.0		0.0	23.5
Approach LOS				C

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	483	1	23	371	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.997		
Satd. Flow (prot)	1863	0	0	1894	0	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1894	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	525	1	25	403	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	526	0	0	428	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	483	1	23	371	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	525	1	25	403	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.93	
vC, conflicting volume			526		979	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			526		941	526
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1041		266	552

Direction, Lane #	EB 1	WB 1
Volume Total	526	428
Volume Left	0	25
Volume Right	1	0
cSH	1700	1041
Volume to Capacity	0.31	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.8
Lane LOS		A
Approach Delay (s)	0.0	0.8
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	483	0	0	394	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	508	0	0	415	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	508	0	0	415	0	81
Sign Control	Free			Free	Stop	

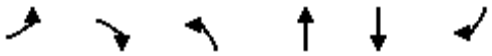
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	483	0	0	394	0	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	508	0	0	415	0	81
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.92	
vC, conflicting volume			508		923	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			508		875	508
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			1057		295	565

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	508	415	81
Volume Left	0	0	0
Volume Right	0	0	81
cSH	1700	1700	565
Volume to Capacity	0.30	0.24	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	12.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

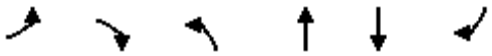


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	72	30	40	930	750	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.960					0.850
Flt Protected	0.966			0.998		
Satd. Flow (prot)	1727	0	0	1859	1863	1583
Flt Permitted	0.966			0.944		
Satd. Flow (perm)	1727	0	0	1758	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					50
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	78	33	43	1011	815	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	0	1054	815	50
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	31.0	0.0	84.0	84.0	84.0	84.0
Total Split (%)	27.0%	0.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	26.0		79.0	79.0	79.0	79.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.54			0.73	0.53	0.04
Control Delay	49.6			9.2	9.8	1.5
Queue Delay	0.0			12.7	5.7	0.0
Total Delay	49.7			21.9	15.5	1.5
Queue Length 50th (ft)	67			269	299	2
Queue Length 95th (ft)	120			544	m347	m8
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	418			1441	1527	1293
Starvation Cap Reductn	0			0	643	0
Spillback Cap Reductn	3			380	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.27			0.99	0.92	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	72	30	40	930	750	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.96			1.00	1.00	0.85
Flt Protected	0.97			1.00	1.00	1.00
Satd. Flow (prot)	1727			1859	1863	1583
Flt Permitted	0.97			0.94	1.00	1.00
Satd. Flow (perm)	1727			1759	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	33	43	1011	815	50
RTOR Reduction (vph)	15	0	0	0	0	9
Lane Group Flow (vph)	96	0	0	1054	815	41
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	11.7			93.3	93.3	93.3
Effective Green, g (s)	12.7			94.3	94.3	93.3
Actuated g/C Ratio	0.11			0.82	0.82	0.81
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	191			1442	1528	1284
v/s Ratio Prot	c0.06				0.44	
v/s Ratio Perm				c0.60		0.03
v/c Ratio	0.50			0.73	0.53	0.03
Uniform Delay, d1	48.2			4.7	3.3	2.1
Progression Factor	1.00			1.00	2.28	1.66
Incremental Delay, d2	2.1			3.3	0.9	0.0
Delay (s)	50.2			8.0	8.4	3.5
Level of Service	D			A	A	A
Approach Delay (s)	50.2			8.0	8.2	
Approach LOS	D			A	A	

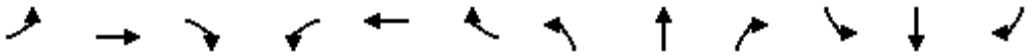
Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

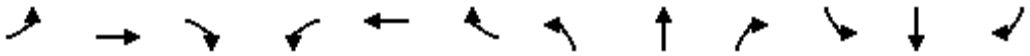
Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	630	210	0	0	0	0	480	600	60	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	15	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		225	0		0	0		0	75		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1752	3505	1568	0	0	0	0	1940	1600	1694	3388	0
Flt Permitted	0.950									0.062		
Satd. Flow (perm)	1752	3505	1568	0	0	0	0	1940	1600	111	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228						5			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		381			885			139			227	
Travel Time (s)		8.7			20.1			3.2			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	196	685	228	0	0	0	0	522	652	65	348	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	685	228	0	0	0	0	522	652	65	348	0
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Detector Phase	3	3	3					2 4 5	2 4 5	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0							14.0	14.0	
Minimum Split (s)	25.0	25.0	25.0							35.0	35.0	
Total Split (s)	25.0	25.0	25.0	0.0	0.0	0.0	0.0	90.0	90.0	70.0	70.0	0.0
Total Split (%)	21.7%	21.7%	21.7%	0.0%	0.0%	0.0%	0.0%	78.3%	78.3%	60.9%	60.9%	0.0%
Maximum Green (s)	20.0	20.0	20.0							65.0	65.0	
Yellow Time (s)	3.0	3.0	3.0							3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0							2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead									
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Minimum Gap (s)	3.0	3.0	3.0							3.0	3.0	

Lane Group	ø2	ø4	ø5
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	5
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	14.0	15.0	4.0
Minimum Split (s)	35.0	20.0	8.0
Total Split (s)	62.0	20.0	8.0
Total Split (%)	54%	17%	7%
Maximum Green (s)	57.0	15.0	4.0
Yellow Time (s)	3.0	3.0	3.5
All-Red Time (s)	2.0	2.0	0.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes
Vehicle Extension (s)	3.5	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0							0.0	0.0	
Recall Mode	None	None	None							Min	Min	
Walk Time (s)										5.0	5.0	
Flash Dont Walk (s)										11.0	11.0	
Pedestrian Calls (#/hr)										0	0	
v/c Ratio	0.64	1.12	0.49					0.36	0.55	1.03	0.18	
Control Delay	54.9	118.8	9.4					0.2	1.2	154.8	12.4	
Queue Delay	0.0	0.0	0.0					6.7	8.1	0.0	0.0	
Total Delay	54.9	118.8	9.4					6.9	9.2	154.8	12.4	
Queue Length 50th (ft)	136	~308	0					1	32	~52	62	
Queue Length 95th (ft)	217	#428	68					m1	m35	#99	87	
Internal Link Dist (ft)		301			805			59			147	
Turn Bay Length (ft)	225		225							75		
Base Capacity (vph)	305	610	461					1427	1178	63	1915	
Starvation Cap Reductn	0	0	0					844	481	0	0	
Spillback Cap Reductn	0	0	4					0	0	0	65	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.64	1.12	0.50					0.90	0.94	1.03	0.19	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

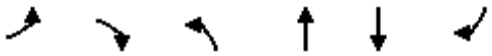
Splits and Phases: 1: I-95 NB Off Ramp & Greenwich Ave

Lane Group	ø2	ø4	ø5
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	Min	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
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			

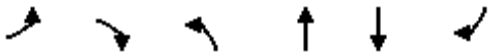
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	630	210	0	0	0	0	480	600	60	320	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	15	11	11	11
Total Lost time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3505	1568					1940	1600	1694	3388	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.06	1.00	
Satd. Flow (perm)	1752	3505	1568					1940	1600	110	3388	
Peak-hour factor, PHF	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)	196	685	228	0	0	0	0	522	652	65	348	0
RTOR Reduction (vph)	0	0	188	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	196	685	40	0	0	0	0	522	651	65	348	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	11%	11%	11%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Perm		
Protected Phases		3						2 4 5			6	
Permitted Phases	3		3						2 4 5	6		
Actuated Green, G (s)	20.0	20.0	20.0					86.0	86.0	65.0	65.0	
Effective Green, g (s)	20.0	20.0	20.0					86.0	86.0	65.0	65.0	
Actuated g/C Ratio	0.17	0.17	0.17					0.75	0.75	0.57	0.57	
Clearance Time (s)	5.0	5.0	5.0							5.0	5.0	
Vehicle Extension (s)	4.0	4.0	4.0							3.5	3.5	
Lane Grp Cap (vph)	305	610	273					1451	1197	62	1915	
v/s Ratio Prot		c0.20						0.27			0.10	
v/s Ratio Perm	0.11		0.03						c0.41	c0.59		
v/c Ratio	0.64	1.12	0.15					0.36	0.54	1.05	0.18	
Uniform Delay, d1	44.2	47.5	40.3					5.0	6.2	25.0	12.1	
Progression Factor	1.00	1.00	1.00					0.02	0.15	1.00	1.00	
Incremental Delay, d2	5.1	75.2	0.3					0.0	0.1	128.4	0.1	
Delay (s)	49.3	122.7	40.6					0.1	0.9	153.4	12.2	
Level of Service	D	F	D					A	A	F	B	
Approach Delay (s)		92.8			0.0			0.6			34.4	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



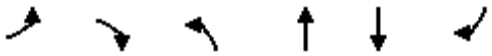
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Lane Configurations									
Volume (vph)	440	70	50	640	450	80			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	12	12	12	12	12	12			
Grade (%)	0%			0%	0%				
Storage Length (ft)	0	0	0			0			
Storage Lanes	2	0	0			1			
Taper Length (ft)	25	25	25			25			
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95			
Ped Bike Factor									
Frt	0.979				0.997	0.850			
Flt Protected	0.959			0.996					
Satd. Flow (prot)	3393	0	0	1855	1764	1504			
Flt Permitted	0.959			0.929					
Satd. Flow (perm)	3393	0	0	1730	1764	1504			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	13				3	78			
Link Speed (mph)	30			30	30				
Link Distance (ft)	379			424	139				
Travel Time (s)	8.6			9.6	3.2				
Confl. Peds. (#/hr)									
Confl. Bikes (#/hr)									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Growth Factor	100%	100%	100%	100%	100%	100%			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%			
Bus Blockages (#/hr)	0	0	0	0	0	0			
Parking (#/hr)									
Mid-Block Traffic (%)	0%			0%	0%				
Adj. Flow (vph)	478	76	54	696	489	87			
Shared Lane Traffic (%)						10%			
Lane Group Flow (vph)	554	0	0	750	498	78			
Turn Type			Perm			Perm			
Protected Phases	4			2	3 6 5		3	5	6
Permitted Phases			2			3 6 5			
Detector Phase	4		2	2	3 6 5	3 6 5			
Switch Phase									
Minimum Initial (s)	15.0		14.0	14.0			20.0	4.0	14.0
Minimum Split (s)	20.0		35.0	35.0			25.0	8.0	35.0
Total Split (s)	20.0	0.0	62.0	62.0	103.0	103.0	25.0	8.0	70.0
Total Split (%)	17.4%	0.0%	53.9%	53.9%	89.6%	89.6%	22%	7%	61%
Maximum Green (s)	15.0		57.0	57.0			20.0	4.0	65.0
Yellow Time (s)	3.0		3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0		2.0	2.0			2.0	0.5	2.0
Lost Time Adjust (s)	0.0	1.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0			
Lead/Lag	Lag		Lead	Lead			Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	
Vehicle Extension (s)	4.0		3.5	3.5			4.0	3.0	3.5
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3	ø5	ø6
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0
Recall Mode	None		Min	Min			None	None	Min
Walk Time (s)			5.0	5.0					5.0
Flash Dont Walk (s)			11.0	11.0					11.0
Pedestrian Calls (#/hr)			0	0					0
v/c Ratio	1.22			0.92	0.36	0.07			
Control Delay	159.2			45.4	2.6	0.1			
Queue Delay	15.7			0.0	0.4	1.2			
Total Delay	174.9			45.4	3.0	1.3			
Queue Length 50th (ft)	~256			478	30	0			
Queue Length 95th (ft)	#370			#730	48	0			
Internal Link Dist (ft)	299			344	59				
Turn Bay Length (ft)									
Base Capacity (vph)	454			857	1381	1194			
Starvation Cap Reductn	0			0	431	968			
Spillback Cap Reductn	13			0	0	0			
Storage Cap Reductn	0			0	0	0			
Reduced v/c Ratio	1.26			0.88	0.52	0.35			

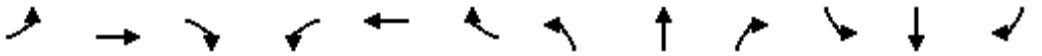
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 2: First Stamford Place & Greenwich Ave

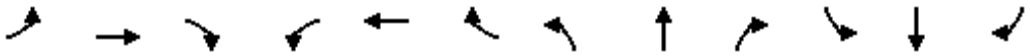


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	440	70	50	640	450	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.97			1.00	0.95	0.95
Frt	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	3393			1856	1765	1504
Flt Permitted	0.96			0.93	1.00	1.00
Satd. Flow (perm)	3393			1731	1765	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	76	54	696	489	87
RTOR Reduction (vph)	11	0	0	0	1	20
Lane Group Flow (vph)	543	0	0	750	497	58
Turn Type			Perm			Perm
Protected Phases	4			2	3 6 5	
Permitted Phases			2			3 6 5
Actuated Green, G (s)	15.0			54.4	90.0	90.0
Effective Green, g (s)	15.0			54.4	86.0	86.0
Actuated g/C Ratio	0.13			0.47	0.75	0.75
Clearance Time (s)	5.0			5.0		
Vehicle Extension (s)	4.0			3.5		
Lane Grp Cap (vph)	443			819	1320	1125
v/s Ratio Prot	c0.16				c0.28	
v/s Ratio Perm				c0.43		0.04
v/c Ratio	1.23			0.92	0.38	0.05
Uniform Delay, d1	50.0			28.2	5.1	3.8
Progression Factor	1.00			1.00	0.49	0.00
Incremental Delay, d2	119.9			15.0	0.2	0.0
Delay (s)	169.9			43.1	2.8	0.0
Level of Service	F			D	A	A
Approach Delay (s)	169.9			43.1	2.4	
Approach LOS	F			D	A	

Intersection Summary			
HCM Average Control Delay	68.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



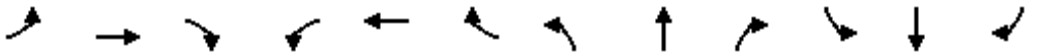
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	330	790	500	1440	0	0	1400	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16	11	11	11	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25		25	25		100	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1438	1513	1458	1468	2935	0	0	3124	1398
Flt Permitted				0.950			0.083					
Satd. Flow (perm)	0	0	0	1438	1513	1458	128	2935	0	0	3124	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						34						215
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		114			809			231			446	
Travel Time (s)		2.6			18.4			5.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	184	337	806	510	1469	0	0	1429	765
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	184	337	806	510	1469	0	0	1429	765
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Detector Phase				8	8	8	5	2			6	6
Switch Phase												
Minimum Initial (s)				21.0	21.0	21.0	4.0	8.0			8.0	8.0
Minimum Split (s)				26.0	26.0	26.0	8.0	25.0			25.0	25.0
Total Split (s)	0.0	0.0	0.0	44.0	44.0	44.0	22.0	71.0	0.0	0.0	49.0	49.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	38.3%	19.1%	61.7%	0.0%	0.0%	42.6%	42.6%
Maximum Green (s)				39.0	39.0	39.0	18.0	66.0			44.0	44.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	1.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0	3.0	2.0	3.0			3.0	3.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Recall Mode				None	None	None	None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0		0			0	0
v/c Ratio				0.38	0.66	1.56	1.80	0.87			1.20	1.15
Control Delay				40.6	45.2	285.6	390.0	37.9			129.6	107.5
Queue Delay				674.3	0.0	0.0	216.5	399.0			376.7	0.0
Total Delay				715.0	45.2	285.6	606.4	436.9			506.3	107.5
Queue Length 50th (ft)				116	227	~829	~540	403			~674	~562
Queue Length 95th (ft)				m91	m175	m#503	m#230	m127			#812	#802
Internal Link Dist (ft)		34			729			151			366	
Turn Bay Length (ft)												
Base Capacity (vph)				488	513	517	284	1684			1195	668
Starvation Cap Reductn				0	0	0	60	906			0	0
Spillback Cap Reductn				488	0	0	0	0			493	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				184.00	0.66	1.56	2.28	1.89			2.04	1.15

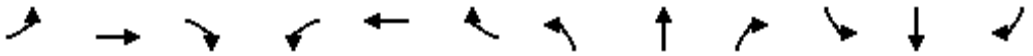
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after 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: 3: I-95 SB On Ramp & Washington Blvd



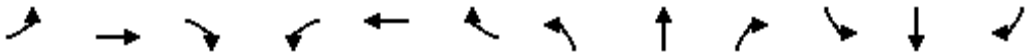
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	330	790	500	1440	0	0	1400	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	16	11	11	11	12	12	12
Total Lost time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1438	1513	1458	1468	2935			3124	1398
Flt Permitted				0.95	1.00	1.00	0.08	1.00			1.00	1.00
Satd. Flow (perm)				1438	1513	1458	129	2935			3124	1398
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	184	337	806	510	1469	0	0	1429	765
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	0	133
Lane Group Flow (vph)	0	0	0	184	337	784	510	1469	0	0	1429	632
Heavy Vehicles (%)	0%	0%	0%	13%	13%	13%	7%	7%	7%	4%	4%	4%
Turn Type				custom		custom	pm+pt					Perm
Protected Phases				8	8	8	5	2			6	
Permitted Phases				8	8	8	2					6
Actuated Green, G (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Effective Green, g (s)				39.0	39.0	39.0	66.0	66.0			44.0	44.0
Actuated g/C Ratio				0.34	0.34	0.34	0.57	0.57			0.38	0.38
Clearance Time (s)				5.0	5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)				5.0	5.0	5.0	2.0	3.0			3.0	3.0
Lane Grp Cap (vph)				488	513	494	284	1684			1195	535
v/s Ratio Prot				0.13	0.22	c0.54	c0.28	0.50			0.46	
v/s Ratio Perm							c0.75					0.45
v/c Ratio				0.38	0.66	1.59	1.80	0.87			1.20	1.18
Uniform Delay, d1				28.8	32.3	38.0	37.2	20.9			35.5	35.5
Progression Factor				1.37	1.34	1.32	1.55	1.74			1.00	1.00
Incremental Delay, d2				0.1	0.4	264.6	359.4	0.6			96.5	99.7
Delay (s)				39.7	43.8	315.0	416.9	37.1			132.0	135.2
Level of Service				D	D	F	F	D			F	F
Approach Delay (s)		0.0			207.9			135.0			133.1	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM Average Control Delay	151.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	193.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	690	270	0	0	0	0	1470	300	640	940	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	0		0	0		0	170		0
Storage Lanes	1		1	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.97	0.95	1.00
Ped Bike Factor	0.99		0.93					1.00		1.00		
Frt			0.850					0.975				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1468	1545	1313	0	0	0	0	3983	0	2749	2834	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1454	1545	1225	0	0	0	0	3983	0	2744	2834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			180					34				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		885			1140			291			231	
Travel Time (s)		20.1			25.9			6.6			5.3	
Confl. Peds. (#/hr)	8		47				4		10	10		4
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	573	841	329	0	0	0	0	1793	366	780	1146	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	573	841	329	0	0	0	0	2159	0	780	1146	0
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Detector Phase	9	9	9					2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0					15.0		7.0	15.0	
Minimum Split (s)	14.0	14.0	14.0					20.0		11.0	20.0	
Total Split (s)	34.0	34.0	34.0	0.0	0.0	0.0	0.0	30.0	0.0	21.0	51.0	0.0
Total Split (%)	29.6%	29.6%	29.6%	0.0%	0.0%	0.0%	0.0%	26.1%	0.0%	18.3%	44.3%	0.0%
Maximum Green (s)	29.0	29.0	29.0					25.0		17.0	46.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Minimum Gap (s)	2.0	2.0	2.0					3.0		2.0	3.0	

Lane Group	ø3
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	26%
Maximum Green (s)	27.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					C-Max		Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	1.06	0.46					2.42		1.92	1.01	
Control Delay	30.5	77.9	9.8					661.6		450.4	38.7	
Queue Delay	416.8	0.0	0.1					34.8		30.9	90.2	
Total Delay	447.3	77.9	9.9					696.4		481.3	128.9	
Queue Length 50th (ft)	327	~686	61					~973		~451	~193	
Queue Length 95th (ft)	405	#791	107					#940		m#390	m124	
Internal Link Dist (ft)		805			1060			211			151	
Turn Bay Length (ft)	75									170		
Base Capacity (vph)	753	793	716					892		406	1134	
Starvation Cap Reductn	0	0	0					21		14	204	
Spillback Cap Reductn	455	0	34					144		0	9	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.92	1.06	0.48					2.89		1.99	1.23	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ 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: 4: South State St & Washington Blvd

Lane Group	ø3
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
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	

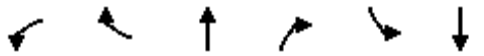
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	690	270	0	0	0	0	1470	300	640	940	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	10	10	10
Total Lost time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00					0.91		0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.96					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1468	1545	1262					3981		2749	2834	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1468	1545	1262					3981		2749	2834	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	573	841	329	0	0	0	0	1793	366	780	1146	0
RTOR Reduction (vph)	0	0	88	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	573	841	241	0	0	0	0	2132	0	780	1146	0
Confl. Peds. (#/hr)	8		47				4		10	10		4
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	10%	10%	10%	7%	7%	7%
Turn Type	Split		Perm							Prot		
Protected Phases	9	9						2		1	6	
Permitted Phases			9					2				
Actuated Green, G (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Effective Green, g (s)	59.0	59.0	59.0					25.0		17.0	46.0	
Actuated g/C Ratio	0.51	0.51	0.51					0.22		0.15	0.40	
Clearance Time (s)	5.0	5.0	5.0					5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0					3.0		2.0	3.0	
Lane Grp Cap (vph)	753	793	647					865		406	1134	
v/s Ratio Prot	0.39	c0.54						c0.54		c0.28	0.40	
v/s Ratio Perm			0.19									
v/c Ratio	0.76	1.06	0.37					2.47		1.92	1.01	
Uniform Delay, d1	22.4	28.0	16.9					45.0		49.0	34.5	
Progression Factor	1.00	1.00	1.00					0.77		1.32	0.51	
Incremental Delay, d2	7.1	49.2	1.6					661.6		418.0	19.0	
Delay (s)	29.5	77.2	18.5					696.1		482.5	36.6	
Level of Service	C	E	B					F		F	D	
Approach Delay (s)		50.5			0.0			696.1			217.2	
Approach LOS		D			A			F			F	

Intersection Summary			
HCM Average Control Delay	344.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	193.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Volume (vph)	100	480	1290	170	230	980	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	-4%		-2%			2%	
Storage Length (ft)	200	50		0	0		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25	25		25	25		
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	0.95	
Ped Bike Factor							
Frt		0.850	0.983				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1578	2361	3015	0	1561	3123	
Flt Permitted	0.950				0.062		
Satd. Flow (perm)	1578	2361	3015	0	102	3123	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		495	16				
Link Speed (mph)	30		30			30	
Link Distance (ft)	443		912			291	
Travel Time (s)	10.1		20.7			6.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)		0					
Mid-Block Traffic (%)	0%		0%			0%	
Adj. Flow (vph)	115	552	1483	195	264	1126	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	115	552	1678	0	264	1126	
Turn Type		custom			pm+pt		
Protected Phases	8	1	2		1	6	9
Permitted Phases	8	8 1	2		6		
Detector Phase	8	1	2		1	6	
Switch Phase							
Minimum Initial (s)	9.0	4.0	15.0		4.0	15.0	4.0
Minimum Split (s)	14.0	8.0	20.0		8.0	20.0	20.0
Total Split (s)	16.0	23.0	56.0	0.0	23.0	79.0	20.0
Total Split (%)	13.9%	20.0%	48.7%	0.0%	20.0%	68.7%	17%
Maximum Green (s)	11.0	19.0	51.0		19.0	74.0	17.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0		1.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	1.0	0.0	0.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0	3.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None	C-Max		None	C-Max	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio	0.79	0.51	0.91		0.77	0.44	
Control Delay	82.9	11.6	29.6		39.9	3.3	
Queue Delay	0.0	0.5	672.3		5.8	0.8	
Total Delay	82.9	12.1	701.8		45.7	4.1	
Queue Length 50th (ft)	85	47	546		165	92	
Queue Length 95th (ft)	#171	96	#784		m179	m84	
Internal Link Dist (ft)	363		832			211	
Turn Bay Length (ft)	200	50					
Base Capacity (vph)	151	1107	1846		365	2564	
Starvation Cap Reductn	0	0	0		59	1041	
Spillback Cap Reductn	0	207	1260		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.76	0.61	2.86		0.86	0.74	

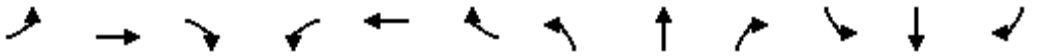
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Station Place & Washington Blvd

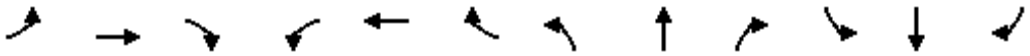
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	100	480	1290	170	230	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-4%		-2%			2%
Total Lost time (s)	5.0	4.0	5.0		4.0	5.0
Lane Util. Factor	1.00	0.88	0.95		1.00	0.95
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1578	2361	3013		1561	3123
Flt Permitted	0.95	1.00	1.00		0.06	1.00
Satd. Flow (perm)	1578	2361	3013		103	3123
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	115	552	1483	195	264	1126
RTOR Reduction (vph)	0	362	6	0	0	0
Lane Group Flow (vph)	115	190	1672	0	264	1126
Heavy Vehicles (%)	5%	5%	7%	7%	3%	3%
Parking (#/hr)		0				
Turn Type		custom			pm+pt	
Protected Phases	8	1	2		1	6
Permitted Phases	8	8 1	2		6	
Actuated Green, G (s)	10.6	30.8	70.2		94.4	94.4
Effective Green, g (s)	10.6	30.8	70.2		94.4	94.4
Actuated g/C Ratio	0.09	0.27	0.61		0.82	0.82
Clearance Time (s)	5.0	4.0	5.0		4.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	145	632	1839		341	2564
v/s Ratio Prot	c0.07	0.05	c0.55		c0.14	0.36
v/s Ratio Perm		0.03			0.50	
v/c Ratio	0.79	0.30	0.91		0.77	0.44
Uniform Delay, d1	51.1	33.5	19.6		33.7	2.9
Progression Factor	0.94	2.59	1.00		1.17	1.02
Incremental Delay, d2	24.8	0.3	8.2		4.8	0.2
Delay (s)	72.7	87.0	27.8		44.4	3.2
Level of Service	E	F	C		D	A
Approach Delay (s)	84.6		27.8			11.0
Approach LOS	F		C			B

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



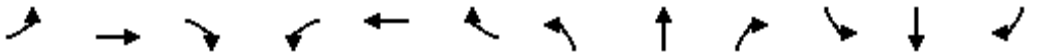
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	280	1820	320	270	910	0	0	590	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	11	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	0.95	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt					0.980							0.850
Flt Protected					0.994			0.989				
Satd. Flow (prot)	0	0	0	0	5618	0	0	3045	0	0	3504	1425
Flt Permitted					0.994			0.611				
Satd. Flow (perm)	0	0	0	0	5618	0	0	1881	0	0	3504	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					39							45
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		234			1170			231			324	
Travel Time (s)		5.3			26.6			5.3			7.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	337	2193	386	325	1096	0	0	711	855
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2916	0	0	1421	0	0	711	855
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Detector Phase				4	4		5	2			6	6
Switch Phase												
Minimum Initial (s)				22.0	22.0		7.0	18.0			18.0	18.0
Minimum Split (s)				26.0	26.0		11.0	22.0			22.0	22.0
Total Split (s)	0.0	0.0	0.0	49.0	49.0	0.0	11.0	66.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	0.0%	0.0%	42.6%	42.6%	0.0%	9.6%	57.4%	0.0%	0.0%	47.8%	47.8%
Maximum Green (s)				45.0	45.0		7.0	62.0			51.0	51.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Walk Time (s)				5.0	5.0			5.0			5.0	5.0
Flash Dont Walk (s)				11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0			0			0	0
v/c Ratio					1.31			1.40			0.38	1.08
Control Delay					166.0			205.6			16.0	83.1
Queue Delay					93.1			335.0			0.0	0.0
Total Delay					259.0			540.6			16.1	83.1
Queue Length 50th (ft)					~786			~759			153	~696
Queue Length 95th (ft)					m#553			m251			176	#818
Internal Link Dist (ft)		154			1090			151			244	
Turn Bay Length (ft)												
Base Capacity (vph)					2222			1014			1889	789
Starvation Cap Reductn					0			352			0	0
Spillback Cap Reductn					303			0			60	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.52			2.15			0.39	1.08

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~	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.

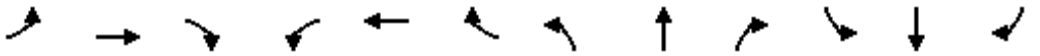
Splits and Phases: 6: North State St & Atlantic St



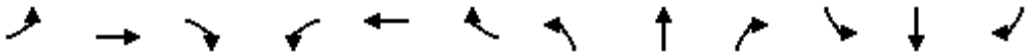
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	280	1820	320	270	910	0	0	590	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	15	12
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.86			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.99			1.00	1.00
Satd. Flow (prot)					5620			3044			3504	1425
Flt Permitted					0.99			0.61			1.00	1.00
Satd. Flow (perm)					5620			1883			3504	1425
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	337	2193	386	325	1096	0	0	711	855
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	0	2892	0	0	1421	0	0	711	834
Turn Type				Split			pm+pt					Perm
Protected Phases				4	4		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)					45.0			62.0			62.0	62.0
Effective Green, g (s)					45.0			62.0			62.0	62.0
Actuated g/C Ratio					0.39			0.54			0.54	0.54
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2199			1015			1889	768
v/s Ratio Prot					c0.51						0.20	
v/s Ratio Perm								c0.75				0.59
v/c Ratio					1.32			1.40			0.38	1.09
Uniform Delay, d1					35.0			26.5			15.3	26.5
Progression Factor					0.71			0.90			1.00	1.00
Incremental Delay, d2					142.2			180.6			0.6	58.4
Delay (s)					167.2			204.5			15.9	84.9
Level of Service					F			F			B	F
Approach Delay (s)		0.0			167.2			204.5			53.6	
Approach LOS		A			F			F			D	

Intersection Summary			
HCM Average Control Delay	146.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



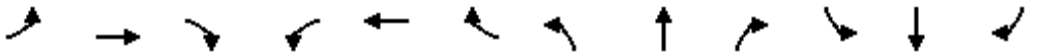
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	2260	100	0	0	0	0	600	460	320	550	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	15	12	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	500		0	0		0	0		0	0		0
Storage Lanes	3		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.81	0.81	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.941				
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1247	5214	0	0	0	0	0	1735	0	2987	1621	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1247	5214	0	0	0	0	0	1735	0	2987	1621	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			1115			111			231	
Travel Time (s)		25.9			25.3			2.5			5.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	744	2897	128	0	0	0	0	769	590	410	705	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	670	3099	0	0	0	0	0	1359	0	410	705	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		6.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		10.0	27.0	
Total Split (s)	60.0	60.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	13.0	55.0	0.0
Total Split (%)	52.2%	52.2%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	0.0%	11.3%	47.8%	0.0%
Maximum Green (s)	56.0	56.0						38.0		9.0	51.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.10	1.22						2.37		1.75	0.98	
Control Delay	98.0	125.1						641.9		385.7	52.3	
Queue Delay	620.2	89.4						56.1		0.0	0.0	
Total Delay	718.2	214.5						698.0		385.7	52.3	
Queue Length 50th (ft)	~697	506						~1683		~223	528	
Queue Length 95th (ft)	#770	m241						#1576		m#234	m500	
Internal Link Dist (ft)		1060			1035			31			151	
Turn Bay Length (ft)	500											
Base Capacity (vph)	607	2544						573		234	719	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	342	358						30		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	2.53	1.42						2.50		1.75	0.98	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

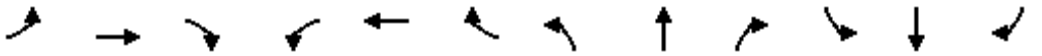
Splits and Phases: 7: South State St & Atlantic St



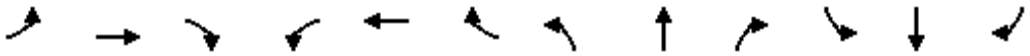
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	580	2260	100	0	0	0	0	600	460	320	550	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	15	12	11	11	12
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	0.81	0.81						1.00		0.97	1.00	
Frt	1.00	0.99						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1247	5212						1736		2987	1621	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1247	5212						1736		2987	1621	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	744	2897	128	0	0	0	0	769	590	410	705	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	670	3094	0	0	0	0	0	1359	0	410	705	0
Turn Type	custom									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases	4	4						2			6	
Actuated Green, G (s)	56.0	56.0						38.0		9.0	51.0	
Effective Green, g (s)	56.0	56.0						38.0		9.0	51.0	
Actuated g/C Ratio	0.49	0.49						0.33		0.08	0.44	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	607	2538						574		234	719	
v/s Ratio Prot	0.54	c0.59						c0.78		c0.14	0.44	
v/s Ratio Perm												
v/c Ratio	1.10	1.22						2.37		1.75	0.98	
Uniform Delay, d1	29.5	29.5						38.5		53.0	31.5	
Progression Factor	1.00	0.99						0.78		1.12	0.82	
Incremental Delay, d2	68.3	101.4						620.0		351.7	25.1	
Delay (s)	97.8	130.6						650.1		410.9	50.8	
Level of Service	F	F						F		F	D	
Approach Delay (s)		124.8			0.0			650.1			183.2	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	249.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



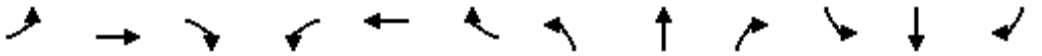
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	200	100	310	150	130	60	680	250	90	380	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	0		100	210		0	100		100	50		75
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25		100	25		25	25		25	25		50
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.950				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1516	1624	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1516	1624	0	1540	1621	1378	1593	3185	1425	1540	3079	1378
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				141			213			196
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		285			1258			302			199	
Travel Time (s)		6.5			28.6			6.9			4.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	272	217	109	337	163	141	65	739	272	98	413	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	326	0	337	163	141	65	739	272	98	413	196
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	5.0	5.0	20.0	5.0	5.0	20.0	5.0
Minimum Split (s)	9.0	24.0		9.0	24.0	9.0	9.0	24.0	9.0	9.0	24.0	9.0
Total Split (s)	35.0	41.0	0.0	25.0	31.0	14.0	19.0	35.0	25.0	14.0	30.0	35.0
Total Split (%)	30.4%	35.7%	0.0%	21.7%	27.0%	12.2%	16.5%	30.4%	21.7%	12.2%	26.1%	30.4%
Maximum Green (s)	31.0	37.0		21.0	27.0	10.0	15.0	31.0	21.0	10.0	26.0	31.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio	0.82	0.80		1.20	0.49	0.25	0.47	0.69	0.31	0.62	0.36	0.21
Control Delay	63.9	50.0		145.8	60.7	6.0	53.2	34.5	9.2	68.8	15.3	0.8
Queue Delay	672.4	0.1		162.1	0.0	674.7	0.0	98.0	1.0	0.0	0.4	0.6
Total Delay	736.3	50.2		307.9	60.7	680.7	53.2	132.5	10.2	68.8	15.7	1.4
Queue Length 50th (ft)	203	182		~308	123	11	47	255	51	74	48	0
Queue Length 95th (ft)	m272	m211		m#353	m114	m5	m62	#374	m118	m66	m100	m14
Internal Link Dist (ft)		205			1178			222			119	
Turn Bay Length (ft)				210			100		100	50		75
Base Capacity (vph)	409	538		281	381	567	208	1073	885	163	1138	993
Starvation Cap Reductn	0	0		0	0	0	0	300	386	0	306	504
Spillback Cap Reductn	409	13		66	0	549	0	462	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	272.00	0.62		1.57	0.43	7.83	0.31	1.21	0.55	0.60	0.50	0.40

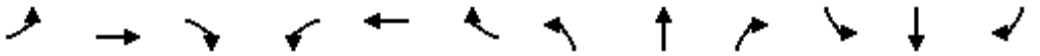
Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two 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: 8: Station Place & Atlantic St

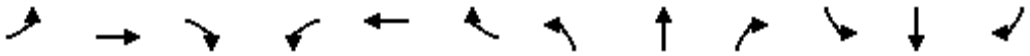


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	200	100	310	150	130	60	680	250	90	380	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		-4%			0%			0%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1516	1624		1540	1621	1378	1593	3185	1425	1540	3079	1378
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1516	1624		1540	1621	1378	1593	3185	1425	1540	3079	1378
Peak-hour factor, PHF	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)	272	217	109	337	163	141	65	739	272	98	413	196
RTOR Reduction (vph)	0	18	0	0	0	98	0	0	102	0	0	82
Lane Group Flow (vph)	272	309	0	337	163	43	65	739	170	98	413	114
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Actuated Green, G (s)	25.1	27.5		21.0	23.4	35.2	8.8	38.7	59.7	11.8	41.7	66.8
Effective Green, g (s)	25.1	27.5		21.0	23.4	35.2	8.8	38.7	59.7	11.8	41.7	66.8
Actuated g/C Ratio	0.22	0.24		0.18	0.20	0.31	0.08	0.34	0.52	0.10	0.36	0.58
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	331	388		281	330	470	122	1072	789	158	1116	848
v/s Ratio Prot	c0.18	c0.19		c0.22	0.10	0.01	0.04	c0.23	0.04	c0.06	c0.13	0.03
v/s Ratio Perm						0.02			0.08			0.05
v/c Ratio	0.82	0.80		1.20	0.49	0.09	0.53	0.69	0.21	0.62	0.37	0.13
Uniform Delay, d1	42.8	41.1		47.0	40.6	28.5	51.1	33.0	15.0	49.5	27.0	11.0
Progression Factor	1.11	0.99		1.03	1.43	1.30	0.92	0.91	2.04	1.37	0.51	0.42
Incremental Delay, d2	12.6	8.9		103.8	0.5	0.0	3.1	2.6	0.1	0.7	0.1	0.0
Delay (s)	60.0	49.6		152.1	58.3	37.1	50.3	32.5	30.6	68.3	14.0	4.6
Level of Service	E	D		F	E	D	D	C	C	E	B	A
Approach Delay (s)		54.3			103.0			33.1			18.9	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



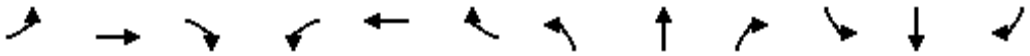
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	370	1480	300	480	820	0	0	810	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.979						0.963	
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	5409	0	1540	3079	0	0	2965	0
Flt Permitted					0.991		0.100					
Satd. Flow (perm)	0	0	0	0	5409	0	162	3079	0	0	2965	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1170			661			211			249	
Travel Time (s)		26.6			15.0			4.8			5.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	389	1558	316	505	863	0	0	853	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2263	0	505	863	0	0	1137	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Detector Phase				8	8		5	2			6	
Switch Phase												
Minimum Initial (s)				21.0	21.0		7.0	19.0			19.0	
Minimum Split (s)				25.0	25.0		11.0	24.0			24.0	
Total Split (s)	0.0	0.0	0.0	38.0	38.0	0.0	36.0	77.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	33.0%	33.0%	0.0%	31.3%	67.0%	0.0%	0.0%	35.7%	0.0%
Maximum Green (s)				34.0	34.0		32.0	72.0			36.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				1.0	1.0		1.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Max			C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio					1.39		1.04	0.45			1.19	
Control Delay					213.1		81.8	10.8			130.5	
Queue Delay					206.5		263.8	7.0			102.4	
Total Delay					419.5		345.7	17.9			232.9	
Queue Length 50th (ft)					~649		~352	128			~525	
Queue Length 95th (ft)					#726		m#416	m142			#662	
Internal Link Dist (ft)		1090			581			131			169	
Turn Bay Length (ft)												
Base Capacity (vph)					1625		486	1928			956	
Starvation Cap Reductn					0		180	1010			0	
Spillback Cap Reductn					403		0	0			155	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					1.85		1.65	0.94			1.42	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ 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.	

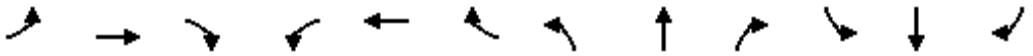
Splits and Phases: 9: North State St & Canal St



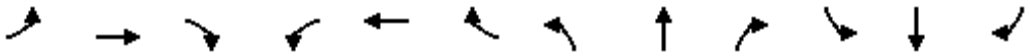
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	370	1480	300	480	820	0	0	810	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)					4.0		4.0	5.0			5.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5412		1540	3079			2964	
Flt Permitted					0.99		0.10	1.00			1.00	
Satd. Flow (perm)					5412		162	3079			2964	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	389	1558	316	505	863	0	0	853	284
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	2238	0	505	863	0	0	1109	0
Turn Type				Split			pm+pt					
Protected Phases				8	8		5	2			6	
Permitted Phases							2					
Actuated Green, G (s)					34.0		72.0	72.0			36.0	
Effective Green, g (s)					34.0		72.0	72.0			36.0	
Actuated g/C Ratio					0.30		0.63	0.63			0.31	
Clearance Time (s)					4.0		4.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1600		485	1928			928	
v/s Ratio Prot					c0.41		c0.29	0.28			c0.37	
v/s Ratio Perm							0.36					
v/c Ratio					1.40		1.04	0.45			1.19	
Uniform Delay, d1					40.5		34.4	11.2			39.5	
Progression Factor					1.00		1.41	0.92			1.00	
Incremental Delay, d2					183.2		39.4	0.4			98.3	
Delay (s)					223.7		87.8	10.7			137.8	
Level of Service					F		F	B			F	
Approach Delay (s)		0.0			223.7			39.2			137.8	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM Average Control Delay	150.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



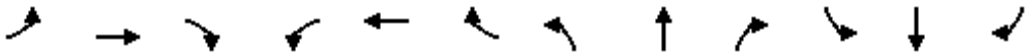
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	2230	500	0	0	0	0	960	390	360	820	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	12	12	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.973						0.957				
Flt Protected	0.950										0.985	
Satd. Flow (prot)	1593	4453	0	0	0	0	0	2845	0	0	3033	0
Flt Permitted	0.950										0.516	
Satd. Flow (perm)	1593	4453	0	0	0	0	0	2845	0	0	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55						14				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1115			208			421			211	
Travel Time (s)		25.3			4.7			9.6			4.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	358	2347	526	0	0	0	0	1011	411	379	863	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	2873	0	0	0	0	0	1422	0	0	1242	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Detector Phase	4	4						2		1	6	
Switch Phase												
Minimum Initial (s)	22.0	22.0						23.0		4.0	23.0	
Minimum Split (s)	26.0	26.0						27.0		8.0	27.0	
Total Split (s)	53.0	53.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	8.0	62.0	0.0
Total Split (%)	46.1%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.0%	0.0%	7.0%	53.9%	0.0%
Maximum Green (s)	49.0	49.0						50.0		4.0	58.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.53	1.49						0.99			6.77dl	
Control Delay	25.0	246.5						28.9			269.0	
Queue Delay	0.5	0.0						22.6			39.5	
Total Delay	25.5	246.5						51.5			308.5	
Queue Length 50th (ft)	150	~1065						321			~700	
Queue Length 95th (ft)	m114	m#627						m318			m#494	
Internal Link Dist (ft)		1035			128			341			131	
Turn Bay Length (ft)												
Base Capacity (vph)	679	1929						1442			801	
Starvation Cap Reductn	0	0						44			43	
Spillback Cap Reductn	88	0						100			0	
Storage Cap Reductn	0	0						0			0	
Reduced v/c Ratio	0.61	1.49						1.06			1.64	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

Splits and Phases: 10: South State St & Canal St

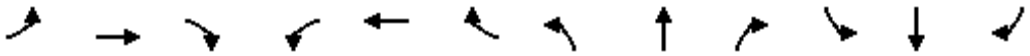


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	2230	500	0	0	0	0	960	390	360	820	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	10	12	12	11	12
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	1.00	0.91						0.95			0.95	
Frt	1.00	0.97						0.96			1.00	
Flt Protected	0.95	1.00						1.00			0.98	
Satd. Flow (prot)	1593	4451						2844			3033	
Flt Permitted	0.95	1.00						1.00			0.52	
Satd. Flow (perm)	1593	4451						2844			1590	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	2347	526	0	0	0	0	1011	411	379	863	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	358	2841	0	0	0	0	0	1415	0	0	1242	0
Turn Type	Split									pm+pt		
Protected Phases	4	4						2		1	6	
Permitted Phases										6		
Actuated Green, G (s)	49.0	49.0						58.0			58.0	
Effective Green, g (s)	49.0	49.0						58.0			58.0	
Actuated g/C Ratio	0.43	0.43						0.50			0.50	
Clearance Time (s)	4.0	4.0						4.0			4.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	679	1897						1434			802	
v/s Ratio Prot	0.22	c0.64						0.50				
v/s Ratio Perm											c0.78	
v/c Ratio	0.53	1.50						0.99			6.77dl	
Uniform Delay, d1	24.4	33.0						28.1			28.5	
Progression Factor	0.99	0.88						0.84			0.59	
Incremental Delay, d2	0.1	224.3						4.7			247.5	
Delay (s)	24.2	253.5						28.3			264.1	
Level of Service	C	F						C			F	
Approach Delay (s)		228.1			0.0			28.3			264.1	
Approach LOS		F			A			C			F	

Intersection Summary			
HCM Average Control Delay	187.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

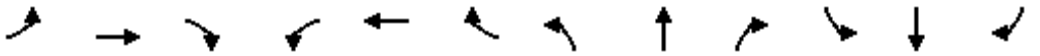
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	520	0	510	470	450	30	610	550	640	570	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	170		0	0		130	170		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.927				0.850		0.976	
Flt Protected	0.950			0.950				0.998		0.950		
Satd. Flow (prot)	1540	3079	0	1486	2854	0	0	3073	1378	1540	3005	0
Flt Permitted	0.950			0.950				0.886		0.142		
Satd. Flow (perm)	1540	3079	0	1486	2854	0	0	2728	1378	230	3005	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					213				64		25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1258			260			1032			421	
Travel Time (s)		28.6			5.9			23.5			9.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	305	547	0	537	495	474	32	642	579	674	600	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	305	547	0	537	969	0	0	674	579	674	716	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Detector Phase	7	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		15.0	15.0	5.0	5.0	15.0	
Minimum Split (s)	9.0	25.0		9.0	25.0		19.0	19.0	9.0	9.0	19.0	
Total Split (s)	22.0	38.0	0.0	22.0	38.0	0.0	33.0	33.0	22.0	22.0	55.0	0.0
Total Split (%)	19.1%	33.0%	0.0%	19.1%	33.0%	0.0%	28.7%	28.7%	19.1%	19.1%	47.8%	0.0%
Maximum Green (s)	18.0	33.0		18.0	33.0		29.0	29.0	18.0	18.0	51.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.27	0.60		2.30	0.97			0.98	0.89	2.20	0.53	
Control Delay	186.0	49.8		624.3	54.8			72.9	44.6	561.0	21.1	
Queue Delay	0.0	0.0		0.0	15.0			7.1	0.0	0.0	1.5	
Total Delay	186.0	49.8		624.3	69.8			80.0	44.6	561.0	22.6	
Queue Length 50th (ft)	~288	204		~649	306			262	353	~754	163	
Queue Length 95th (ft)	#468	265		#862	#452			#387	#585	m#393	m100	
Internal Link Dist (ft)		1178			180			952			341	
Turn Bay Length (ft)				170					130	170		
Base Capacity (vph)	241	910		233	994			688	647	307	1347	
Starvation Cap Reductn	0	0		0	0			0	0	0	419	
Spillback Cap Reductn	0	0		0	57			21	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	1.27	0.60		2.30	1.03			1.01	0.89	2.20	0.77	

Intersection Summary	
Area Type:	CBD
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
~ 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: 11: Dock St & Canal St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	520	0	510	470	450	30	610	550	640	570	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	11	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.93			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1540	3079		1486	2853			3072	1378	1540	3004	
Flt Permitted	0.95	1.00		0.95	1.00			0.89	1.00	0.14	1.00	
Satd. Flow (perm)	1540	3079		1486	2853			2729	1378	231	3004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	547	0	537	495	474	32	642	579	674	600	116
RTOR Reduction (vph)	0	0	0	0	150	0	0	0	38	0	14	0
Lane Group Flow (vph)	305	547	0	537	819	0	0	674	541	674	702	0
Turn Type	Prot			Prot			Perm		pm+ov	pm+pt		
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases		4					2		2	6		
Actuated Green, G (s)	18.0	33.0		18.0	33.0			29.0	47.0	51.0	51.0	
Effective Green, g (s)	18.0	34.0		18.0	34.0			29.0	47.0	51.0	51.0	
Actuated g/C Ratio	0.16	0.30		0.16	0.30			0.25	0.41	0.44	0.44	
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	241	910		233	843			688	611	307	1332	
v/s Ratio Prot	0.20	0.18		c0.36	c0.29				0.14	c0.34	0.23	
v/s Ratio Perm								0.25	0.25	c0.63		
v/c Ratio	1.27	0.60		2.30	0.97			0.98	0.89	2.20	0.53	
Uniform Delay, d1	48.5	34.7		48.5	40.0			42.7	31.5	31.5	23.2	
Progression Factor	0.94	1.34		1.00	1.00			1.00	1.00	1.18	0.93	
Incremental Delay, d2	147.3	1.1		600.5	24.1			29.7	14.4	538.9	0.1	
Delay (s)	193.0	47.5		649.0	64.1			72.4	45.9	576.0	21.7	
Level of Service	F	D		F	E			E	D	F	C	
Approach Delay (s)		99.6			272.6			60.2			290.5	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	194.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	1488	1123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	0.86	0.86	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected			0.950	0.980		
Satd. Flow (prot)	0	0	1370	4239	0	0
Flt Permitted			0.950	0.980		
Satd. Flow (perm)	0	0	1370	4239	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	809			234	248	
Travel Time (s)	18.4			5.3	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	1751	1321	0	0
Shared Lane Traffic (%)			50%			
Lane Group Flow (vph)	0	0	875	2197	0	0
Sign Control	Stop			Free	Stop	

Intersection Summary	
Area Type:	CBD

Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	450	10	0	370	100	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.969	
Flt Protected					0.963	
Satd. Flow (prot)	1863	1583	0	1900	1738	0
Flt Permitted					0.963	
Satd. Flow (perm)	1863	1583	0	1900	1738	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	443			206	152	
Travel Time (s)	10.1			4.7	3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	489	11	0	402	109	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	11	0	402	142	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	450	10	0	370	100	30
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	489	11	0	402	109	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	443			683		
pX, platoon unblocked					0.96	
vC, conflicting volume			500		891	489
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			500		864	489
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		65	94
cM capacity (veh/h)			1064		311	579

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	489	11	402	141
Volume Left	0	0	0	109
Volume Right	0	11	0	33
cSH	1700	1700	1064	348
Volume to Capacity	0.29	0.01	0.00	0.41
Queue Length 95th (ft)	0	0	0	48
Control Delay (s)	0.0	0.0	0.0	22.2
Lane LOS				C
Approach Delay (s)	0.0		0.0	22.2
Approach LOS				C

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	480	0	20	370	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			-4%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected				0.997		
Satd. Flow (prot)	1863	0	0	1894	0	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1894	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	206			192	147	
Travel Time (s)	4.7			4.4	3.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	522	0	22	402	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	522	0	0	424	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	0	20	370	0	0
Sign Control	Free			Free	Stop	
Grade	0%			-4%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	522	0	22	402	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	649			477		
pX, platoon unblocked					0.93	
vC, conflicting volume			522		967	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			522		930	522
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1045		271	555

Direction, Lane #	EB 1	WB 1
Volume Total	522	424
Volume Left	0	22
Volume Right	0	0
cSH	1700	1045
Volume to Capacity	0.31	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.7
Lane LOS		A
Approach Delay (s)	0.0	0.7
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	480	0	0	390	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	192			285	160	
Travel Time (s)	4.4			6.5	3.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	505	0	0	411	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	505	0	0	411	0	74
Sign Control	Free			Free	Stop	

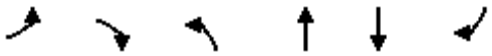
Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

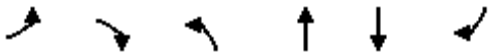
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	0	0	390	0	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	505	0	0	411	0	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	841			285		
pX, platoon unblocked					0.92	
vC, conflicting volume			505		916	505
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			505		867	505
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	87
cM capacity (veh/h)			1059		298	567

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	505	411	74
Volume Left	0	0	0
Volume Right	0	0	74
cSH	1700	1700	567
Volume to Capacity	0.30	0.24	0.13
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.0	0.0	12.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.3
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		



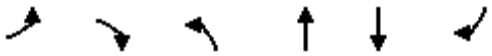
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	30	40	930	750	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.955					0.850
Flt Protected	0.968			0.998		
Satd. Flow (prot)	1722	0	0	1859	1863	1583
Flt Permitted	0.968			0.944		
Satd. Flow (perm)	1722	0	0	1758	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	21					43
Link Speed (mph)	30			30	30	
Link Distance (ft)	264			303	302	
Travel Time (s)	6.0			6.9	6.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	65	33	43	1011	815	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	0	1054	815	43
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		20.0	20.0	20.0	20.0
Minimum Split (s)	12.0		25.0	25.0	25.0	25.0
Total Split (s)	31.0	0.0	84.0	84.0	84.0	84.0
Total Split (%)	27.0%	0.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	26.0		79.0	79.0	79.0	79.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	0.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
v/c Ratio	0.50			0.72	0.53	0.03
Control Delay	46.4			8.5	9.1	1.2
Queue Delay	0.0			8.1	5.1	0.0
Total Delay	46.4			16.5	14.2	1.2
Queue Length 50th (ft)	55			249	293	1
Queue Length 95th (ft)	106			506	m339	m7
Internal Link Dist (ft)	184			223	222	
Turn Bay Length (ft)						
Base Capacity (vph)	420			1455	1542	1304
Starvation Cap Reductn	0			0	649	0
Spillback Cap Reductn	4			365	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.24			0.97	0.91	0.03

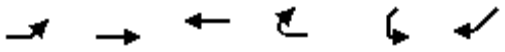
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 104: Driveway #4 & Atlantic St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	30	40	930	750	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	0.97			1.00	1.00	1.00
Satd. Flow (prot)	1721			1859	1863	1583
Flt Permitted	0.97			0.94	1.00	1.00
Satd. Flow (perm)	1721			1759	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	43	1011	815	43
RTOR Reduction (vph)	19	0	0	0	0	8
Lane Group Flow (vph)	79	0	0	1054	815	35
Turn Type			Perm			Perm
Protected Phases	4			2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	10.8			94.2	94.2	94.2
Effective Green, g (s)	11.8			95.2	95.2	94.2
Actuated g/C Ratio	0.10			0.83	0.83	0.82
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	177			1456	1542	1297
v/s Ratio Prot	c0.05				0.44	
v/s Ratio Perm				c0.60		0.02
v/c Ratio	0.45			0.72	0.53	0.03
Uniform Delay, d1	48.5			4.3	3.0	1.9
Progression Factor	1.00			1.00	2.33	1.51
Incremental Delay, d2	1.8			3.2	0.9	0.0
Delay (s)	50.3			7.4	7.9	2.9
Level of Service	D			A	A	A
Approach Delay (s)	50.3			7.4	7.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1052	382	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected		0.965				
Satd. Flow (prot)	0	4417	0	0	0	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	4417	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		208	1182		244	
Travel Time (s)		4.7	26.9		5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	1238	449	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1687	0	0	0	0
Sign Control		Free	Stop		Stop	

Intersection Summary	
Area Type:	CBD

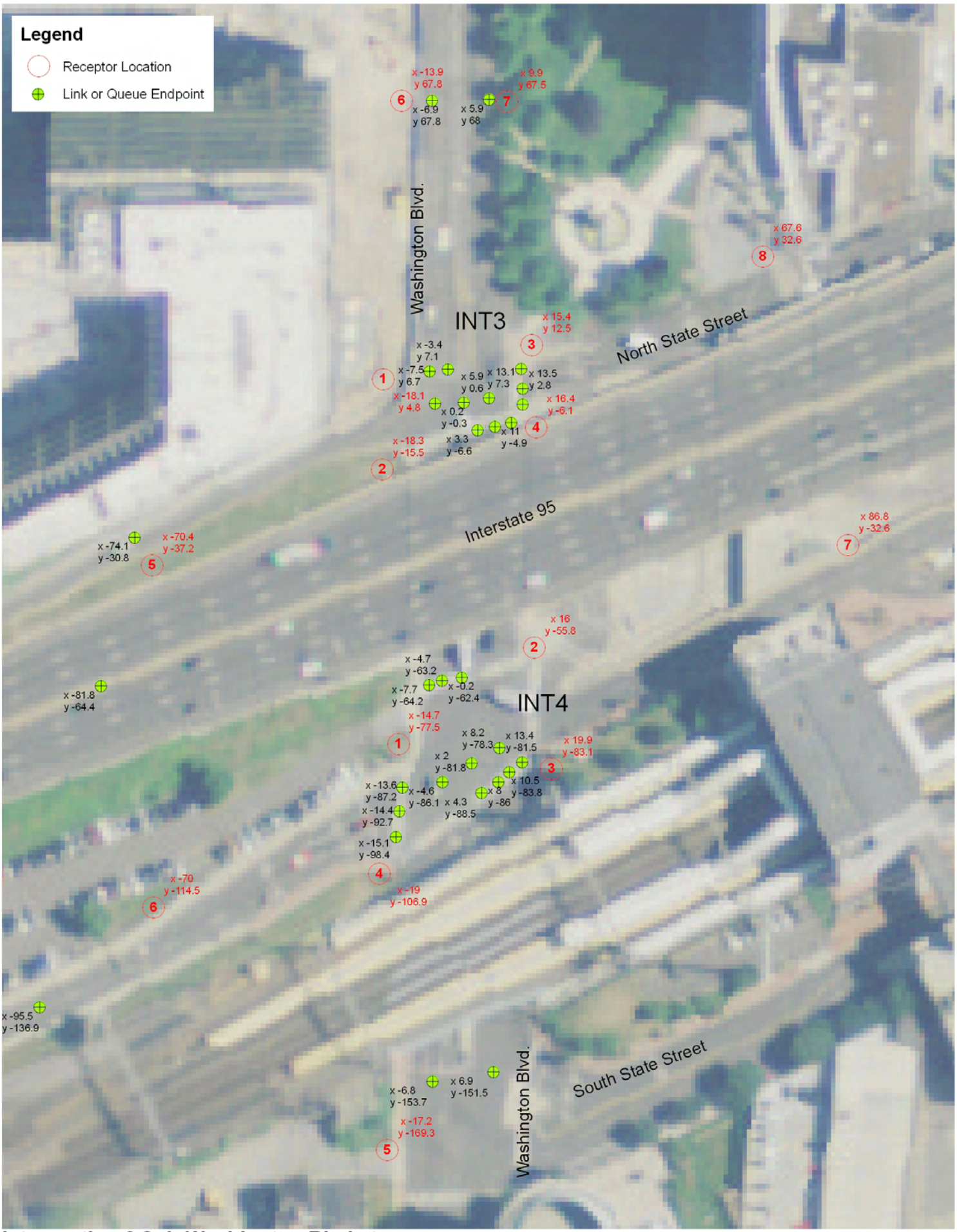
Control Type: Unsignalized

Intersection Sign configuration not allowed in HCM analysis.

This document has not been thoroughly reviewed. It is being provided for convenience, but is not in any way a substitute for each interested Candidate conducting due diligence.

Appendix C

Air Quality Analysis Documentation



Intersection 3 & 4: Washington Blvd at North and South State Streets

MICROSCALE AIR QUALITY MODELING

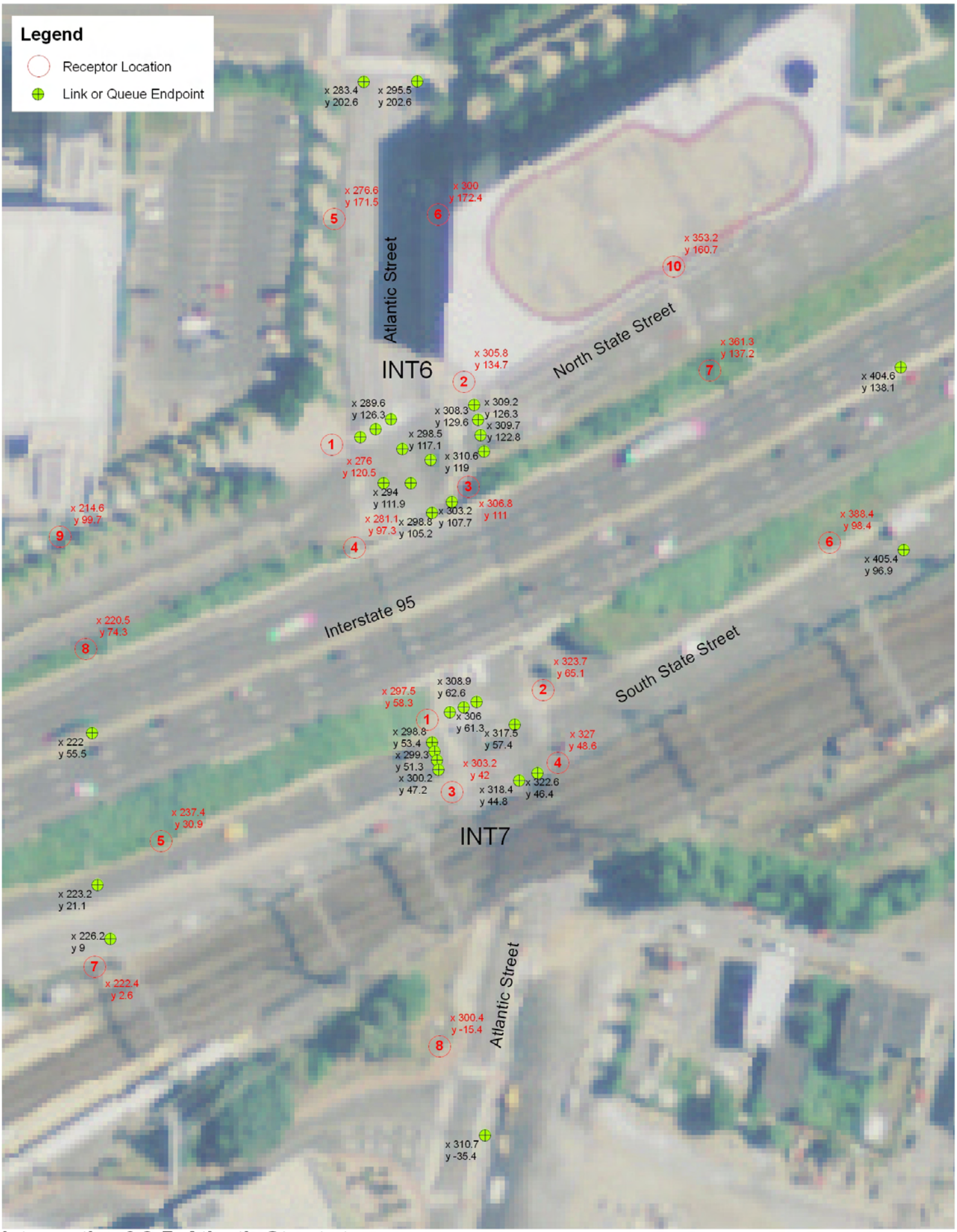
0 50 100

Feet

STAMFORD PARKING GARAGE EIE
State Project No. 301-047

Source: CTDEP GIS Data

N



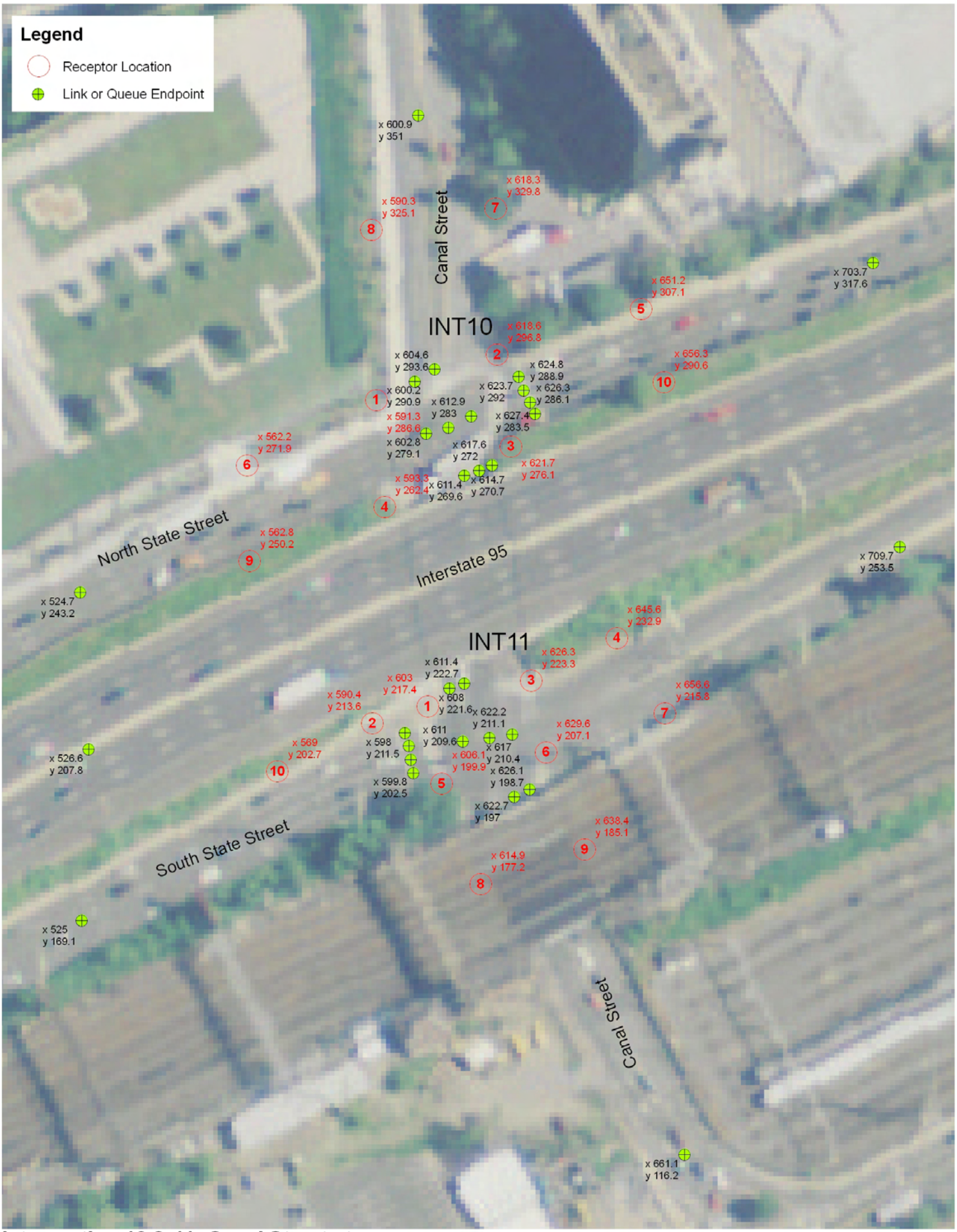
Intersection 6 & 7: Atlantic Street at North and South State Streets
MICROSCALE AIR QUALITY MODELING

0 50 100
Feet

STAMFORD PARKING GARAGE EIE
State Project No. 301-047

Source: CTDEP GIS Data

N



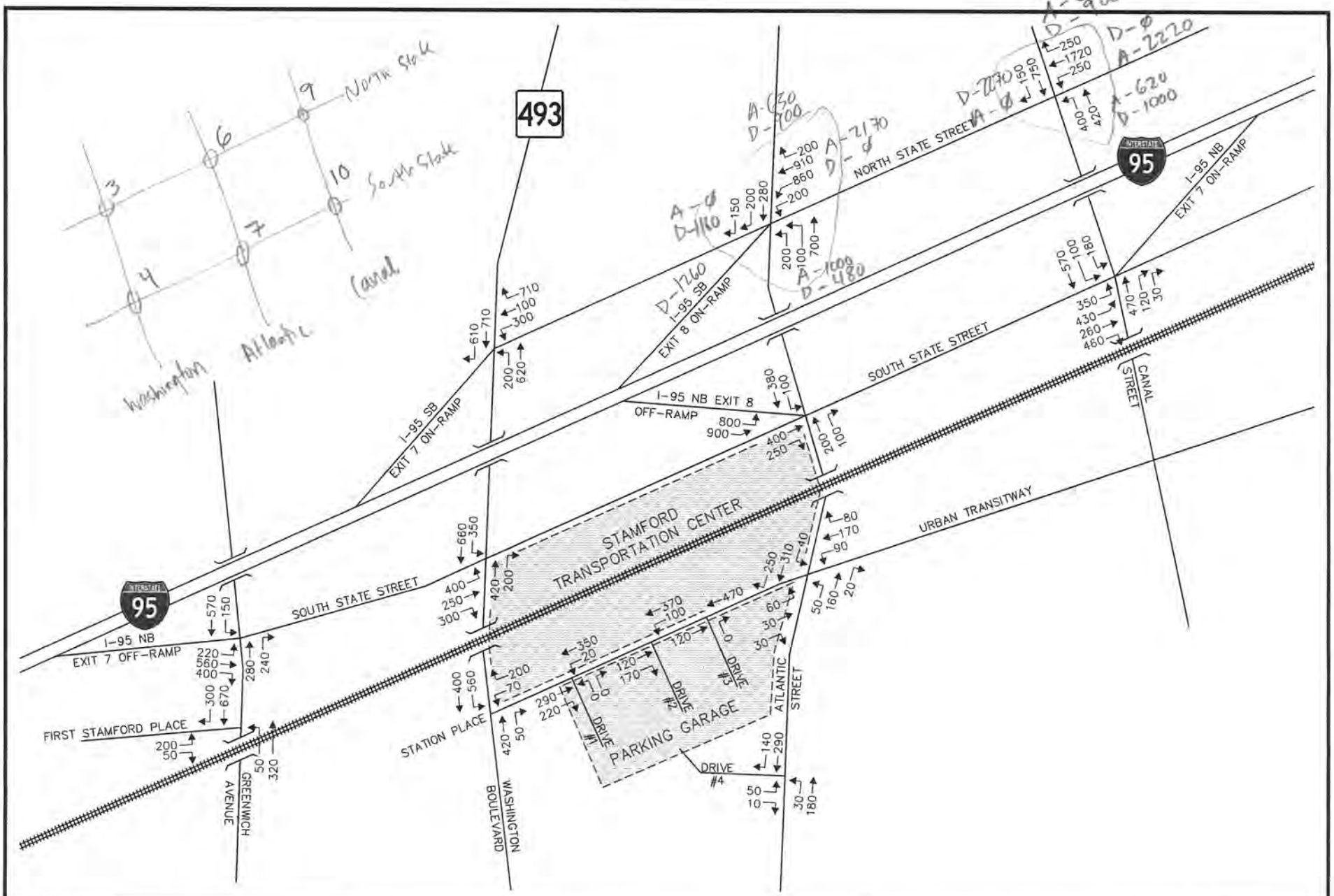
Intersection 10 & 11: Canal Street at North and South State Streets
MICROSCALE AIR QUALITY MODELING

0 50 100
Feet

STAMFORD PARKING GARAGE EIE
State Project No. 301-047

Source: CTDEP GIS Data

N



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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\2007\2097B20_TVF02.dwg, Layout: 2009 EX AM
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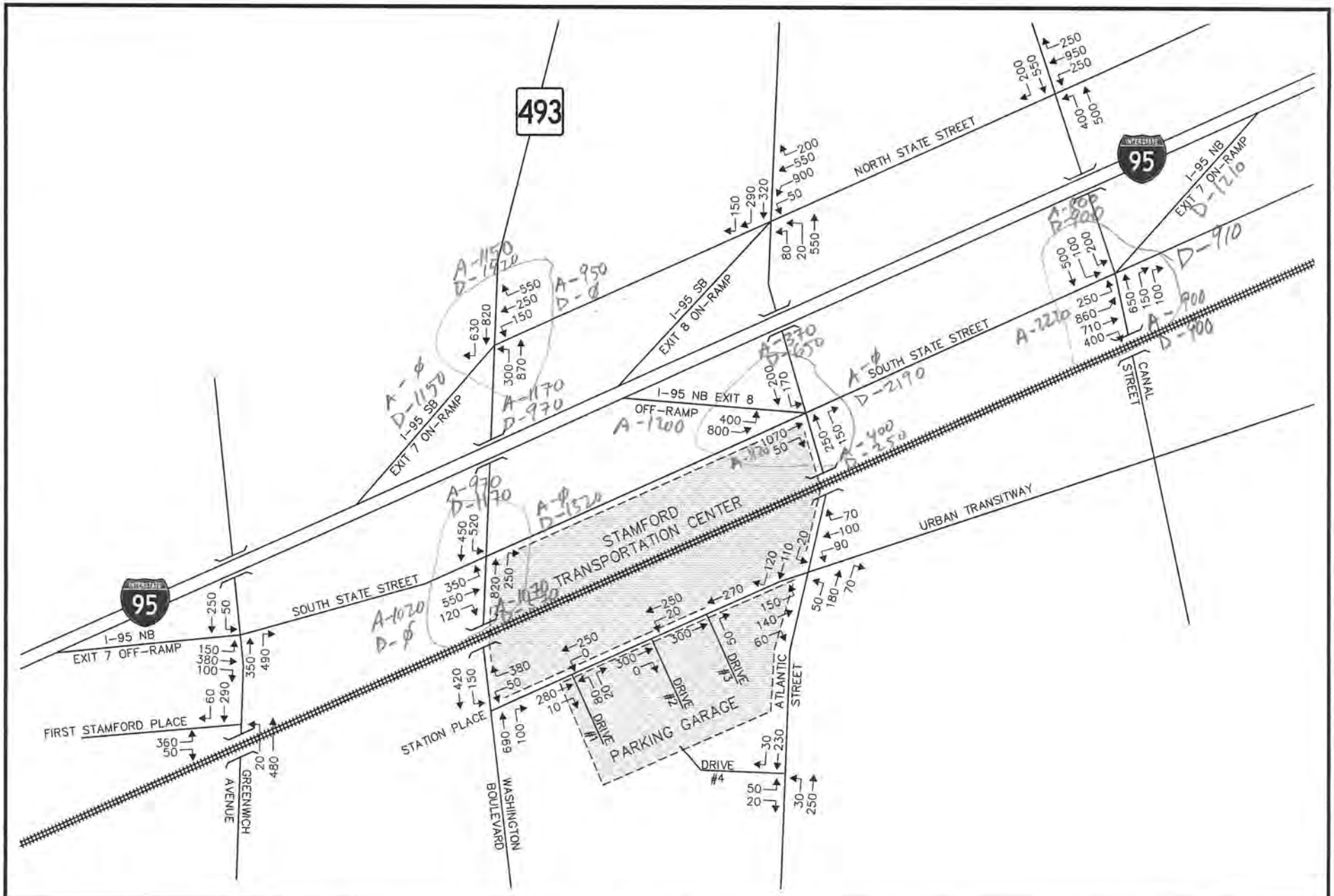

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UCS: | MS VIEW: | LMAN: | CTB:

SCALE:	
HORZ.:	NTS
VERT.:	
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VERT.:	

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GRAPHIC SCALE

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FUSS & O'NEILL
Disciplines to Deliver

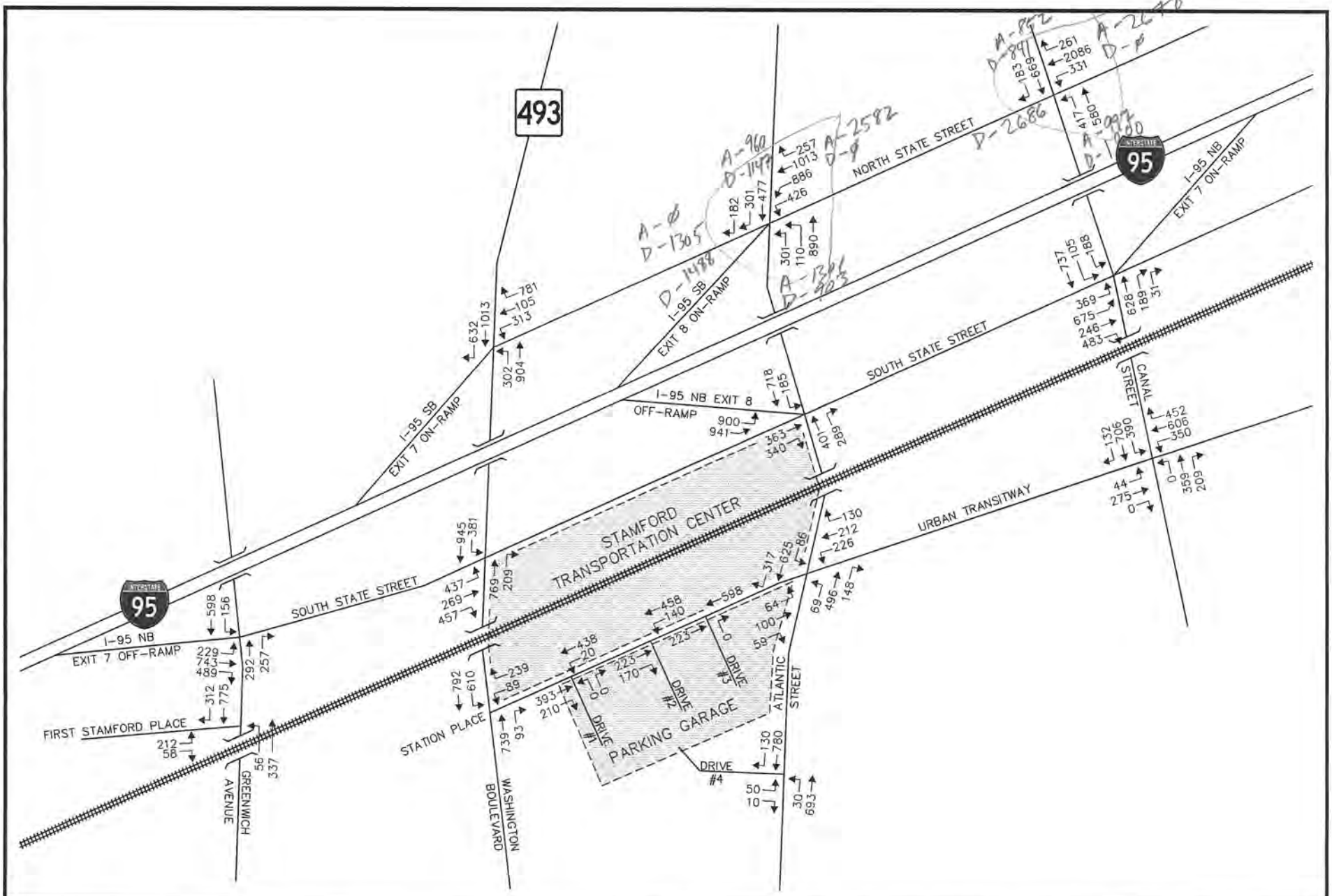
146 HARTFORD RD MANCHESTER, CT 06040 860.646.2469

CONNECTICUT DEPARTMENT OF TRANSPORTATION
2009 EXISTING CONDITIONS
PM PEAK HOUR TRAFFIC VOLUMES
STAMFORD TRANSPORTATION CENTER PARKING GARAGE EIE

STAMFORD CONNECTICUT

PROJ. No.: 2007.2097.B20
DATE: JANUARY 2010

FIG 2



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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\2007209TB20_TVF02.dwg, Layout: 2012 BGR AM
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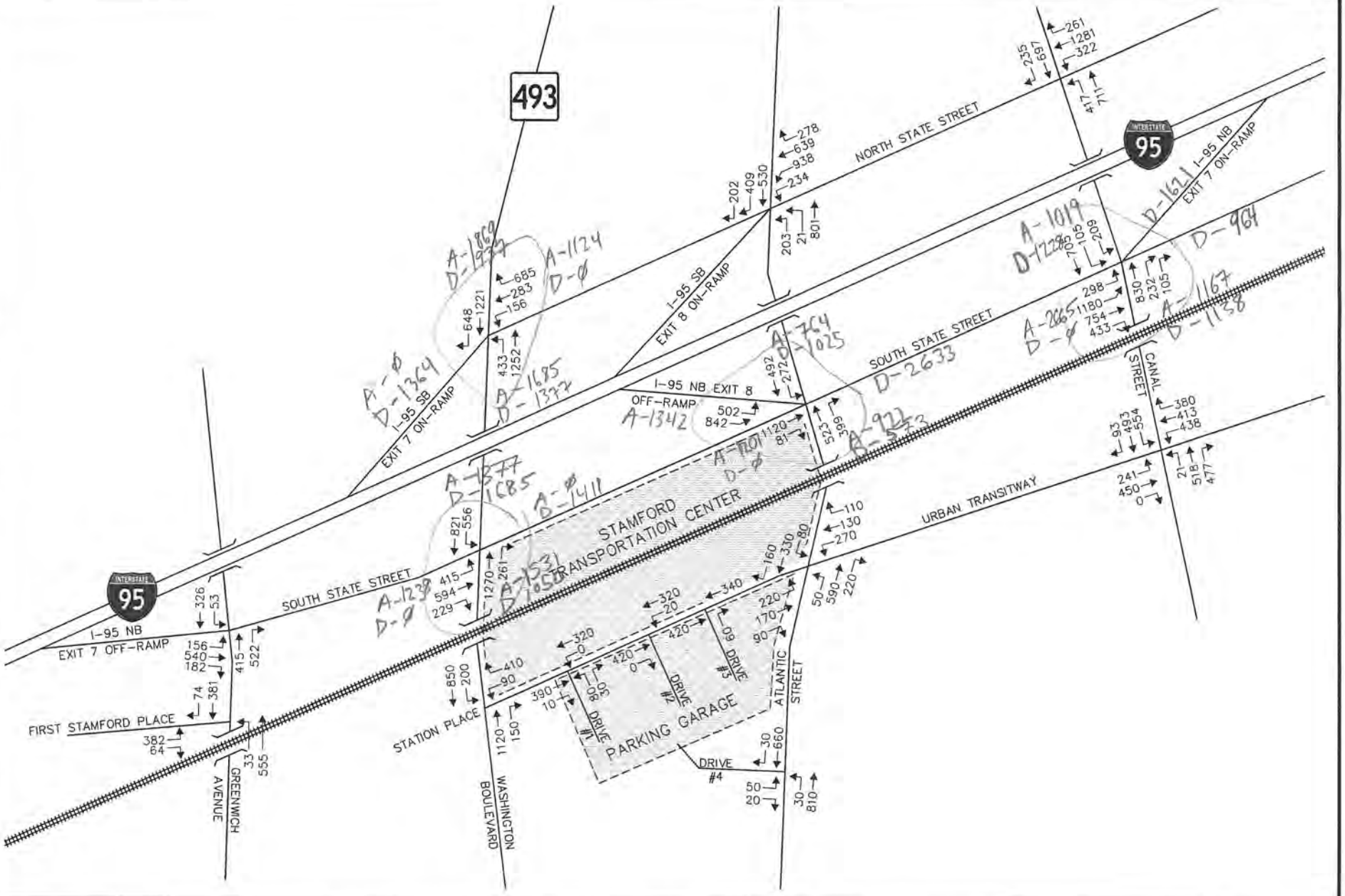

SCALE: HORZ.: NTS VERT.: DATUM: HORZ.: VERT.: 0 GRAPHIC SCALE	WWW.FandO.COM FUSS & O'NEILL *Disciplines to Deliver* 146 HARTFORD RD MANCHESTER, CT 06040 860.646.2469	CONNECTICUT DEPARTMENT OF TRANSPORTATION 2012 NO BUILD CONDITIONS PM PEAK HOUR TRAFFIC VOLUMES STAMFORD TRANSPORTATION CENTER PARKING GARAGE EIE STAMFORD CONNECTICUT	PROJ. No.: 2007.2097.B20 DATE: JANUARY 2010 FIG 4

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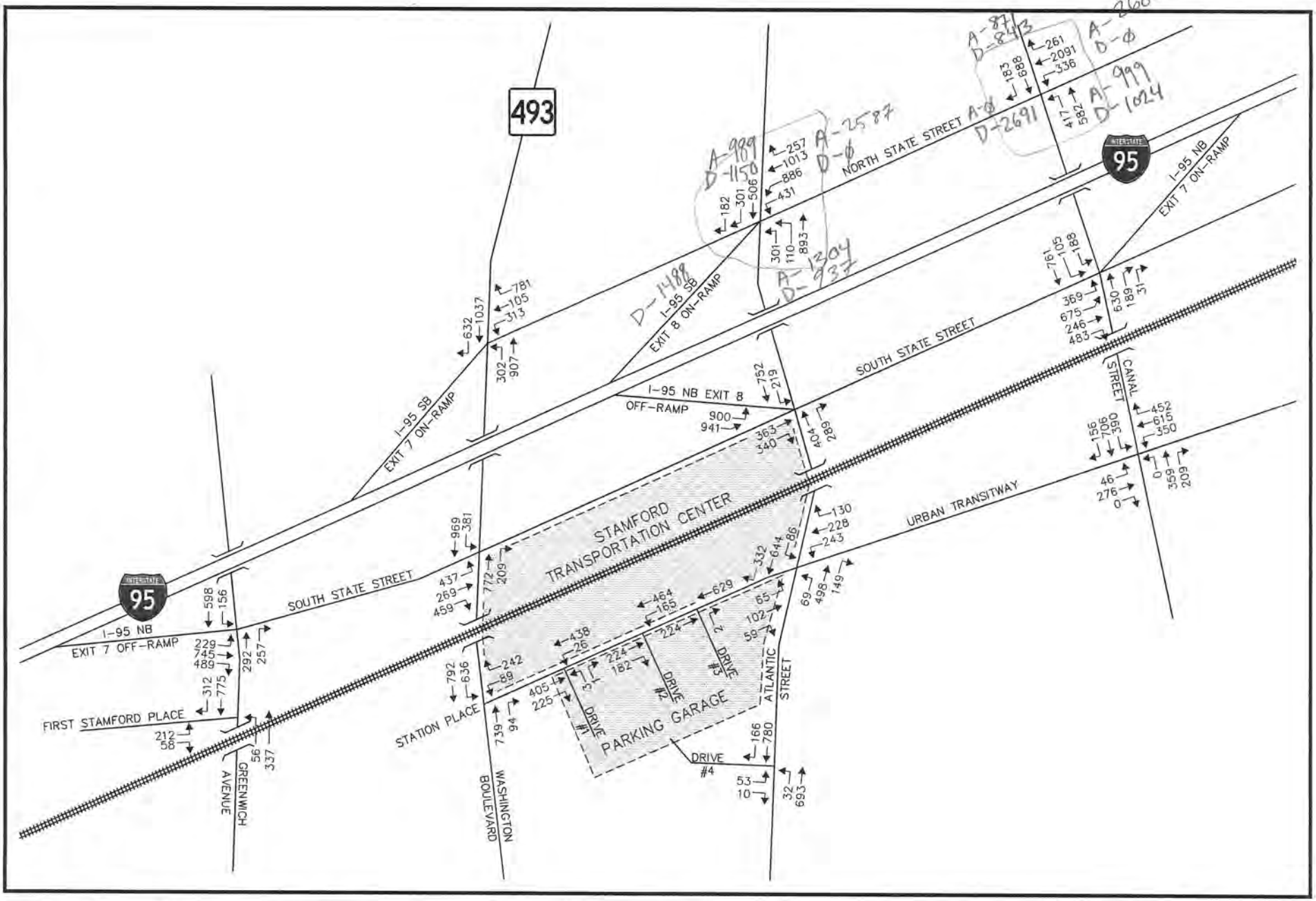

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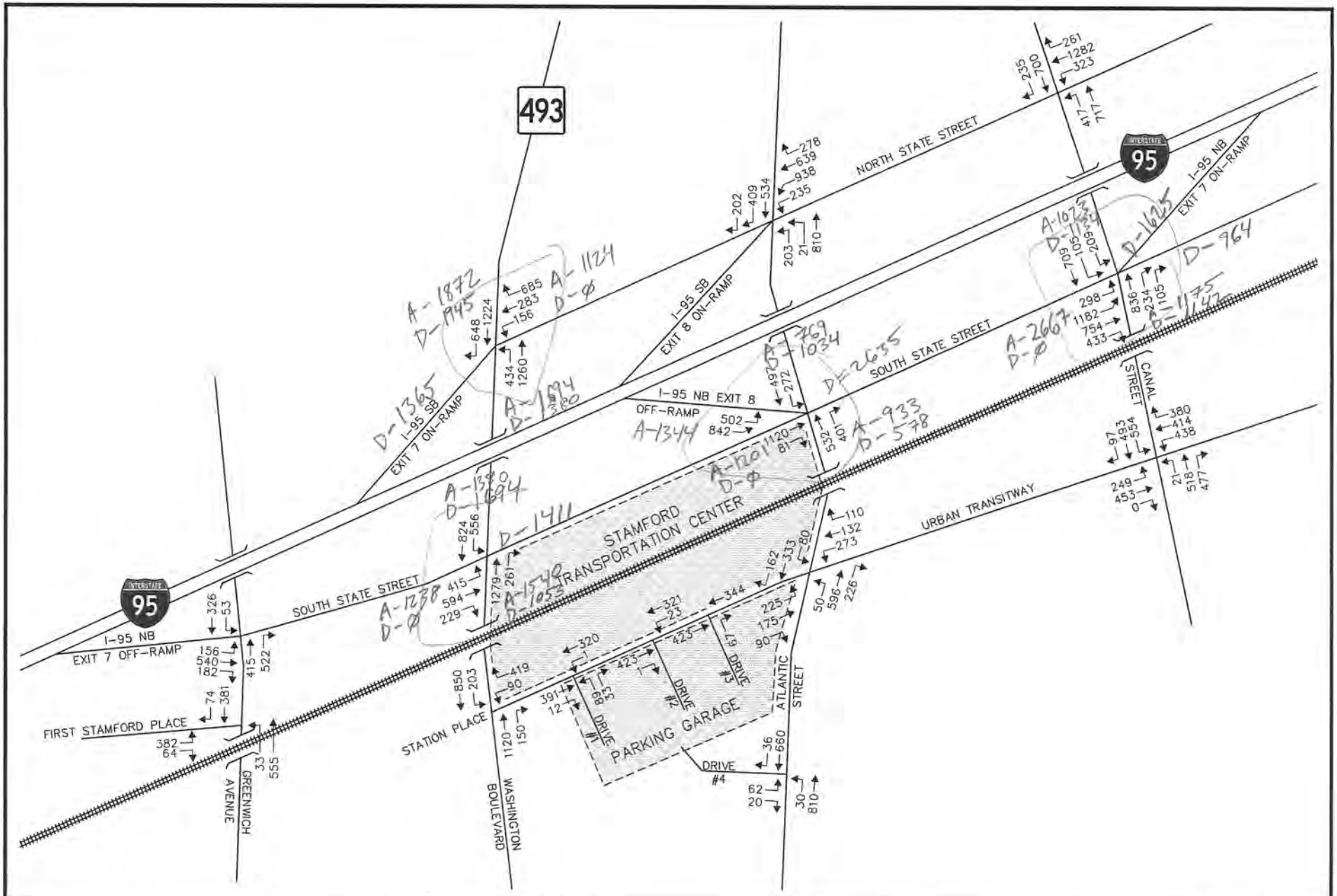

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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\20072097B20_TVF02.dwg Layout: 2012 BLD PM
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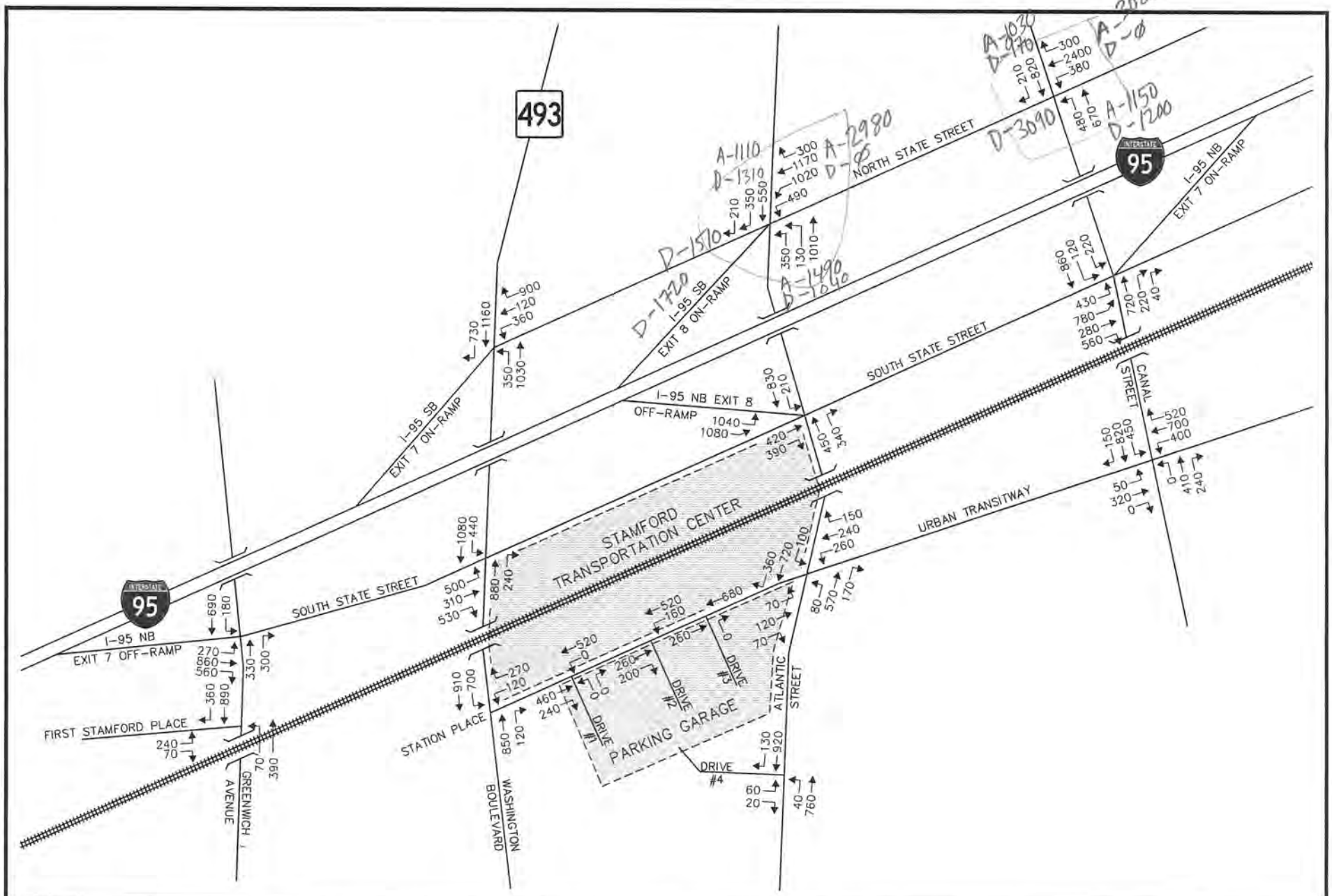

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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\20072097B20_TVF02.dwg Layout: 2029 BGR AM
Date: Fri, Dec 18, 2009 - 2:56 PM User: PBaxter
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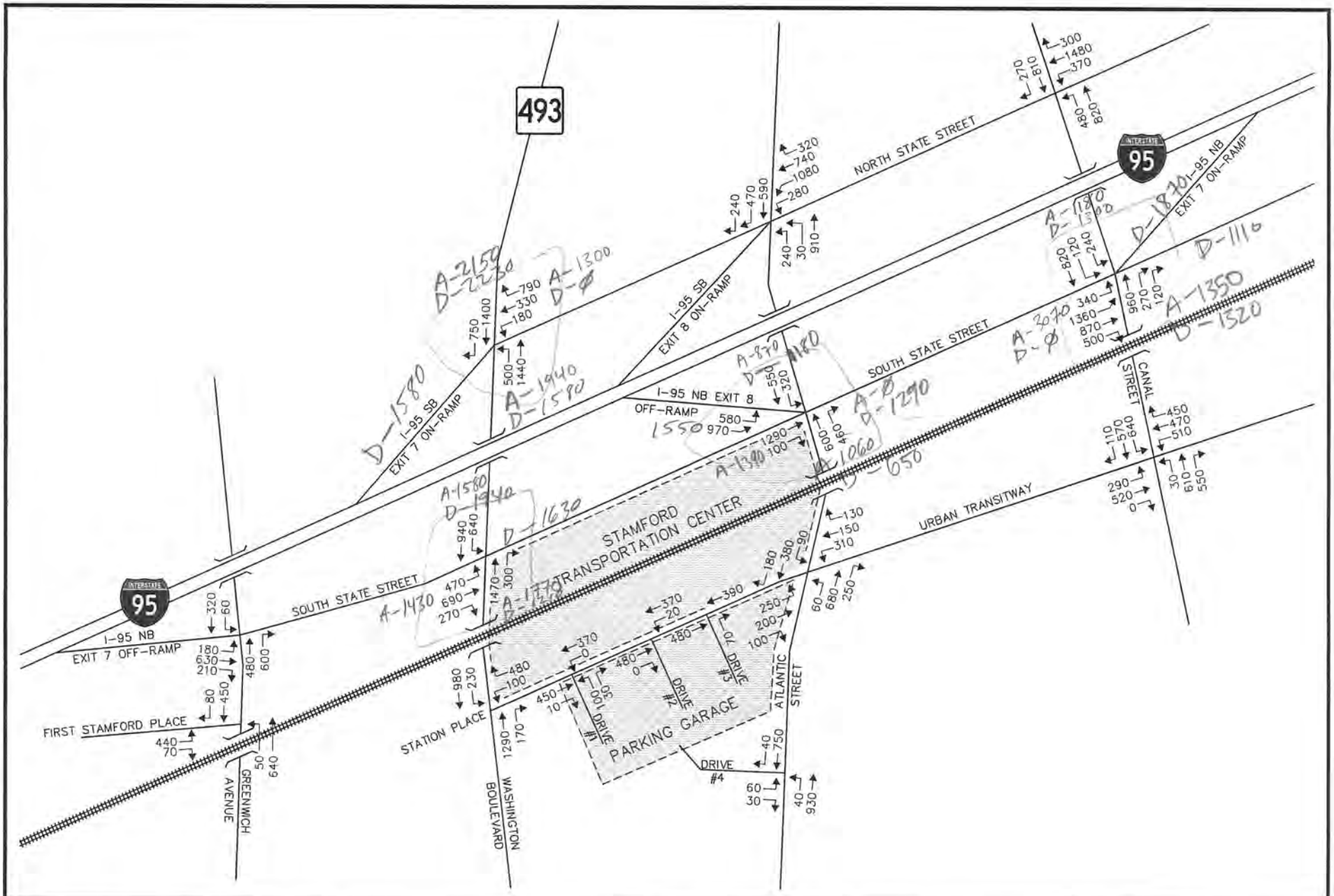

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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\20072097B20_TVF02.dwg, Layout: 2029 BGR PM
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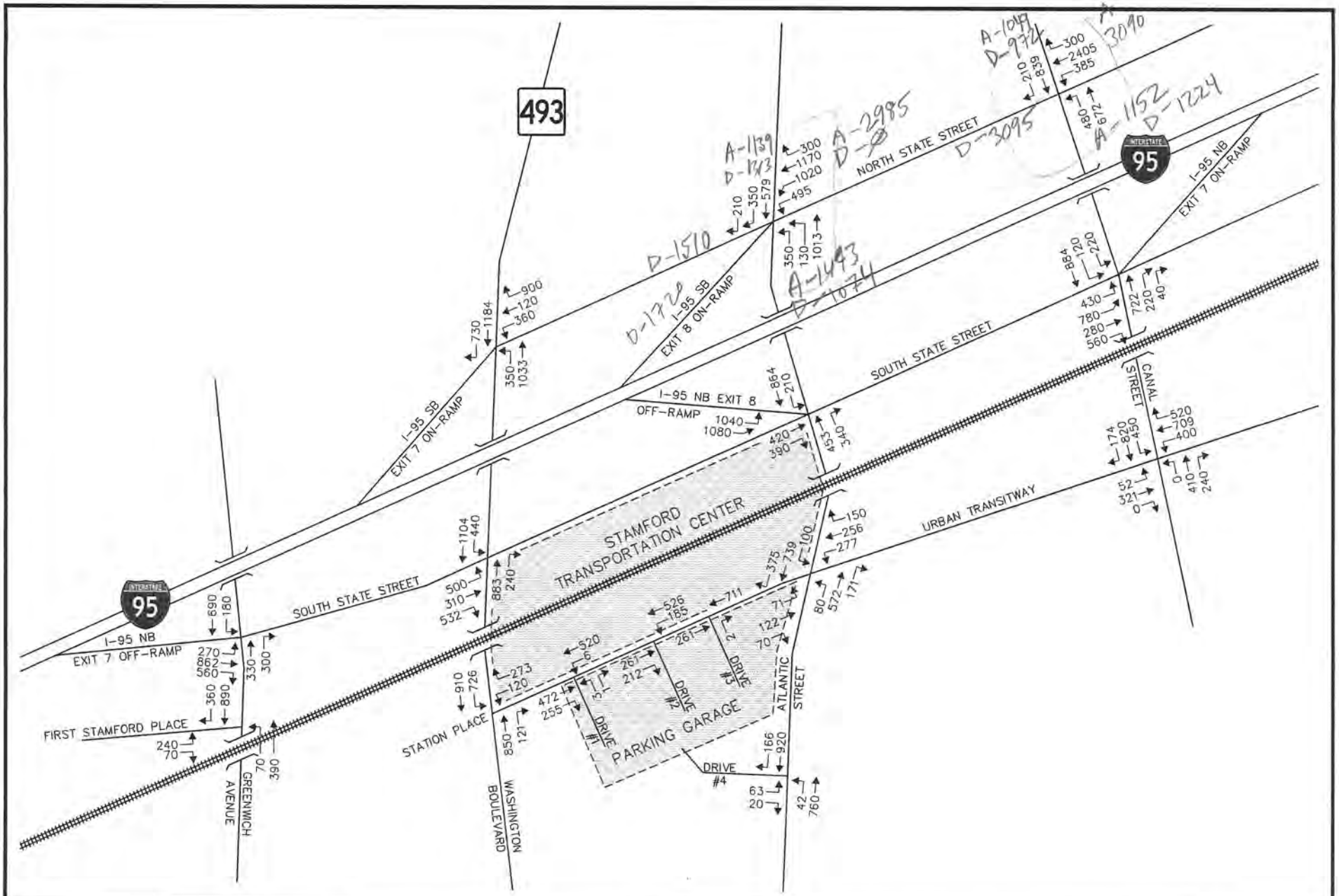

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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\2007\2097B20_TVF02.dwg Layout: 2029 BLD AM
Date: Fri, Dec 18, 2009 - 2:56 PM User: PBaxter

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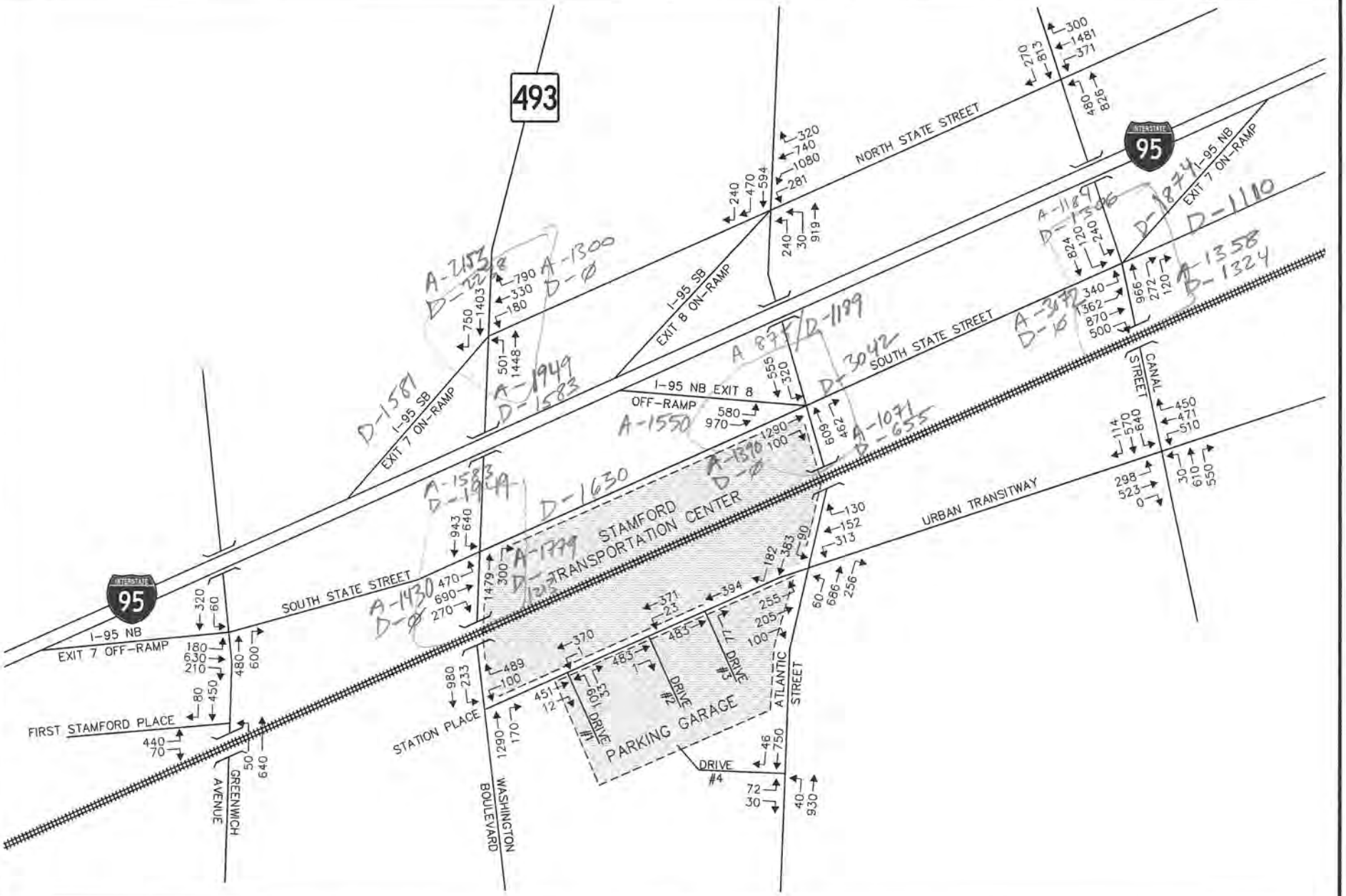

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File Path: J:\DWG\P2007\2097\B20\Civil\Traffic Figures\2007\2097B20_TVF02.dwg, Layout: 2029 BLD PM
Date: Fri, Dec 18, 2009 - 2:57 PM User: PBaxter
UCS: MS VIEW: LMAN: CTB:

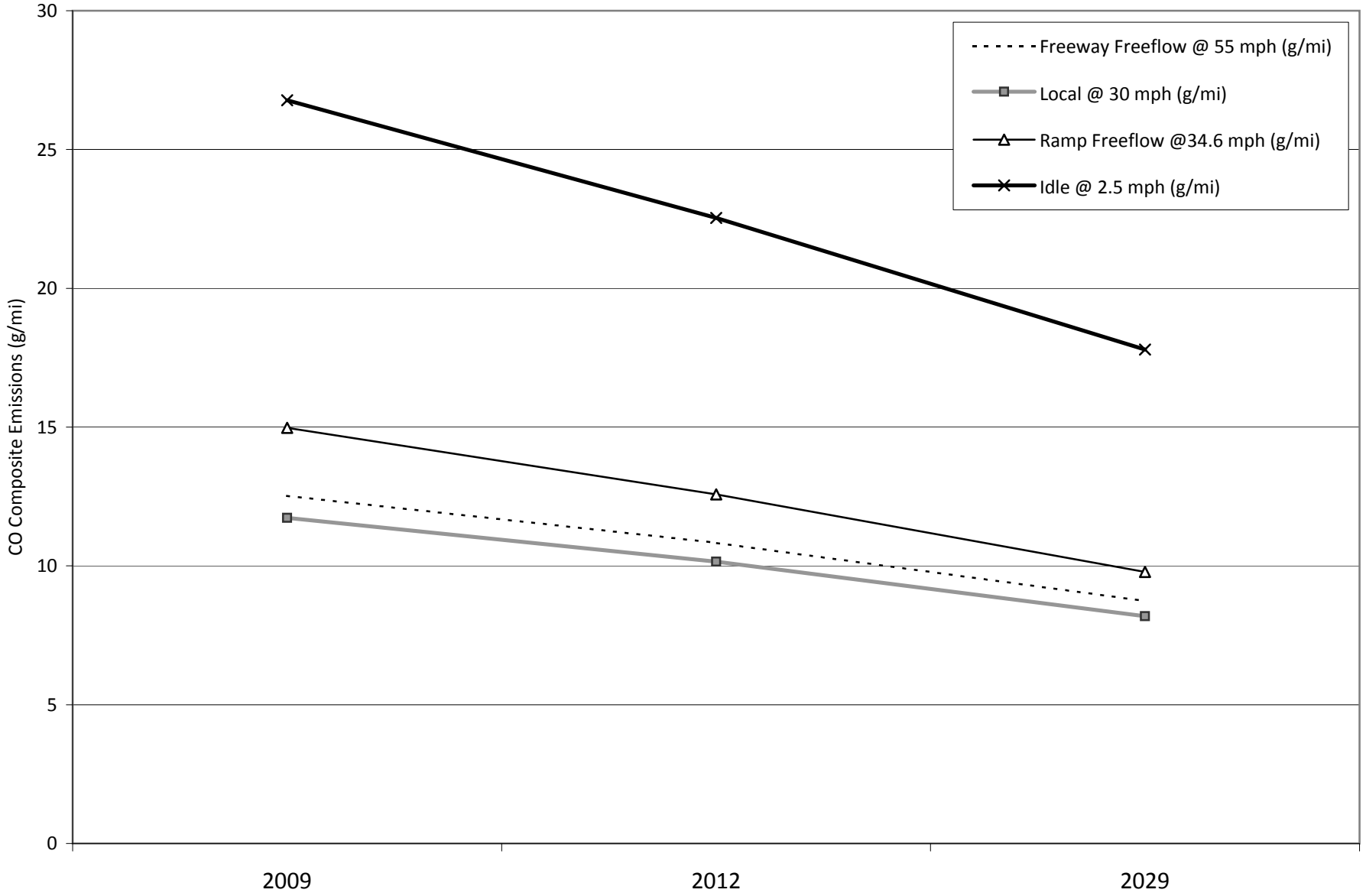
Composite Emission Factors - All Vehicles

	Freeway Freeflow @ 55 mph (g/mi)	Local @ 30 mph (g/mi)	Ramp Freeflow @34.6 mph (g/mi)	Idle @ 2.5 mph (g/mi)	Idle rate (g/hr)
2009	12.524	11.730	14.972	26.778	66.945
2012	10.832	10.150	12.574	22.538	56.345
2029	8.738	8.189	9.784	17.797	44.493

Composite Emission Factors - MOBILE 6.2

2009 winter intersection: Freeway Freeflow @ 55 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3817	0.3918	0.1336		0.0264	0.0004	0.002	0.0634	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	13.11	13.5	14.54	13.77	7.07	0.907	0.473	1.456	10.45	12.524
2009 winter intersection: Local @ 30 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4084	0.4193	0.143		0.0064	0.0004	0.0021	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	11.65	11.93	12.77	12.14	7.92	1.037	0.555	1.898	13.7	11.73
2009 winter intersection: M6 assumes Ramp @ 34.6mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3817	0.3918	0.1336		0.0264	0.0004	0.002	0.0634	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	16.21	15.99	16.63	16.15	6.99	0.967	0.511	1.661	12.32	14.972
2009 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4084	0.4193	0.143		0.0064	0.0004	0.0021	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	26.4	25.83	29.7	26.82	43.87	3.252	1.951	9.464	100.87	26.778
2012 winter intersection: Freeway Freeflow @ 55 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3492	0.4163	0.1418		0.0263	0.0003	0.0021	0.0633	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	11.81	11.44	12.1	11.61	6.17	0.631	0.368	0.956	10.45	10.832
2012 winter intersection: Local @ 30 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3735	0.4453	0.1517		0.0065	0.0003	0.0023	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	10.51	10.07	10.6	10.21	6.9	0.732	0.432	1.246	13.7	10.15

2012 winter intersection: M6 assumes Ramp @ 34.6mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3492	0.4163	0.1418		0.0263	0.0003	0.0021	0.0633	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	14.08	13.16	13.67	13.29	6.1	0.678	0.398	1.091	12.32	12.574
2012 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3735	0.4453	0.1517		0.0065	0.0003	0.0023	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	22.67	21.56	23.98	22.17	38.2	2.458	1.523	6.212	100.87	22.538
2029 winter intersection: Freeway Freeflow @ 55 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2914	0.4596	0.1567		0.0261	0.0003	0.0024	0.0629	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	10.1	9.14	9.1	9.13	5.69	0.475	0.238	0.18	10.45	8.738
2029 winter intersection: Local @ 30 mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3115	0.4913	0.1675		0.0065	0.0003	0.0025	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	9.06	8	7.92	7.98	6.36	0.552	0.283	0.234	13.7	8.189
2029 winter intersection: M6 assumes Ramp @ 34.6mph										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2914	0.4596	0.1567		0.0261	0.0003	0.0024	0.0629	0.0007	1
Composite Emission Factors (g/mi):										
Composite CO:	11.38	10.23	10.18	10.22	5.63	0.511	0.259	0.205	12.32	9.784
2029 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)										
Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3115	0.4913	0.1675		0.0065	0.0003	0.0025	0.0156	0.0048	1
Composite Emission Factors (g/mi):										
Composite CO:	18.3	17.13	17.59	17.25	35.24	1.87	1.054	1.168	100.87	17.797


30
25
20
15
10
5
0
CO Composite Emissions (g/mi)
2009
2012
2029
Freeway Freeflow @ 55 mph (g/mi)
Local @ 30 mph (g/mi)
Ramp Freeflow @34.6 mph (g/mi)
Idle @ 2.5 mph (g/mi)

MOBILE6.2 "VMT Fractions" Inputs for Connecticut

(Descriptive format. Must be reformatted for input to model. See User's Guide section 2.8.8.1)

Year	Facility	MOBILE6.2 Vehicle Class (see User's Guide Appendix B Table 1 for more details)															
		LDV	LDT1	LDT2	LDT3	LDT4	HDV2B	HDV3	HDV4	HDV5	HDV6	HDV7	HDV8A	HDV8B	HDBS	HDBT	MC
2009	Exp/Ramp	**0.3821**	**0.0905**	**0.3013**	**0.0929**	**0.0427**	**0.0288**	**0.0028**	**0.0024**	**0.0018**	**0.0064**	**0.0076**	**0.0083**	**0.0295**	**0.0015**	**0.0007**	**0.0007**
	Art/Coll	0.4050	0.0959	0.3195	0.0985	0.0453	0.0107	0.0010	0.0009	0.0007	0.0024	0.0028	0.0031	0.0109	0.0005	0.0003	0.0025
	Local	**0.4088**	**0.0968**	**0.3225**	**0.0994**	**0.0457**	**0.0070**	**0.0007**	**0.0006**	**0.0004**	**0.0016**	**0.0019**	**0.0020**	**0.0072**	**0.0004**	**0.0002**	**0.0048**
2012*	Exp/Ramp	**0.3495**	**0.0962**	**0.3201**	**0.0986**	**0.0453**	**0.0287**	**0.0028**	**0.0024**	**0.0018**	**0.0064**	**0.0076**	**0.0083**	**0.0294**	**0.0015**	**0.0007**	**0.0007**
	Art/Coll	0.3704	0.1020	0.3392	0.1045	0.0481	0.0107	0.0010	0.0009	0.0007	0.0024	0.0028	0.0031	0.0109	0.0005	0.0003	0.0025
	Local	**0.3738**	**0.1029**	**0.3424**	**0.1055**	**0.0485**	**0.0071**	**0.0007**	**0.0006**	**0.0004**	**0.0016**	**0.0019**	**0.0020**	**0.0072**	**0.0004**	**0.0002**	**0.0048**
2029*	Exp/Ramp	**0.2917**	**0.1062**	**0.3534**	**0.1089**	**0.0501**	**0.0285**	**0.0028**	**0.0024**	**0.0018**	**0.0064**	**0.0076**	**0.0082**	**0.0292**	**0.0014**	**0.0007**	**0.0007**
	Art/Coll	0.3090	0.1125	0.3743	0.1154	0.0531	0.0106	0.0010	0.0009	0.0007	0.0024	0.0028	0.0031	0.0109	0.0005	0.0003	0.0025
	Local	0.3118	0.1135	0.3778	0.1164	0.0536	0.0071	0.0007	0.0006	0.0004	0.0016	0.0019	0.0020	0.0072	0.0004	0.0002	0.0048

*** Note: VMT Fractions for years annotated with asterisk have been interpolated from years with full data available.**
Also, since MOBILE6.2 requires each Facility VMT mix to sum to 1, any necessary rounding adjustments were made manually to LDV's.

* 1 LDV Light-Duty Vehicles (Passenger Cars)
* 2 LDT1 Light-Duty Trucks 1 (0-6,000 lbs. GVWR, 0-3,750 lbs. LVW)
* 3 LDT2 Light Duty Trucks 2 (0-6,000 lbs. GVWR, 3,751-5,750 lbs. LVW)
* 4 LDT3 Light Duty Trucks 3 (6,001-8,500 lbs. GVWR, 0-3,750 lbs. LVW)
* 5 LDT4 Light Duty Trucks 4 (6,001-8,500 lbs. GVWR, 3,751-5,750 lbs. LVW)
* 6 HDV2B Class 2b Heavy Duty Vehicles (8,501-10,000 lbs. GVWR)
* 7 HDV3 Class 3 Heavy Duty Vehicles (10,001-14,000 lbs. GVWR)
* 8 HDV4 Class 4 Heavy Duty Vehicles (14,001-16,000 lbs. GVWR)
* 9 HDV5 Class 5 Heavy Duty Vehicles (16,001-19,500 lbs. GVWR)
* 10 HDV6 Class 6 Heavy Duty Vehicles (19,501-26,000 lbs. GVWR)
* 11 HDV7 Class 7 Heavy Duty Vehicles (26,001-33,000 lbs. GVWR)
* 12 HDV8A Class 8a Heavy Duty Vehicles (33,001-60,000 lbs. GVWR)
* 13 HDV8B Class 8b Heavy Duty Vehicles (>60,000 lbs. GVWR)
* 14 HDBS School Busses
* 15 HDBT Transit and Urban Busses
* 16 MC Motorcycles (All)

```
MOBILE6 INPUT FILE :  stam2009.in
> Generic 2009 Winter CO Intersection Inputs for Hartford & Southwest CT Maintenance
Areas, as
> well as all other areas of Connecticut, EXCEPT the New Haven Maintenance Area.
SPREADSHEET        :
POLLUTANTS         : CO

RUN DATA
> 2009 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven
Maintenance Area
> May, 2007 (Last DEP input revisions)
> Edited by KMB of Fuss & O'Neill for 2009 conditions
>
*********************************************************************************
************
> Note that the composite emission factors produced with this input file include
both start
> and running emissions.  EPA Guidance indicates that start emissions are typically
negligible
> at intersections; therefore, use of composite emission factors will produce CO
impacts that
> are conservatively high.  If modeled impacts (including background CO) approach or
exceed the
> CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes
start emissions.
>
*********************************************************************************
************
>

>******************** Expressway Freeflow

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2005 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2009 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS      :
0.3821 0.0905 0.3013 0.0929 0.0427 0.0288 0.0028 0.0024
0.0018 0.0064 0.0076 0.0083 0.0295 0.0015 0.0007 0.0007

SCENARIO RECORD    : 2009 winter intersection: Freeway Freeflow @ 55 mph
AVERAGE SPEED      : 55. Non-Ramp 100.0 0.0 0.0 0.0
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
>****************** Local Freeflow

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2005 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* 2009 local VMT fractions (KMB changed using M62 VMT Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.4088 0.0968 0.3225 0.0994 0.0457 0.0070 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD     : 2009 winter intersection: Local @ 30 mph
AVERAGE SPEED       : 30. Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR       : 2009
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP        : 41. 41.

END OF RUN

>****************** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg
freeflow ramp speed=34.6mph)

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2002 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data (File FCVMTR.CTY assigns all VMT for this portion of the M6 run to RAMPS)
VMT BY FACILITY     : FCVMTR.CTY

* 2009 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.3821 0.0905 0.3013 0.0929 0.0427 0.0288 0.0028 0.0024
0.0018 0.0064 0.0076 0.0083 0.0295 0.0015 0.0007 0.0007

SCENARIO RECORD     : 2009 winter intersection: M6 assumes Ramp @ 34.6mph
CALENDAR YEAR       : 2009
```

```
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN


>****************** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2002 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2009 arterial/collector VMT fractions
VMT FRACTIONS      :
0.4088 0.0968 0.3225 0.0994 0.0457 0.0070 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD    : 2009 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle
rate for CAL3QHC)
AVERAGE SPEED      : 2.5 Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STAM2009.IN (file 1, run 1).                               *
**************************************************************************
* 2009 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven Maintenance Area
* May, 2007 (Last DEP input revisions)
* Edited by KMB of Fuss & O'Neill for 2009 conditions
* ************************************************************************************************
* Note that the composite emission factors produced with this input file include both start
* and running emissions.  EPA Guidance indicates that start emissions are typically negligible
* at intersections; therefore, use of composite emission factors will produce CO impacts that
* are conservatively high.  If modeled impacts (including background CO) approach or exceed the
* CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes start emissions.
* ************************************************************************************************
*
********************* Expressway Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
          User has supplied post-1999 sulfur levels.
  M603 Comment:
          User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2009 winter intersection: Freeway Freeflow @ 55 mph
* File 1, Run 1, Scenario 1.
* #
M581 Warning:
The user supplied freeway average speed of 55.0
will be used for all hours of the day. 100% of VMT
has been assigned to the freeway roadway type for
all hours of the day and all vehicle types.
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

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3817	0.3918	0.1336		0.0264	0.0004	0.0020	0.0634	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	13.11	13.50	14.54	13.77	7.07	0.907	0.473	1.456	10.45	12.524

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2009.IN (file 1, run 2). *
****
********** Local Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:

1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2009 winter intersection: Local @ 30 mph
* File 1, Run 2, Scenario 1.
* #
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
*** 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

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2009

Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4084	0.4193	0.1430		0.0064	0.0004	0.0021	0.0156	0.0048	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	11.65	11.93	12.77	12.14	7.92	1.037	0.555	1.898	13.70	11.730

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2009.IN (file 1, run 3). *
****
********** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg freeflow ramp speed=34.6mph)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:

```
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading Hourly Roadway VMT distribution from the following external
 * data file: FCVMTR.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
          User supplied VMT mix.

 * ##########################
 * 2009 winter intersection: M6 assumes Ramp @ 34.6mph
 * File 1, Run 3, Scenario 1.
 * ##########################
  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

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3817	0.3918	0.1336		0.0264	0.0004	0.0020	0.0634	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	16.21	15.99	16.63	16.15	6.99	0.967	0.511	1.661	12.32	14.972

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2009.IN (file 1, run 4). *
****
********** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external

```
 * data file: CTREG05.D
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
  M615 Comment:
          User supplied VMT mix.

 * # # # # # # # # # # # # # # # # # # # # # # # #
 * 2009 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)
 * File 1, Run 4, Scenario 1.
 * # # # # # # # # # # # # # # # # # # # # # # # #
  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
*** 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

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2009
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4084	0.4193	0.1430		0.0064	0.0004	0.0021	0.0156	0.0048	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	26.40	25.83	29.70	26.82	43.87	3.252	1.951	9.464	100.87	26.778

```
MOBILE6 INPUT FILE :  stam2012.in
> Generic 2012 Winter CO Intersection Inputs for Hartford & Southwest CT Maintenance
Areas, as
> well as all other areas of Connecticut, EXCEPT the New Haven Maintenance Area.
SPREADSHEET        :
POLLUTANTS         : CO

RUN DATA
> 2012 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven
Maintenance Area
> May, 2007 (Last DEP input revisions)
> Edited by KMB of Fuss & O'Neill for 2012 conditions
>
*********************************************************************************
************
> Note that the composite emission factors produced with this input file include
both start
> and running emissions.  EPA Guidance indicates that start emissions are typically
negligible
> at intersections; therefore, use of composite emission factors will produce CO
impacts that
> are conservatively high.  If modeled impacts (including background CO) approach or
exceed the
> CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes
start emissions.
>
*********************************************************************************
************
>

>******************** Expressway Freeflow

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2005 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2012 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS      :
0.3495 0.0962 0.3201 0.0986 0.0453 0.0287 0.0028 0.0024
0.0018 0.0064 0.0076 0.0083 0.0294 0.0015 0.0007 0.0007

SCENARIO RECORD    : 2012 winter intersection: Freeway Freeflow @ 55 mph
AVERAGE SPEED      : 55. Non-Ramp 100.0 0.0 0.0 0.0
CALENDAR YEAR      : 2012
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
>****************** Local Freeflow

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2005 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* 2012 local VMT fractions (KMB changed using M62 VMT Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.3738 0.1029 0.3424 0.1055 0.0485 0.0071 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD     : 2012 winter intersection: Local @ 30 mph
AVERAGE SPEED       : 30. Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR       : 2012
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP        : 41. 41.

END OF RUN

>****************** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg
freeflow ramp speed=34.6mph)

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2002 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data (File FCVMTR.CTY assigns all VMT for this portion of the M6 run to RAMPS)
VMT BY FACILITY     : FCVMTR.CTY

* 2012 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.3495 0.0962 0.3201 0.0986 0.0453 0.0287 0.0028 0.0024
0.0018 0.0064 0.0076 0.0083 0.0294 0.0015 0.0007 0.0007

SCENARIO RECORD     : 2012 winter intersection: M6 assumes Ramp @ 34.6mph
CALENDAR YEAR       : 2012
```

```
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN


>****************** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2002 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2012 arterial/collector VMT fractions
VMT FRACTIONS      :
0.3738 0.1029 0.3424 0.1055 0.0485 0.0071 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD    : 2012 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle
rate for CAL3QHC)
AVERAGE SPEED      : 2.5 Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR      : 2012
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STAM2012.IN (file 1, run 1).                               *
**************************************************************************
* 2012 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven Maintenance Area
* May, 2007 (Last DEP input revisions)
* Edited by KMB of Fuss & O'Neill for 2012 conditions
* ************************************************************************************************
* Note that the composite emission factors produced with this input file include both start
* and running emissions.  EPA Guidance indicates that start emissions are typically negligible
* at intersections; therefore, use of composite emission factors will produce CO impacts that
* are conservatively high.  If modeled impacts (including background CO) approach or exceed the
* CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes start emissions.
* ************************************************************************************************
*
********************* Expressway Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
          User has supplied post-1999 sulfur levels.
  M603 Comment:
          User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2012 winter intersection: Freeway Freeflow @ 55 mph
* File 1, Run 1, Scenario 1.
* #
M581 Warning:
The user supplied freeway average speed of 55.0
will be used for all hours of the day. 100% of VMT
has been assigned to the freeway roadway type for
all hours of the day and all vehicle types.
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
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2012
Month: Jan.
Altitude: Low

Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3492	0.4163	0.1418		0.0263	0.0003	0.0021	0.0633	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	11.81	11.44	12.10	11.61	6.17	0.631	0.368	0.956	10.45	10.832

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2012.IN (file 1, run 2). *
****
********** Local Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:

```
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
  M615 Comment:
          User supplied VMT mix.

 * ##########################
 * 2012 winter intersection: Local @ 30 mph
 * File 1, Run 2, Scenario 1.
 * ##########################
  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
 *** 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
  M 48 Warning:
```

there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2012
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3735	0.4453	0.1517		0.0065	0.0003	0.0023	0.0156	0.0048	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	10.51	10.07	10.60	10.21	6.90	0.732	0.432	1.246	13.70	10.150

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2012.IN (file 1, run 3). *
****
********** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg freeflow ramp speed=34.6mph)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external

```
 * data file: CTREG05.D
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading Hourly Roadway VMT distribution from the following external
 * data file: FCVMTR.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
          User supplied VMT mix.

 * # # # # # # # # # # # # # # # # # # # # # # # #
 * 2012 winter intersection: M6 assumes Ramp @ 34.6mph
 * File 1, Run 3, Scenario 1.
 * # # # # # # # # # # # # # # # # # # # # # # # #
  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
 M 48 Warning:
          there are no sales for vehicle class LDDT12

 LEV phase-in data read from file NLEVNE.D
                Calendar Year:  2012
                     Month:  Jan.
                   Altitude:  Low
          Minimum Temperature:  41.0 (F)
          Maximum Temperature:  41.0 (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:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV       MC   All Veh
          GVWR:            <6000     >6000     (All)
                 ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3492    0.4163    0.1418            0.0263    0.0003    0.0021    0.0633    0.0007    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     14.08     13.16     13.67     13.29      6.10     0.678     0.398     1.091     12.32    12.574
 ---------------------------------------------------------------------------------------------------------------------
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STAM2012.IN (file 1, run 4).                               *
**************************************************************************
******************** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
          User has supplied post-1999 sulfur levels.
```

M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2012 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)
* File 1, Run 4, Scenario 1.
* #

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
*** 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
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2012
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3735	0.4453	0.1517		0.0065	0.0003	0.0023	0.0156	0.0048	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	22.67	21.56	23.98	22.17	38.20	2.458	1.523	6.212	100.87	22.538

```
MOBILE6 INPUT FILE :  stam2029.in
> Generic 2029 Winter CO Intersection Inputs for Hartford & Southwest CT Maintenance
Areas, as
> well as all other areas of Connecticut, EXCEPT the New Haven Maintenance Area.
SPREADSHEET        :
POLLUTANTS         : CO

RUN DATA
> 2029 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven
Maintenance Area
> May, 2007 (Last DEP input revisions)
> Edited by KMB of Fuss & O'Neill for 2029 conditions
>
********************************************************************************
************
> Note that the composite emission factors produced with this input file include
both start
> and running emissions.  EPA Guidance indicates that start emissions are typically
negligible
> at intersections; therefore, use of composite emission factors will produce CO
impacts that
> are conservatively high.  If modeled impacts (including background CO) approach or
exceed the
> CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes
start emissions.
>
********************************************************************************
************
>

>******************** Expressway Freeflow

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2005 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2029 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS      :
0.2917 0.1062 0.3534 0.1089 0.0501 0.0285 0.0028 0.0024
0.0018 0.0064 0.0076 0.0082 0.0292 0.0014 0.0007 0.0007

SCENARIO RECORD    : 2029 winter intersection: Freeway Freeflow @ 55 mph
AVERAGE SPEED      : 55. Non-Ramp 100.0 0.0 0.0 0.0
CALENDAR YEAR      : 2029
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
>****************** Local Freeflow

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2005 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* 2029 local VMT fractions (KMB changed using M62 VMT Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.3118 0.1135 0.3778 0.1164 0.0536 0.0071 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD     : 2029 winter intersection: Local @ 30 mph
AVERAGE SPEED       : 30. Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR       : 2029
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP        : 41. 41.

END OF RUN

>****************** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg
freeflow ramp speed=34.6mph)

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

>2002 Registration Age distribution most recent data available
REG DIST            : CTReg05.d

* I/M Data
I/M DESC FILE       : CTIM05p.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data (File FCVMTR.CTY assigns all VMT for this portion of the M6 run to RAMPS)
VMT BY FACILITY     : FCVMTR.CTY

* 2029 expressway/ramp VMT fractions (KMB changed using M62 VMT
Fractions_1-23-06.xls)
VMT FRACTIONS       :
0.2917 0.1062 0.3534 0.1089 0.0501 0.0285 0.0028 0.0024
0.0018 0.0064 0.0076 0.0082 0.0292 0.0014 0.0007 0.0007

SCENARIO RECORD     : 2029 winter intersection: M6 assumes Ramp @ 34.6mph
CALENDAR YEAR       : 2029
```

```
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN


>****************** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

>2002 Registration Age distribution most recent data available
REG DIST           : CTReg05.d

* I/M Data
I/M DESC FILE      : CTIM05p.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* 2029 arterial/collector VMT fractions
VMT FRACTIONS      :
0.3118 0.1135 0.3778 0.1164 0.0536 0.0071 0.0007 0.0006
0.0004 0.0016 0.0019 0.0020 0.0072 0.0004 0.0002 0.0048

SCENARIO RECORD    : 2029 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle
rate for CAL3QHC)
AVERAGE SPEED      : 2.5 Arterial 0.0 100.0 0.0 0.0
CALENDAR YEAR      : 2029
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for Weather Data for all of CT, EXCEPT New Haven Maintenance Area
MIN/MAX TEMP       : 41. 41.

END OF RUN
```

```
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STAM2029.IN (file 1, run 1).                               *
**************************************************************************
* 2029 Generic Run for Intersection Analysis anywhere in CT, EXCEPT New Haven Maintenance Area
* May, 2007 (Last DEP input revisions)
* Edited by KMB of Fuss & O'Neill for 2029 conditions
* ************************************************************************************************
* Note that the composite emission factors produced with this input file include both start
* and running emissions.  EPA Guidance indicates that start emissions are typically negligible
* at intersections; therefore, use of composite emission factors will produce CO impacts that
* are conservatively high.  If modeled impacts (including background CO) approach or exceed the
* CO NAAQS, consult CTDEP to discuss applying a more refined method that excludes start emissions.
* ************************************************************************************************
*
********************* Expressway Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
          User has supplied post-1999 sulfur levels.
  M603 Comment:
          User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2029 winter intersection: Freeway Freeflow @ 55 mph
* File 1, Run 1, Scenario 1.
* #
M581 Warning:
The user supplied freeway average speed of 55.0
will be used for all hours of the day. 100% of VMT
has been assigned to the freeway roadway type for
all hours of the day and all vehicle types.
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
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2029
Month: Jan.
Altitude: Low

Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2914	0.4596	0.1567		0.0261	0.0003	0.0024	0.0629	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	10.10	9.14	9.10	9.13	5.69	0.475	0.238	0.180	10.45	8.738

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2029.IN (file 1, run 2). *
****
********** Local Freeflow

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2005 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:

```
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
  M615 Comment:
          User supplied VMT mix.

 * # # # # # # # # # # # # # # # # # # # # # # # #
 * 2029 winter intersection: Local @ 30 mph
 * File 1, Run 2, Scenario 1.
 * # # # # # # # # # # # # # # # # # # # # # # # #
  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
 *** 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
  M 48 Warning:
```

there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2029
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3115	0.4913	0.1675		0.0065	0.0003	0.0025	0.0156	0.0048	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	9.06	8.00	7.92	7.98	6.36	0.552	0.283	0.234	13.70	8.189

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: STAM2029.IN (file 1, run 3). *
****
********** Ramp Freeflow (Use for all freeway ramps; MOBILE6 assumes avg freeflow ramp speed=34.6mph)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external

```
 * data file: CTREG05.D
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
          1.00     MYR sum not = 1. (will normalize)
  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: CTIM05P.D
 *CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
 *Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
 *Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
 *Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
 *Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
 *Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading ASM I/M Test Credits from ASMDATA.D
 *Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

 * Reading Hourly Roadway VMT distribution from the following external
 * data file: FCVMTR.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
          User supplied VMT mix.

 * # # # # # # # # # # # # # # # # # # # # # # # #
 * 2029 winter intersection: M6 assumes Ramp @ 34.6mph
 * File 1, Run 3, Scenario 1.
 * # # # # # # # # # # # # # # # # # # # # # # # #
  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
 M 48 Warning:
          there are no sales for vehicle class LDDT12

 LEV phase-in data read from file NLEVNE.D
               Calendar Year:  2029
                     Month:  Jan.
                  Altitude:  Low
          Minimum Temperature:  41.0 (F)
          Maximum Temperature:  41.0 (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:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV       MC   All Veh
          GVWR:            <6000     >6000     (All)
                 ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2914    0.4596    0.1567           0.0261    0.0003    0.0024    0.0629    0.0007    1.0000
 ---------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     11.38     10.23     10.18     10.22      5.63     0.511     0.259     0.205     12.32     9.784
 ---------------------------------------------------------------------------------------------------------------
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STAM2029.IN (file 1, run 4).                               *
**************************************************************************
******************** Idle @ 2.5 mph (Use for queues after multiplying by 2.5)

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
          User has supplied post-1999 sulfur levels.
```

M603 Comment:
User has disabled the calculation of REFUELING emissions.

*2002 Registration Age distribution most recent data available

* Reading Registration Distributions from the following external
* data file: CTREG05.D
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
M 49 Warning:
1.00 MYR sum not = 1. (will normalize)
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: CTIM05P.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR
M615 Comment:
User supplied VMT mix.

* #
* 2029 winter intersection: Idle @ 2.5 mph (x 2.5 to get idle rate for CAL3QHC)
* File 1, Run 4, Scenario 1.
* #

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
*** 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
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2029
Month: Jan.
Altitude: Low
Minimum Temperature: 41.0 (F)
Maximum Temperature: 41.0 (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:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3115	0.4913	0.1675		0.0065	0.0003	0.0025	0.0156	0.0048	1.0000

Composite Emission Factors (g/mi):

Composite CO :	18.30	17.13	17.59	17.25	35.24	1.870	1.054	1.168	100.87	17.797

NOTES

Intersection	Name	
3	Washington Boulevard at North State Street	
4	Washington Boulevard at South State Street	
6	Atlantic Street at North State Street	
7	Atlantic Street at South State Street	
10	Canal Street at North State Street	*Labeled INT 9 in Synchro output*
11	Canal Street at South State Street	*Labeled INT 10 in Synchro output*

Composite Emission Factors - All Vehicles

	TYPE	2009	2012	2029
Freeway Freeflow @ 55 mph (g/mi)	Exp	12.524	10.832	8.738
Local @ 30 mph (g/mi)	Local	11.730	10.150	8.189
Ramp Freeflow @34.6 mph (g/mi)	Ramp	14.972	12.574	9.784
Idle rate (g/hr)	Idle	66.945	56.345	44.493

I-95 Peak veh/hr calculated as follows:

CTDOT station in Greenwich, CT, 2002		Peak Hour (veh/hr)
NB	Morning	5684
	Afternoon	4441
SB	Morning	4022
	Afternoon	5958

CTDOT station in Greenwich, CT, 2005		Peak Hour (veh/hr)
NB	Morning	5787
	Afternoon	4302
SB	Morning	3965
	Afternoon	5650

CAL3HQ (Use same volumes for all years, 2009, 2012, and 2029)		Peak Hour (veh/hr)
NB	Morning	5700
	Afternoon	4400
SB	Morning	4000
	Afternoon	5800

		Total veh/hr
Both Directions	Morning	9700
Both Directions	Afternoon	10200

Coordinate System - Modify CT State Plan (feet) with False Easting and Northing
stamford2
Projection: Lambert_Conformal_Conic
False_Easting: 218868.000000
False_Northing: -79038.520000
Central_Meridian: -72.750000
Standard_Parallel_1: 41.200000
Standard_Parallel_2: 41.866667
Latitude_Of_Origin: 40.833333
Linear Unit: Foot_US

GCS_North_American_1927
Datum: D_North_American_1927

Display Units = Meters

FID	Shape *	Id	INT	X (m)	Y (m)	DAT FILE
0	Point	1	3	-18.1	4.8	'REC INT 3 ID 1' -18.1 4.8 1.8
1	Point	2	3	-18.3	-15.5	'REC INT 3 ID 2' -18.3 -15.5 1.8
2	Point	3	3	15.4	12.5	'REC INT 3 ID 3' 15.4 12.5 1.8
3	Point	4	3	16.4	-6.1	'REC INT 3 ID 4' 16.4 -6.1 1.8
46	Point	5	3	-70.4	-37.2	'REC INT 3 ID 5' -70.4 -37.2 1.8
47	Point	6	3	-13.9	67.8	'REC INT 3 ID 6' -13.9 67.8 1.8
48	Point	7	3	9.9	67.5	'REC INT 3 ID 7' 9.9 67.5 1.8
49	Point	8	3	67.6	32.6	'REC INT 3 ID 8' 67.6 32.6 1.8
4	Point	1	4	-14.7	-77.5	'REC INT 4 ID 1' -14.7 -77.5 1.8
5	Point	2	4	16	-55.8	'REC INT 4 ID 2' 16 -55.8 1.8
6	Point	3	4	19.9	-83.1	'REC INT 4 ID 3' 19.9 -83.1 1.8
7	Point	4	4	-19	-106.9	'REC INT 4 ID 4' -19 -106.9 1.8
50	Point	5	4	-17.2	-169.3	'REC INT 4 ID 5' -17.2 -169.3 1.8
51	Point	6	4	-70	-114.5	'REC INT 4 ID 6' -70 -114.5 1.8
52	Point	7	4	86.8	-32.6	'REC INT 4 ID 7' 86.8 -32.6 1.8
8	Point	1	6	276	120.5	'REC INT 6 ID 1' 276 120.5 1.8
9	Point	2	6	305.8	134.7	'REC INT 6 ID 2' 305.8 134.7 1.8
10	Point	3	6	306.8	111	'REC INT 6 ID 3' 306.8 111 1.8
11	Point	4	6	281.1	97.3	'REC INT 6 ID 4' 281.1 97.3 1.8
36	Point	5	6	276.6	171.5	'REC INT 6 ID 5' 276.6 171.5 1.8
37	Point	6	6	300	172.4	'REC INT 6 ID 6' 300 172.4 1.8
38	Point	7	6	361.3	137.2	'REC INT 6 ID 7' 361.3 137.2 1.8
39	Point	8	6	220.5	74.3	'REC INT 6 ID 8' 220.5 74.3 1.8
40	Point	9	6	214.6	99.7	'REC INT 6 ID 9' 214.6 99.7 1.8
41	Point	10	6	353.2	160.7	'REC INT 6 ID 10' 353.2 160.7 1.8
12	Point	1	7	297.5	58.3	'REC INT 7 ID 1' 297.5 58.3 1.8
13	Point	2	7	323.7	65.1	'REC INT 7 ID 2' 323.7 65.1 1.8
14	Point	3	7	303.2	42	'REC INT 7 ID 3' 303.2 42 1.8
15	Point	4	7	327	48.6	'REC INT 7 ID 4' 327 48.6 1.8
42	Point	5	7	237.4	30.9	'REC INT 7 ID 5' 237.4 30.9 1.8
43	Point	6	7	388.4	98.4	'REC INT 7 ID 6' 388.4 98.4 1.8
44	Point	7	7	222.4	2.6	'REC INT 7 ID 7' 222.4 2.6 1.8
45	Point	8	7	300.4	-15.4	'REC INT 7 ID 8' 300.4 -15.4 1.8
16	Point	1	10	591.3	286.6	'REC INT 10 ID 1' 591.3 286.6 1.8
17	Point	2	10	618.6	296.8	'REC INT 10 ID 2' 618.6 296.8 1.8
18	Point	3	10	621.7	276.1	'REC INT 10 ID 3' 621.7 276.1 1.8
19	Point	4	10	593.3	262.4	'REC INT 10 ID 4' 593.3 262.4 1.8
30	Point	5	10	651.2	307.1	'REC INT 10 ID 5' 651.2 307.1 1.8
31	Point	6	10	562.2	271.9	'REC INT 10 ID 6' 562.2 271.9 1.8
32	Point	7	10	618.3	329.8	'REC INT 10 ID 7' 618.3 329.8 1.8
33	Point	8	10	590.3	325.1	'REC INT 10 ID 8' 590.3 325.1 1.8
34	Point	9	10	562.8	250.2	'REC INT 10 ID 9' 562.8 250.2 1.8
35	Point	10	10	656.3	290.6	'REC INT 10 ID 10' 656.3 290.6 1.8
21	Point	1	11	603	217.4	'REC INT 11 ID 1' 603 217.4 1.8
22	Point	2	11	590.4	213.6	'REC INT 11 ID 2' 590.4 213.6 1.8
23	Point	3	11	626.3	223.3	'REC INT 11 ID 3' 626.3 223.3 1.8
24	Point	4	11	645.6	232.9	'REC INT 11 ID 4' 645.6 232.9 1.8
25	Point	5	11	606.1	199.9	'REC INT 11 ID 5' 606.1 199.9 1.8
26	Point	6	11	629.6	207.1	'REC INT 11 ID 6' 629.6 207.1 1.8
27	Point	7	11	656.6	215.8	'REC INT 11 ID 7' 656.6 215.8 1.8
28	Point	8	11	614.9	177.2	'REC INT 11 ID 8' 614.9 177.2 1.8
29	Point	9	11	638.4	185.1	'REC INT 11 ID 9' 638.4 185.1 1.8
20	Point	10	11	569	202.7	'REC INT 11 ID 10' 569 202.7 1.8

INTERSECTION 3: Washington at North State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	113.7, 40.8	0.2, -0.3	0.0	18.2	30	950	11.73											
Queue WBL	Local	'AG'	2	13.5, -0.7	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	150	66.945	1,438	2	3
Queue WBT	Local	'AG'	2	13.5, 2.8	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	250	66.945	1,513	2	3
Queue WBR	Local	'AG'	2	13.1, 7.3	113.7, 40.8	0.0	4.9				1	16	115	44	5	76	550	66.945	1,458	2	3
Departure WB	Ramp	'AG'	1	0.2, -0.3	-74.1, -30.8	0.0	18.2	34.6	1150	14.972											
Approach NB	Local	'AG'	1	-0.2, -62.4	5.9, 0.6	0.0	12.7	30	1170	11.73											
Queue NBL	Local	'AG'	2	3.3, -6.6	5.9, 0.6	0.0	3.4				1	11	115	22	4	97	300	66.945	1,468	2	3
Queue NBT2	Local	'AG'	2	11.0, -4.9	5.9, 0.6	0.0	3.4				2	11	115	71	5	49	870	66.945	2,935	2	3
Departure NB	Local	'AG'	1	5.9, 0.6	5.9, 68.0	0.0	12.7	30	1420	11.73											
Approach SB	Local	'AG'	1	-6.9, 67.8	-6.3, -0.5	0.0	13.3	30	1150	11.73											
Queue SBT2	Local	'AG'	2	-3.4, 7.1	-6.9, 67.8	0.0	3.7				2	12	115	49	5	71	820	66.945	3,124	2	3
Queue SBR	Local	'AG'	2	-4.5, 6.7	-6.9, 67.8	0.0	3.7				1	12	115	49	5	71	630	66.945	1,398	2	3
Departure SB	Local	'AG'	1	-6.3, -0.5	2.0, -81.8	0.0	13.3	30	970	11.73											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8.0	130	55	10200	12.524											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 4: Washington at South State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	-95.5, -136.9	8.2, -78.3	0	16.1	30	1020	11.73											
Queue EBL	Local	'AG'	2	-13.6, -87.2	-95.5, -136.9	0	3.4				1	11	115	34	5	86	350	66.945	1,454	2	3
Queue EBT	Local	'AG'	2	-14.4, -92.7	-95.5, -136.9	0	3.4				1	11	115	34	5	86	550	66.945	1,545	2	3
Queue EBR	Local	'AG'	2	15.1, -98.4	-95.5, -136.9	0	3.4				1	11	115	34	5	86	120	66.945	1,225	2	3
Departure EB	Local	'AG'	1	8.2, -78.3	128.6, -20.2	0	16.1	30	1320	11.73											
Approach NB	Local	'AG'	1	6.9, -151.5	13.4, -81.5	0	12.7	30	1070	11.73											
Queue NBT3	Local	'AG'	2	8.0, -86.0	6.9, -151.5	0	3.4				3	11	115	30	5	90	820	66.945	3,935	2	3
Queue NBR	Local	'AG'	2	10.5, -83.8	6.9, -151.5	0	3.4				1	11	115	115	0	0	250	66.945	1,900	2	3
Departure NB	Local	'AG'	1	13.4, -81.5	0.2, -0.3	0	12.7	30	1170	11.73											
Approach SB	Local	'AG'	1	0.2, -0.3	2.0, -81.8	0	12.1	30	970	11.73											
Queue SBL2	Local	'AG'	2	-7.7, -64.2	0.2, -0.3	0	3.0				2	10	115	21	4	98	520	66.945	2,734	2	3
Queue SBT2	Local	'AG'	2	-4.7, -63.2	0.2, -0.3	0	3.0				2	10	115	51	5	69	450	66.945	2,834	2	3
Departure SB	Local	'AG'	1	2.0, -81.8	-6.8, -153.7	0	12.1	30	570	11.73											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8	130	55	10200	12.524											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 6: Atlantic at North State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	430.1, 190.8	298.6, 126.3	0	17.0	30	2170	11.73											
Queue WBL	Local	'AG'	2	310.6, 119.0	430.1, 190.8	0	3.7				1	12	105	45	4	64	200	66.945	1,900	2	3
Queue WBT4	Local	'AG'	2	309.7, 122.8	430.1, 190.8	0	3.7				4	12	105	45	4	64	1770	66.945	5,661	2	3
Queue WBR	Local	'AG'	2	308.3, 129.6	430.1, 190.8	0	3.7				1	12	105	45	4	64	200	66.945	1,900	2	3
Departure WB	Local	'AG'	1	298.6, 126.3	176.1, 58.8	0	17.0	30	1160	11.73											
Approach NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	13.0	30	1000	11.73											
Queue NBL	Local	'AG'	2	298.8, 105.2	317.5, 57.4	0	3.7				1	12	105	12	4	97	300	66.945	1,900	2	3
Queue NBT2	Local	'AG'	2	303.2, 107.7	317.5, 57.4	0	3.4				2	11	105	60	4	49	700	66.945	2,226	2	3
Departure NB	Local	'AG'	1	298.5, 117.1	295.5, 202.6	0	13.0	30	900	11.73											
Approach SB	Local	'AG'	1	283.4, 202.6	287.8, 111.9	0	14.2	30	630	11.73											
Queue SBT2	Local	'AG'	2	282.6, 122.3	283.4, 202.6	0	4.6				2	15	105	48	4	61	280	66.945	3,504	2	3
Queue SBR	Local	'AG'	2	289.6, 126.3	283.4, 202.6	0	3.7				1	12	105	48	4	61	350	66.945	1,425	2	3
Departure SB	Local	'AG'	1	287.8, 111.9	317.5, 57.4	0	14.2	30	480	11.73											
Exit 8 On-Ramp	Ramp	'AG'	1	294.0, 111.9	176.1, 58.8	0	9.1	34.6	1260	14.972											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	9700	12.524											

Notes:

Morning has
peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 7: Atlantic at South State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	223.2, 21.1	317.5, 57.4	0	16.4	30	1120	11.73											
Queue EBL	Local	'AG'	2	298.8, 53.4	223.2, 21.1	0	3.4				1	11	115	60	4	59	400	66.945	1,247	2	3
Queue EBT4	Local	'AG'	2	299.9, 51.3	223.2, 21.1	0	3.4				4	11	115	60	4	59	1870	66.945	5,224	2	3
Queue EBR	Local	'AG'	2	300.2, 47.2	223.2, 21.1	0	3.7				1	12	115	115	4	4	50	66.945	1,900	2	3
Departure EB	Local	'AG'	1	317.5, 57.4	405.4, 96.9	0	16.4	30	2190	11.73											
Approach NB	Local	'AG'	1	310.7, -35.4	317.5, 57.4	0	14.2	30	400	11.73											
Queue NBT	Local	'AG'	2	318.4, 44.8	310.7, -35.4	0	4.6				1	15	115	42	4	77	250	66.945	1,750	2	3
Queue NBR	Local	'AG'	2	322.6, 46.4	310.7, -35.4	0	3.7				1	12	115	115	4	4	150	66.945	1,900	2	3
Departure NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	14.2	30	650	11.73											
Approach SB	Local	'AG'	1	298.5, 117.1	317.5, 57.4	0	12.7	30	370	11.73											
Queue SBL2	Local	'AG'	2	298.8, 53.4	298.5, 117.1	0	3.4				2	11	115	13	4	106	170	66.945	2,987	2	3
Queue SBT	Local	'AG'	2	300.2, 47.2	298.5, 117.1	0	3.4				1	11	115	55	4	64	200	66.945	1,621	2	3
Departure SB	Local	'AG'	1	317.5, 57.4	310.7, -35.4	0	12.7	30	250	11.73											
Exit 8 Off-Ramp	Ramp	'AG'	1	223.2, 21.1	317.5, 57.4	0	9.1	34.6	1200	14.972											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	10200	12.524											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 10: Canal at North State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	703.7, 317.6	607.7, 280.4	0	16.1	30	2220	11.73											
Queue WBL	Local	'AG'	2	627.4, 283.5	703.7, 317.6	0	3.4				1	11	105	48	4	61	250	66.945	1,900	2	3
Queue WBT4	Local	'AG'	2	624.8, 288.9	703.7, 317.6	0	3.4				4	11	105	48	4	61	1720	66.945	5,447	2	3
Queue WBR	Local	'AG'	2	623.7, 292.0	703.7, 317.6	0	3.4				1	11	105	105	4	4	250	66.945	1,900	2	3
Departure WB	Ramp	'AG'	1	607.7, 280.4	524.7, 243.2	0	16.1	34.6	2270	14.972											
Approach NB	Local	'AG'	1	617.0, 210.4	607.7, 280.4	0	12.7	30	620	11.73											
Queue NBL	Local	'AG'	2	611.4, 269.6	617.0, 210.4	0	3.4				1	11	105	24	4	85	400	66.945	203	2	3
Queue NBT2	Local	'AG'	2	614.7, 270.7	617.0, 210.4	0	3.4				2	11	105	57	5	53	420	66.945	3,079	2	3
Departure NB	Local	'AG'	1	607.7, 280.4	600.9, 35.1	0	12.7	30	900	11.73											
Approach SB	Local	'AG'	1	600.9, 35.1	607.7, 280.4	0	12.7	30	670	11.73											
Queue SBT2	Local	'AG'	2	604.6, 293.6	600.9, 35.1	0	3.4				2	11	105	33	5	77	750	66.945	3,002	2	3
Queue SBR	Local	'AG'	2	600.2, 290.9	600.9, 35.1	0	3.4				1	11	105	105	5	5	150	66.945	1,900	2	3
Departure SB	Local	'AG'	1	607.7, 280.4	617.0, 210.4	0	12.7	30	1000	11.73											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	9700	12.524											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 11: Canal at South State
YEAR 2009

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	525.0, 169.1	622.2, 211.1	0	17.0	30	2220	11.73											
Queue EBL	Local	'AG'	2	598.0, 211.5	525.0, 169.1	0	3.7				1	12	115	53	4	66	250	66.945	1,593	2	3
Queue EBT3	Local	'AG'	2	598.9, 208.5	525.0, 169.1	0	3.7				3	12	115	53	4	66	1570	66.945	4,439	2	3
Queue EBR	Local	'AG'	2	599.8, 202.5	525.0, 169.1	0	3.7				1	12	115	115	4	4	400	66.945	1,900	2	3
Departure EB	Local	'AG'	1	622.2, 211.1	709.7, 253.5	0	17.0	30	910	11.73											
Approach NB	Local	'AG'	1	661.1, 116.2	622.2, 211.1	0	13.0	30	900	11.73											
Queue NBT2	Local	'AG'	2	611.4, 169.6	661.1, 116.2	0	3.4				2	11	115	54	4	65	650	66.945	2,848	2	3
Queue NBR	Local	'AG'	2	617.6, 272.0	661.1, 116.2	0	3.7				1	12	115	115	4	4	250	66.945	1,900	2	3
Departure NB	Local	'AG'	1	622.2, 211.1	612.9, 283.0	0	13.0	30	900	11.73											
Approach SB	Local	'AG'	1	612.9, 283.0	622.2, 211.1	0	13.0	30	800	11.73											
Queue SBL	Local	'AG'	2	604.6, 293.6	612.9, 283.0	0	3.7				1	12	115	8	4	111	300	66.945	1,900	2	3
Queue SBT2	Local	'AG'	2	600.2, 290.9	612.9, 283.0	0	3.4				2	11	115	62	4	57	500	66.945	1,580	2	3
Departure SB	Local	'AG'	1	622.2, 211.1	661.1, 116.2	0	13.0	30	900	11.73											
Exit 7 On-Ramp	Ramp	'AG'	1	622.2, 211.1	709.7, 253.5	0	9.1	34.6	1210	14.972											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	10200	12.524											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 3: Washington at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	113.7, 40.8	0.2, -0.3	0.0	18.2	30	1124	10.15											
Queue WBL	Local	'AG'	2	13.5, -0.7	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	156	56.345	1,438	2	3
Queue WBT	Local	'AG'	2	13.5, 2.8	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	283	56.345	1,513	2	3
Queue WBR	Local	'AG'	2	13.1, 7.3	113.7, 40.8	0.0	4.9				1	16	115	44	5	76	685	56.345	1,458	2	3
Departure WB	Ramp	'AG'	1	0.2, -0.3	-74.1, -30.8	0.0	18.2	34.6	1364	12.574											
Approach NB	Local	'AG'	1	-0.2, -62.4	5.9, 0.6	0.0	12.7	30	1685	10.15											
Queue NBL	Local	'AG'	2	3.3, -6.6	5.9, 0.6	0.0	3.4				1	11	115	22	4	97	433	56.345	1,468	2	3
Queue NBT2	Local	'AG'	2	11.0, -4.9	5.9, 0.6	0.0	3.4				2	11	115	71	5	49	1252	56.345	2,935	2	3
Departure NB	Local	'AG'	1	5.9, 0.6	5.9, 68.0	0.0	12.7	30	1937	10.15											
Approach SB	Local	'AG'	1	-6.9, 67.8	-6.3, -0.5	0.0	13.3	30	1869	10.15											
Queue SBT2	Local	'AG'	2	-3.4, 7.1	-6.9, 67.8	0.0	3.7				2	12	115	49	5	71	1221	56.345	3,124	2	3
Queue SBR	Local	'AG'	2	-4.5, 6.7	-6.9, 67.8	0.0	3.7				1	12	115	49	5	71	648	56.345	1,398	2	3
Departure SB	Local	'AG'	1	-6.3, -0.5	2.0, -81.8	0.0	13.3	30	1377	10.15											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8.0	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 4: Washington at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	-95.5, -136.9	8.2, -78.3	0	16.1	30	1238	10.15											
Queue EBL	Local	'AG'	2	-13.6, -87.2	-95.5, -136.9	0	3.4				1	11	115	34	5	86	415	56.345	1,454	2	3
Queue EBT	Local	'AG'	2	-14.4, -92.7	-95.5, -136.9	0	3.4				1	11	115	34	5	86	594	56.345	1,545	2	3
Queue EBR	Local	'AG'	2	15.1, -98.4	-95.5, -136.9	0	3.4				1	11	115	34	5	86	229	56.345	1,225	2	3
Departure EB	Local	'AG'	1	8.2, -78.3	128.6, -20.2	0	16.1	30	1411	10.15											
Approach NB	Local	'AG'	1	6.9, -151.5	13.4, -81.5	0	12.7	30	1531	10.15											
Queue NBT3	Local	'AG'	2	8.0, -86.0	6.9, -151.5	0	3.4				3	11	115	30	5	90	1270	56.345	3,935	2	3
Queue NBR	Local	'AG'	2	10.5, -83.8	6.9, -151.5	0	3.4				1	11	115	115	0	0	261	56.345	1,900	2	3
Departure NB	Local	'AG'	1	13.4, -81.5	0.2, -0.3	0	12.7	30	1685	10.15											
Approach SB	Local	'AG'	1	0.2, -0.3	2.0, -81.8	0	12.1	30	1377	10.15											
Queue SBL2	Local	'AG'	2	-7.7, -64.2	0.2, -0.3	0	3.0				2	10	115	21	4	98	556	56.345	2,734	2	3
Queue SBT2	Local	'AG'	2	-4.7, -63.2	0.2, -0.3	0	3.0				2	10	115	51	5	69	821	56.345	2,834	2	3
Departure SB	Local	'AG'	1	2.0, -81.8	-6.8, -153.7	0	12.1	30	1050	10.15											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 6: Atlantic at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	430.1, 190.8	298.6, 126.3	0	17.0	30	2582	10.15											
Queue WBL	Local	'AG'	2	310.6, 119.0	430.1, 190.8	0	3.7				1	12	105	45	4	64	426	56.345	1,900	2	3
Queue WBT4	Local	'AG'	2	309.7, 122.8	430.1, 190.8	0	3.7				4	12	105	45	4	64	1899	56.345	5,661	2	3
Queue WBR	Local	'AG'	2	308.3, 129.6	430.1, 190.8	0	3.7				1	12	105	45	4	64	257	56.345	1,900	2	3
Departure WB	Local	'AG'	1	298.6, 126.3	176.1, 58.8	0	17.0	30	1305	10.15											
Approach NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	13.0	30	1301	10.15											
Queue NBL	Local	'AG'	2	298.8, 105.2	317.5, 57.4	0	3.7				1	12	105	12	4	97	411	56.345	1,900	2	3
Queue NBT2	Local	'AG'	2	303.2, 107.7	317.5, 57.4	0	3.4				2	11	105	60	4	49	890	56.345	2,226	2	3
Departure NB	Local	'AG'	1	298.5, 117.1	295.5, 202.6	0	13.0	30	1147	10.15											
Approach SB	Local	'AG'	1	283.4, 202.6	287.8, 111.9	0	14.2	30	960	10.15											
Queue SBT2	Local	'AG'	2	282.6, 122.3	283.4, 202.6	0	4.6				2	15	105	48	4	61	477	56.345	3,504	2	3
Queue SBR	Local	'AG'	2	289.6, 126.3	283.4, 202.6	0	3.7				1	12	105	48	4	61	483	56.345	1,425	2	3
Departure SB	Local	'AG'	1	287.8, 111.9	317.5, 57.4	0	14.2	30	903	10.15											
Exit 8 On-Ramp	Ramp	'AG'	1	294.0, 111.9	176.1, 58.8	0	9.1	34.6	1488	12.574											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	9700	10.832											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 7: Atlantic at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	223.2, 21.1	317.5, 57.4	0	16.4	30	1201	10.15											
Queue EBL	Local	'AG'	2	298.8, 53.4	223.2, 21.1	0	3.4				1	11	115	60	4	59	502	56.345	1,247	2	3
Queue EBT4	Local	'AG'	2	299.9, 51.3	223.2, 21.1	0	3.4				4	11	115	60	4	59	1962	56.345	5,224	2	3
Queue EBR	Local	'AG'	2	300.2, 47.2	223.2, 21.1	0	3.7				1	12	115	115	4	4	81	56.345	1,900	2	3
Departure EB	Local	'AG'	1	317.5, 57.4	405.4, 96.9	0	16.4	30	2633	10.15											
Approach NB	Local	'AG'	1	310.7, -35.4	317.5, 57.4	0	14.2	30	922	10.15											
Queue NBT	Local	'AG'	2	318.4, 44.8	310.7, -35.4	0	4.6				1	15	115	42	4	77	523	56.345	1,750	2	3
Queue NBR	Local	'AG'	2	322.6, 46.4	310.7, -35.4	0	3.7				1	12	115	115	4	4	399	56.345	1,900	2	3
Departure NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	14.2	30	1025	10.15											
Approach SB	Local	'AG'	1	298.5, 117.1	317.5, 57.4	0	12.7	30	764	10.15											
Queue SBL2	Local	'AG'	2	298.8, 53.4	298.5, 117.1	0	3.4				2	11	115	13	4	106	272	56.345	2,987	2	3
Queue SBT	Local	'AG'	2	300.2, 47.2	298.5, 117.1	0	3.4				1	11	115	55	4	64	492	56.345	1,621	2	3
Departure SB	Local	'AG'	1	317.5, 57.4	310.7, -35.4	0	12.7	30	573	10.15											
Exit 8 Off-Ramp	Ramp	'AG'	1	223.2, 21.1	317.5, 57.4	0	9.1	34.6	1342	12.574											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 10: Canal at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	703.7, 317.6	607.7, 280.4	0	16.1	30	2678	10.15											
Queue WBL	Local	'AG'	2	627.4, 283.5	703.7, 317.6	0	3.4				1	11	105	48	4	61	331	56.345	1,900	2	3
Queue WBT4	Local	'AG'	2	624.8, 288.9	703.7, 317.6	0	3.4				4	11	105	48	4	61	2086	56.345	5,447	2	3
Queue WBR	Local	'AG'	2	623.7, 292.0	703.7, 317.6	0	3.4				1	11	105	105	4	4	261	56.345	1,900	2	3
Departure WB	Ramp	'AG'	1	607.7, 280.4	524.7, 243.2	0	16.1	34.6	2686	12.574											
Approach NB	Local	'AG'	1	617.0, 210.4	607.7, 280.4	0	12.7	30	997	10.15											
Queue NBL	Local	'AG'	2	611.4, 269.6	617.0, 210.4	0	3.4				1	11	105	24	4	85	417	56.345	203	2	3
Queue NBT2	Local	'AG'	2	614.7, 270.7	617.0, 210.4	0	3.4				2	11	105	57	5	53	580	56.345	3,079	2	3
Departure NB	Local	'AG'	1	607.7, 280.4	600.9, 35.1	0	12.7	30	841	10.15											
Approach SB	Local	'AG'	1	600.9, 35.1	607.7, 280.4	0	12.7	30	852	10.15											
Queue SBT2	Local	'AG'	2	604.6, 293.6	600.9, 35.1	0	3.4				2	11	105	33	5	77	669	56.345	3,002	2	3
Queue SBR	Local	'AG'	2	600.2, 290.9	600.9, 35.1	0	3.4				1	11	105	105	5	5	183	56.345	1,900	2	3
Departure SB	Local	'AG'	1	607.7, 280.4	617.0, 210.4	0	12.7	30	1000	10.15											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	9700	10.832											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 11: Canal at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	525.0, 169.1	622.2, 211.1	0	17.0	30	2665	10.15											
Queue EBL	Local	'AG'	2	598.0, 211.5	525.0, 169.1	0	3.7				1	12	115	53	4	66	298	56.345	1,593	2	3
Queue EBT3	Local	'AG'	2	598.9, 208.5	525.0, 169.1	0	3.7				3	12	115	53	4	66	1934	56.345	4,439	2	3
Queue EBR	Local	'AG'	2	599.8, 202.5	525.0, 169.1	0	3.7				1	12	115	115	4	4	433	56.345	1,900	2	3
Departure EB	Local	'AG'	1	622.2, 211.1	709.7, 253.5	0	17.0	30	964	10.15											
Approach NB	Local	'AG'	1	661.1, 116.2	622.2, 211.1	0	13.0	30	1167	10.15											
Queue NBT2	Local	'AG'	2	611.4, 169.6	661.1, 116.2	0	3.4				2	11	115	54	4	65	830	56.345	2,848	2	3
Queue NBR	Local	'AG'	2	617.6, 272.0	661.1, 116.2	0	3.7				1	12	115	115	4	4	337	56.345	1,900	2	3
Departure NB	Local	'AG'	1	622.2, 211.1	612.9, 283.0	0	13.0	30	1228	10.15											
Approach SB	Local	'AG'	1	612.9, 283.0	622.2, 211.1	0	13.0	30	1019	10.15											
Queue SBL	Local	'AG'	2	604.6, 293.6	612.9, 283.0	0	3.7				1	12	115	8	4	111	314	56.345	1,900	2	3
Queue SBT2	Local	'AG'	2	600.2, 290.9	612.9, 283.0	0	3.4				2	11	115	62	4	57	705	56.345	1,580	2	3
Departure SB	Local	'AG'	1	622.2, 211.1	661.1, 116.2	0	13.0	30	1138	10.15											
Exit 7 On-Ramp	Ramp	'AG'	1	622.2, 211.1	709.7, 253.5	0	9.1	34.6	1621	12.574											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 3: Washington at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	113.7, 40.8	0.2, -0.3	0.0	18.2	30	1124	10.15											
Queue WBL	Local	'AG'	2	13.5, -0.7	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	156	56.345	1,438	2	3
Queue WBT	Local	'AG'	2	13.5, 2.8	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	283	56.345	1,513	2	3
Queue WBR	Local	'AG'	2	13.1, 7.3	113.7, 40.8	0.0	4.9				1	16	115	44	5	76	685	56.345	1,458	2	3
Departure WB	Ramp	'AG'	1	0.2, -0.3	-74.1, -30.8	0.0	18.2	34.6	1365	12.574											
Approach NB	Local	'AG'	1	-0.2, -62.4	5.9, 0.6	0.0	12.7	30	1694	10.15											
Queue NBL	Local	'AG'	2	3.3, -6.6	5.9, 0.6	0.0	3.4				1	11	115	22	4	97	434	56.345	1,468	2	3
Queue NBT2	Local	'AG'	2	11.0, -4.9	5.9, 0.6	0.0	3.4				2	11	115	71	5	49	1260	56.345	2,935	2	3
Departure NB	Local	'AG'	1	5.9, 0.6	5.9, 68.0	0.0	12.7	30	1945	10.15											
Approach SB	Local	'AG'	1	-6.9, 67.8	-6.3, -0.5	0.0	13.3	30	1872	10.15											
Queue SBT2	Local	'AG'	2	-3.4, 7.1	-6.9, 67.8	0.0	3.7				2	12	115	49	5	71	1224	56.345	3,124	2	3
Queue SBR	Local	'AG'	2	-4.5, 6.7	-6.9, 67.8	0.0	3.7				1	12	115	49	5	71	648	56.345	1,398	2	3
Departure SB	Local	'AG'	1	-6.3, -0.5	2.0, -81.8	0.0	13.3	30	1380	10.15											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8.0	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 4: Washington at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	-95.5, -136.9	8.2, -78.3	0	16.1	30	1238	10.15											
Queue EBL	Local	'AG'	2	-13.6, -87.2	-95.5, -136.9	0	3.4				1	11	115	34	5	86	415	56.345	1,454	2	3
Queue EBT	Local	'AG'	2	-14.4, -92.7	-95.5, -136.9	0	3.4				1	11	115	34	5	86	594	56.345	1,545	2	3
Queue EBR	Local	'AG'	2	15.1, -98.4	-95.5, -136.9	0	3.4				1	11	115	34	5	86	229	56.345	1,225	2	3
Departure EB	Local	'AG'	1	8.2, -78.3	128.6, -20.2	0	16.1	30	1411	10.15											
Approach NB	Local	'AG'	1	6.9, -151.5	13.4, -81.5	0	12.7	30	1540	10.15											
Queue NBT3	Local	'AG'	2	8.0, -86.0	6.9, -151.5	0	3.4				3	11	115	30	5	90	1279	56.345	3,935	2	3
Queue NBR	Local	'AG'	2	10.5, -83.8	6.9, -151.5	0	3.4				1	11	115	115	0	0	261	56.345	1,900	2	3
Departure NB	Local	'AG'	1	13.4, -81.5	0.2, -0.3	0	12.7	30	1694	10.15											
Approach SB	Local	'AG'	1	0.2, -0.3	2.0, -81.8	0	12.1	30	1380	10.15											
Queue SBL2	Local	'AG'	2	-7.7, -64.2	0.2, -0.3	0	3.0				2	10	115	21	4	98	556	56.345	2,734	2	3
Queue SBT2	Local	'AG'	2	-4.7, -63.2	0.2, -0.3	0	3.0				2	10	115	51	5	69	824	56.345	2,834	2	3
Departure SB	Local	'AG'	1	2.0, -81.8	-6.8, -153.7	0	12.1	30	1053	10.15											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 6: Atlantic at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	430.1, 190.8	298.6, 126.3	0	17.0	30	2587	10.15											
Queue WBL	Local	'AG'	2	310.6, 119.0	430.1, 190.8	0	3.7				1	12	105	45	4	64	431	56.345	1,900	2	3
Queue WBT4	Local	'AG'	2	309.7, 122.8	430.1, 190.8	0	3.7				4	12	105	45	4	64	1899	56.345	5,661	2	3
Queue WBR	Local	'AG'	2	308.3, 129.6	430.1, 190.8	0	3.7				1	12	105	45	4	64	257	56.345	1,900	2	3
Departure WB	Local	'AG'	1	298.6, 126.3	176.1, 58.8	0	17.0	30	1488	10.15											
Approach NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	13.0	30	1304	10.15											
Queue NBL	Local	'AG'	2	298.8, 105.2	317.5, 57.4	0	3.7				1	12	105	12	4	97	411	56.345	1,900	2	3
Queue NBT2	Local	'AG'	2	303.2, 107.7	317.5, 57.4	0	3.4				2	11	105	60	4	49	890	56.345	2,226	2	3
Departure NB	Local	'AG'	1	298.5, 117.1	295.5, 202.6	0	13.0	30	1150	10.15											
Approach SB	Local	'AG'	1	283.4, 202.6	287.8, 111.9	0	14.2	30	989	10.15											
Queue SBT2	Local	'AG'	2	282.6, 122.3	283.4, 202.6	0	4.6				2	15	105	48	4	61	506	56.345	3,504	2	3
Queue SBR	Local	'AG'	2	289.6, 126.3	283.4, 202.6	0	3.7				1	12	105	48	4	61	483	56.345	1,425	2	3
Departure SB	Local	'AG'	1	287.8, 111.9	317.5, 57.4	0	14.2	30	937	10.15											
Exit 8 On-Ramp	Ramp	'AG'	1	294.0, 111.9	176.1, 58.8	0	9.1	34.6	1488	12.574											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	9700	10.832											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 7: Atlantic at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	223.2, 21.1	317.5, 57.4	0	16.4	30	1201	10.15											
Queue EBL	Local	'AG'	2	298.8, 53.4	223.2, 21.1	0	3.4				1	11	115	60	4	59	502	56.345	1,247	2	3
Queue EBT4	Local	'AG'	2	299.9, 51.3	223.2, 21.1	0	3.4				4	11	115	60	4	59	1962	56.345	5,224	2	3
Queue EBR	Local	'AG'	2	300.2, 47.2	223.2, 21.1	0	3.7				1	12	115	115	4	4	81	56.345	1,900	2	3
Departure EB	Local	'AG'	1	317.5, 57.4	405.4, 96.9	0	16.4	30	2635	10.15											
Approach NB	Local	'AG'	1	310.7, -35.4	317.5, 57.4	0	14.2	30	933	10.15											
Queue NBT	Local	'AG'	2	318.4, 44.8	310.7, -35.4	0	4.6				1	15	115	42	4	77	532	56.345	1,750	2	3
Queue NBR	Local	'AG'	2	322.6, 46.4	310.7, -35.4	0	3.7				1	12	115	115	4	4	401	56.345	1,900	2	3
Departure NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	14.2	30	1034	10.15											
Approach SB	Local	'AG'	1	298.5, 117.1	317.5, 57.4	0	12.7	30	769	10.15											
Queue SBL2	Local	'AG'	2	298.8, 53.4	298.5, 117.1	0	3.4				2	11	115	13	4	106	272	56.345	2,987	2	3
Queue SBT	Local	'AG'	2	300.2, 47.2	298.5, 117.1	0	3.4				1	11	115	55	4	64	497	56.345	1,621	2	3
Departure SB	Local	'AG'	1	317.5, 57.4	310.7, -35.4	0	12.7	30	578	10.15											
Exit 8 Off-Ramp	Ramp	'AG'	1	223.2, 21.1	317.5, 57.4	0	9.1	34.6	1344	12.574											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 10: Canal at North State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	703.7, 317.6	607.7, 280.4	0	16.1	30	2688	10.15											
Queue WBL	Local	'AG'	2	627.4, 283.5	703.7, 317.6	0	3.4				1	11	105	48	4	61	336	56.345	1,900	2	3
Queue WBT4	Local	'AG'	2	624.8, 288.9	703.7, 317.6	0	3.4				4	11	105	48	4	61	2091	56.345	5,447	2	3
Queue WBR	Local	'AG'	2	623.7, 292.0	703.7, 317.6	0	3.4				1	11	105	105	4	4	261	56.345	1,900	2	3
Departure WB	Ramp	'AG'	1	607.7, 280.4	524.7, 243.2	0	16.1	34.6	2691	12.574											
Approach NB	Local	'AG'	1	617.0, 210.4	607.7, 280.4	0	12.7	30	999	10.15											
Queue NBL	Local	'AG'	2	611.4, 269.6	617.0, 210.4	0	3.4				1	11	105	24	4	85	417	56.345	203	2	3
Queue NBT2	Local	'AG'	2	614.7, 270.7	617.0, 210.4	0	3.4				2	11	105	57	5	53	582	56.345	3,079	2	3
Departure NB	Local	'AG'	1	607.7, 280.4	600.9, 35.1	0	12.7	30	843	10.15											
Approach SB	Local	'AG'	1	600.9, 35.1	607.7, 280.4	0	12.7	30	871	10.15											
Queue SBT2	Local	'AG'	2	604.6, 293.6	600.9, 35.1	0	3.4				2	11	105	33	5	77	688	56.345	3,002	2	3
Queue SBR	Local	'AG'	2	600.2, 290.9	600.9, 35.1	0	3.4				1	11	105	105	5	5	183	56.345	1,900	2	3
Departure SB	Local	'AG'	1	607.7, 280.4	617.0, 210.4	0	12.7	30	1024	10.15											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	9700	10.832											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 11: Canal at South State
YEAR 2012

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	525.0, 169.1	622.2, 211.1	0	17.0	30	2667	10.15											
Queue EBL	Local	'AG'	2	598.0, 211.5	525.0, 169.1	0	3.7				1	12	115	53	4	66	298	56.345	1,593	2	3
Queue EBT3	Local	'AG'	2	598.9, 208.5	525.0, 169.1	0	3.7				3	12	115	53	4	66	1934	56.345	4,439	2	3
Queue EBR	Local	'AG'	2	599.8, 202.5	525.0, 169.1	0	3.7				1	12	115	115	4	4	433	56.345	1,900	2	3
Departure EB	Local	'AG'	1	622.2, 211.1	709.7, 253.5	0	17.0	30	964	10.15											
Approach NB	Local	'AG'	1	661.1, 116.2	622.2, 211.1	0	13.0	30	1175	10.15											
Queue NBT2	Local	'AG'	2	611.4, 169.6	661.1, 116.2	0	3.4				2	11	115	54	4	65	836	56.345	2,848	2	3
Queue NBR	Local	'AG'	2	617.6, 272.0	661.1, 116.2	0	3.7				1	12	115	115	4	4	339	56.345	1,900	2	3
Departure NB	Local	'AG'	1	622.2, 211.1	612.9, 283.0	0	13.0	30	1134	10.15											
Approach SB	Local	'AG'	1	612.9, 283.0	622.2, 211.1	0	13.0	30	1023	10.15											
Queue SBL	Local	'AG'	2	604.6, 293.6	612.9, 283.0	0	3.7				1	12	115	8	4	111	314	56.345	1,900	2	3
Queue SBT2	Local	'AG'	2	600.2, 290.9	612.9, 283.0	0	3.4				2	11	115	62	4	57	709	56.345	1,580	2	3
Departure SB	Local	'AG'	1	622.2, 211.1	661.1, 116.2	0	13.0	30	1142	10.15											
Exit 7 On-Ramp	Ramp	'AG'	1	622.2, 211.1	709.7, 253.5	0	9.1	34.6	1625	12.574											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	10200	10.832											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 3: Washington at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	113.7, 40.8	0.2, -0.3	0.0	18.2	30	1300	8.189											
Queue WBL	Local	'AG'	2	13.5, -0.7	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	180	44.4925	1,438	2	3
Queue WBT	Local	'AG'	2	13.5, 2.8	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	330	44.4925	1,513	2	3
Queue WBR	Local	'AG'	2	13.1, 7.3	113.7, 40.8	0.0	4.9				1	16	115	44	5	76	790	44.4925	1,458	2	3
Departure WB	Ramp	'AG'	1	0.2, -0.3	-74.1, -30.8	0.0	18.2	34.6	1580	9.784											
Approach NB	Local	'AG'	1	-0.2, -62.4	5.9, 0.6	0.0	12.7	30	1940	8.189											
Queue NBL	Local	'AG'	2	3.3, -6.6	5.9, 0.6	0.0	3.4				1	11	115	22	4	97	500	44.4925	1,468	2	3
Queue NBT2	Local	'AG'	2	11.0, -4.9	5.9, 0.6	0.0	3.4				2	11	115	71	5	49	1440	44.4925	2,935	2	3
Departure NB	Local	'AG'	1	5.9, 0.6	5.9, 68.0	0.0	12.7	30	2230	8.189											
Approach SB	Local	'AG'	1	-6.9, 67.8	-6.3, -0.5	0.0	13.3	30	2150	8.189											
Queue SBT2	Local	'AG'	2	-3.4, 7.1	-6.9, 67.8	0.0	3.7				2	12	115	49	5	71	1400	44.4925	3,124	2	3
Queue SBR	Local	'AG'	2	-4.5, 6.7	-6.9, 67.8	0.0	3.7				1	12	115	49	5	71	750	44.4925	1,398	2	3
Departure SB	Local	'AG'	1	-6.3, -0.5	2.0, -81.8	0.0	13.3	30	1580	8.189											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8.0	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 4: Washington at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	-95.5, -136.9	8.2, -78.3	0	16.1	30	1430	8.189											
Queue EBL	Local	'AG'	2	-13.6, -87.2	-95.5, -136.9	0	3.4				1	11	115	34	5	86	470	44.4925	1,454	2	3
Queue EBT	Local	'AG'	2	-14.4, -92.7	-95.5, -136.9	0	3.4				1	11	115	34	5	86	690	44.4925	1,545	2	3
Queue EBR	Local	'AG'	2	15.1, -98.4	-95.5, -136.9	0	3.4				1	11	115	34	5	86	270	44.4925	1,225	2	3
Departure EB	Local	'AG'	1	8.2, -78.3	128.6, -20.2	0	16.1	30	1630	8.189											
Approach NB	Local	'AG'	1	6.9, -151.5	13.4, -81.5	0	12.7	30	1770	8.189											
Queue NBT3	Local	'AG'	2	8.0, -86.0	6.9, -151.5	0	3.4				3	11	115	30	5	90	1470	44.4925	3,935	2	3
Queue NBR	Local	'AG'	2	10.5, -83.8	6.9, -151.5	0	3.4				1	11	115	115	0	0	300	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	13.4, -81.5	0.2, -0.3	0	12.7	30	1940	8.189											
Approach SB	Local	'AG'	1	0.2, -0.3	2.0, -81.8	0	12.1	30	1580	8.189											
Queue SBL2	Local	'AG'	2	-7.7, -64.2	0.2, -0.3	0	3.0				2	10	115	21	4	98	640	44.4925	2,734	2	3
Queue SBT2	Local	'AG'	2	-4.7, -63.2	0.2, -0.3	0	3.0				2	10	115	51	5	69	940	44.4925	2,834	2	3
Departure SB	Local	'AG'	1	2.0, -81.8	-6.8, -153.7	0	12.1	30	1210	8.189											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 6: Atlantic at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	430.1, 190.8	298.6, 126.3	0	17.0	30	2980	8.189											
Queue WBL	Local	'AG'	2	310.6, 119.0	430.1, 190.8	0	3.7				1	12	105	45	4	64	490	44.4925	1,900	2	3
Queue WBT4	Local	'AG'	2	309.7, 122.8	430.1, 190.8	0	3.7				4	12	105	45	4	64	2190	44.4925	5,661	2	3
Queue WBR	Local	'AG'	2	308.3, 129.6	430.1, 190.8	0	3.7				1	12	105	45	4	64	300	44.4925	1,900	2	3
Departure WB	Local	'AG'	1	298.6, 126.3	176.1, 58.8	0	17.0	30	1510	8.189											
Approach NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	13.0	30	1490	8.189											
Queue NBL	Local	'AG'	2	298.8, 105.2	317.5, 57.4	0	3.7				1	12	105	12	4	97	480	44.4925	1,900	2	3
Queue NBT2	Local	'AG'	2	303.2, 107.7	317.5, 57.4	0	3.4				2	11	105	60	4	49	1010	44.4925	2,226	2	3
Departure NB	Local	'AG'	1	298.5, 117.1	295.5, 202.6	0	13.0	30	1310	8.189											
Approach SB	Local	'AG'	1	283.4, 202.6	287.8, 111.9	0	14.2	30	1110	8.189											
Queue SBT2	Local	'AG'	2	282.6, 122.3	283.4, 202.6	0	4.6				2	15	105	48	4	61	550	44.4925	3,504	2	3
Queue SBR	Local	'AG'	2	289.6, 126.3	283.4, 202.6	0	3.7				1	12	105	48	4	61	560	44.4925	1,425	2	3
Departure SB	Local	'AG'	1	287.8, 111.9	317.5, 57.4	0	14.2	30	1040	8.189											
Exit 8 On-Ramp	Ramp	'AG'	1	294.0, 111.9	176.1, 58.8	0	9.1	34.6	1720	9.784											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	9700	8.738											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 7: Atlantic at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	223.2, 21.1	317.5, 57.4	0	16.4	30	1390	8.189											
Queue EBL	Local	'AG'	2	298.8, 53.4	223.2, 21.1	0	3.4				1	11	115	60	4	59	580	44.4925	1,247	2	3
Queue EBT4	Local	'AG'	2	299.9, 51.3	223.2, 21.1	0	3.4				4	11	115	60	4	59	2260	44.4925	5,224	2	3
Queue EBR	Local	'AG'	2	300.2, 47.2	223.2, 21.1	0	3.7				1	12	115	115	4	4	100	44.4925	1,900	2	3
Departure EB	Local	'AG'	1	317.5, 57.4	405.4, 96.9	0	16.4	30	1290	8.189											
Approach NB	Local	'AG'	1	310.7, -35.4	317.5, 57.4	0	14.2	30	1060	8.189											
Queue NBT	Local	'AG'	2	318.4, 44.8	310.7, -35.4	0	4.6				1	15	115	42	4	77	600	44.4925	1,750	2	3
Queue NBR	Local	'AG'	2	322.6, 46.4	310.7, -35.4	0	3.7				1	12	115	115	4	4	460	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	14.2	30	1180	8.189											
Approach SB	Local	'AG'	1	298.5, 117.1	317.5, 57.4	0	12.7	30	870	8.189											
Queue SBL2	Local	'AG'	2	298.8, 53.4	298.5, 117.1	0	3.4				2	11	115	13	4	106	320	44.4925	2,987	2	3
Queue SBT	Local	'AG'	2	300.2, 47.2	298.5, 117.1	0	3.4				1	11	115	55	4	64	550	44.4925	1,621	2	3
Departure SB	Local	'AG'	1	317.5, 57.4	310.7, -35.4	0	12.7	30	650	8.189											
Exit 8 Off-Ramp	Ramp	'AG'	1	223.2, 21.1	317.5, 57.4	0	9.1	34.6	1550	9.784											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 10: Canal at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	703.7, 317.6	607.7, 280.4	0	16.1	30	3080	8.189											
Queue WBL	Local	'AG'	2	627.4, 283.5	703.7, 317.6	0	3.4				1	11	105	48	4	61	380	44.4925	1,900	2	3
Queue WBT4	Local	'AG'	2	624.8, 288.9	703.7, 317.6	0	3.4				4	11	105	48	4	61	2400	44.4925	5,447	2	3
Queue WBR	Local	'AG'	2	623.7, 292.0	703.7, 317.6	0	3.4				1	11	105	105	4	4	300	44.4925	1,900	2	3
Departure WB	Ramp	'AG'	1	607.7, 280.4	524.7, 243.2	0	16.1	34.6	3090	9.784											
Approach NB	Local	'AG'	1	617.0, 210.4	607.7, 280.4	0	12.7	30	1150	8.189											
Queue NBL	Local	'AG'	2	611.4, 269.6	617.0, 210.4	0	3.4				1	11	105	24	4	85	480	44.4925	203	2	3
Queue NBT2	Local	'AG'	2	614.7, 270.7	617.0, 210.4	0	3.4				2	11	105	57	5	53	670	44.4925	3,079	2	3
Departure NB	Local	'AG'	1	607.7, 280.4	600.9, 35.1	0	12.7	30	970	8.189											
Approach SB	Local	'AG'	1	600.9, 35.1	607.7, 280.4	0	12.7	30	1030	8.189											
Queue SBT2	Local	'AG'	2	604.6, 293.6	600.9, 35.1	0	3.4				2	11	105	33	5	77	820	44.4925	3,002	2	3
Queue SBR	Local	'AG'	2	600.2, 290.9	600.9, 35.1	0	3.4				1	11	105	105	5	5	210	44.4925	1,900	2	3
Departure SB	Local	'AG'	1	607.7, 280.4	617.0, 210.4	0	12.7	30	1200	8.189											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	9700	8.738											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 11: Canal at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	525.0, 169.1	622.2, 211.1	0	17.0	30	3070	8.189											
Queue EBL	Local	'AG'	2	598.0, 211.5	525.0, 169.1	0	3.7				1	12	115	53	4	66	340	44.4925	1,593	2	3
Queue EBT3	Local	'AG'	2	598.9, 208.5	525.0, 169.1	0	3.7				3	12	115	53	4	66	2230	44.4925	4,439	2	3
Queue EBR	Local	'AG'	2	599.8, 202.5	525.0, 169.1	0	3.7				1	12	115	115	4	4	500	44.4925	1,900	2	3
Departure EB	Local	'AG'	1	622.2, 211.1	709.7, 253.5	0	17.0	30	1110	8.189											
Approach NB	Local	'AG'	1	661.1, 116.2	622.2, 211.1	0	13.0	30	1350	8.189											
Queue NBT2	Local	'AG'	2	611.4, 169.6	661.1, 116.2	0	3.4				2	11	115	54	4	65	960	44.4925	2,848	2	3
Queue NBR	Local	'AG'	2	617.6, 272.0	661.1, 116.2	0	3.7				1	12	115	115	4	4	390	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	622.2, 211.1	612.9, 283.0	0	13.0	30	1300	8.189											
Approach SB	Local	'AG'	1	612.9, 283.0	622.2, 211.1	0	13.0	30	1180	8.189											
Queue SBL	Local	'AG'	2	604.6, 293.6	612.9, 283.0	0	3.7				1	12	115	8	4	111	360	44.4925	1,900	2	3
Queue SBT2	Local	'AG'	2	600.2, 290.9	612.9, 283.0	0	3.4				2	11	115	62	4	57	820	44.4925	1,580	2	3
Departure SB	Local	'AG'	1	622.2, 211.1	661.1, 116.2	0	13.0	30	1320	8.189											
Exit 7 On-Ramp	Ramp	'AG'	1	622.2, 211.1	709.7, 253.5	0	9.1	34.6	1870	9.784											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 3: Washington at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	113.7, 40.8	0.2, -0.3	0.0	18.2	30	1300	8.189											
Queue WBL	Local	'AG'	2	13.5, -0.7	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	180	44.4925	1,438	2	3
Queue WBT	Local	'AG'	2	13.5, 2.8	113.7, 40.8	0.0	3.7				1	12	115	44	5	76	330	44.4925	1,513	2	3
Queue WBR	Local	'AG'	2	13.1, 7.3	113.7, 40.8	0.0	4.9				1	16	115	44	5	76	790	44.4925	1,458	2	3
Departure WB	Ramp	'AG'	1	0.2, -0.3	-74.1, -30.8	0.0	18.2	34.6	1581	9.784											
Approach NB	Local	'AG'	1	-0.2, -62.4	5.9, 0.6	0.0	12.7	30	1949	8.189											
Queue NBL	Local	'AG'	2	3.3, -6.6	5.9, 0.6	0.0	3.4				1	11	115	22	4	97	501	44.4925	1,468	2	3
Queue NBT2	Local	'AG'	2	11.0, -4.9	5.9, 0.6	0.0	3.4				2	11	115	71	5	49	1448	44.4925	2,935	2	3
Departure NB	Local	'AG'	1	5.9, 0.6	5.9, 68.0	0.0	12.7	30	2238	8.189											
Approach SB	Local	'AG'	1	-6.9, 67.8	-6.3, -0.5	0.0	13.3	30	2153	8.189											
Queue SBT2	Local	'AG'	2	-3.4, 7.1	-6.9, 67.8	0.0	3.7				2	12	115	49	5	71	1403	44.4925	3,124	2	3
Queue SBR	Local	'AG'	2	-4.5, 6.7	-6.9, 67.8	0.0	3.7				1	12	115	49	5	71	750	44.4925	1,398	2	3
Departure SB	Local	'AG'	1	-6.3, -0.5	2.0, -81.8	0.0	13.3	30	1583	8.189											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8.0	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 4: Washington at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	-95.5, -136.9	8.2, -78.3	0	16.1	30	1430	8.189											
Queue EBL	Local	'AG'	2	-13.6, -87.2	-95.5, -136.9	0	3.4				1	11	115	34	5	86	470	44.4925	1,454	2	3
Queue EBT	Local	'AG'	2	-14.4, -92.7	-95.5, -136.9	0	3.4				1	11	115	34	5	86	690	44.4925	1,545	2	3
Queue EBR	Local	'AG'	2	15.1, -98.4	-95.5, -136.9	0	3.4				1	11	115	34	5	86	270	44.4925	1,225	2	3
Departure EB	Local	'AG'	1	8.2, -78.3	128.6, -20.2	0	16.1	30	1630	8.189											
Approach NB	Local	'AG'	1	6.9, -151.5	13.4, -81.5	0	12.7	30	1779	8.189											
Queue NBT3	Local	'AG'	2	8.0, -86.0	6.9, -151.5	0	3.4				3	11	115	30	5	90	1479	44.4925	3,935	2	3
Queue NBR	Local	'AG'	2	10.5, -83.8	6.9, -151.5	0	3.4				1	11	115	115	0	0	300	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	13.4, -81.5	0.2, -0.3	0	12.7	30	1949	8.189											
Approach SB	Local	'AG'	1	0.2, -0.3	2.0, -81.8	0	12.1	30	1583	8.189											
Queue SBL2	Local	'AG'	2	-7.7, -64.2	0.2, -0.3	0	3.0				2	10	115	21	4	98	640	44.4925	2,734	2	3
Queue SBT2	Local	'AG'	2	-4.7, -63.2	0.2, -0.3	0	3.0				2	10	115	51	5	69	943	44.4925	2,834	2	3
Departure SB	Local	'AG'	1	2.0, -81.8	-6.8, -153.7	0	12.1	30	1213	8.189											
I-95 Overpass	Exp	'BR'	1	118.1, 13.4	-81.8, -64.4	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 6: Atlantic at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	430.1, 190.8	298.6, 126.3	0	17.0	30	2985	8.189											
Queue WBL	Local	'AG'	2	310.6, 119.0	430.1, 190.8	0	3.7				1	12	105	45	4	64	495	44.4925	1,900	2	3
Queue WBT4	Local	'AG'	2	309.7, 122.8	430.1, 190.8	0	3.7				4	12	105	45	4	64	2190	44.4925	5,661	2	3
Queue WBR	Local	'AG'	2	308.3, 129.6	430.1, 190.8	0	3.7				1	12	105	45	4	64	300	44.4925	1,900	2	3
Departure WB	Local	'AG'	1	298.6, 126.3	176.1, 58.8	0	17.0	30	1510	8.189											
Approach NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	13.0	30	1493	8.189											
Queue NBL	Local	'AG'	2	298.8, 105.2	317.5, 57.4	0	3.7				1	12	105	12	4	97	480	44.4925	1,900	2	3
Queue NBT2	Local	'AG'	2	303.2, 107.7	317.5, 57.4	0	3.4				2	11	105	60	4	49	1013	44.4925	2,226	2	3
Departure NB	Local	'AG'	1	298.5, 117.1	295.5, 202.6	0	13.0	30	1313	8.189											
Approach SB	Local	'AG'	1	283.4, 202.6	287.8, 111.9	0	14.2	30	1139	8.189											
Queue SBT2	Local	'AG'	2	282.6, 122.3	283.4, 202.6	0	4.6				2	15	105	48	4	61	579	44.4925	3,504	2	3
Queue SBR	Local	'AG'	2	289.6, 126.3	283.4, 202.6	0	3.7				1	12	105	48	4	61	560	44.4925	1,425	2	3
Departure SB	Local	'AG'	1	287.8, 111.9	317.5, 57.4	0	14.2	30	1074	8.189											
Exit 8 On-Ramp	Ramp	'AG'	1	294.0, 111.9	176.1, 58.8	0	9.1	34.6	1720	9.784											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	9700	8.738											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 7: Atlantic at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	223.2, 21.1	317.5, 57.4	0	16.4	30	1390	8.189											
Queue EBL	Local	'AG'	2	298.8, 53.4	223.2, 21.1	0	3.4				1	11	115	60	4	59	580	44.4925	1,247	2	3
Queue EBT4	Local	'AG'	2	299.9, 51.3	223.2, 21.1	0	3.4				4	11	115	60	4	59	2260	44.4925	5,224	2	3
Queue EBR	Local	'AG'	2	300.2, 47.2	223.2, 21.1	0	3.7				1	12	115	115	4	4	100	44.4925	1,900	2	3
Departure EB	Local	'AG'	1	317.5, 57.4	405.4, 96.9	0	16.4	30	3042	8.189											
Approach NB	Local	'AG'	1	310.7, -35.4	317.5, 57.4	0	14.2	30	1071	8.189											
Queue NBT	Local	'AG'	2	318.4, 44.8	310.7, -35.4	0	4.6				1	15	115	42	4	77	609	44.4925	1,750	2	3
Queue NBR	Local	'AG'	2	322.6, 46.4	310.7, -35.4	0	3.7				1	12	115	115	4	4	462	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	317.5, 57.4	298.5, 117.1	0	14.2	30	1189	8.189											
Approach SB	Local	'AG'	1	298.5, 117.1	317.5, 57.4	0	12.7	30	875	8.189											
Queue SBL2	Local	'AG'	2	298.8, 53.4	298.5, 117.1	0	3.4				2	11	115	13	4	106	320	44.4925	2,987	2	3
Queue SBT	Local	'AG'	2	300.2, 47.2	298.5, 117.1	0	3.4				1	11	115	55	4	64	555	44.4925	1,621	2	3
Departure SB	Local	'AG'	1	317.5, 57.4	310.7, -35.4	0	12.7	30	655	8.189											
Exit 8 Off-Ramp	Ramp	'AG'	1	223.2, 21.1	317.5, 57.4	0	9.1	34.6	1550	9.784											
I-95 Overpass	Exp	'BR'	1	222.0, 55.5	404.6, 138.1	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 10: Canal at North State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach WB	Local	'AG'	1	703.7, 317.6	607.7, 280.4	0	16.1	30	3090	8.189											
Queue WBL	Local	'AG'	2	627.4, 283.5	703.7, 317.6	0	3.4				1	11	105	48	4	61	385	44.4925	1,900	2	3
Queue WBT4	Local	'AG'	2	624.8, 288.9	703.7, 317.6	0	3.4				4	11	105	48	4	61	2405	44.4925	5,447	2	3
Queue WBR	Local	'AG'	2	623.7, 292.0	703.7, 317.6	0	3.4				1	11	105	105	4	4	300	44.4925	1,900	2	3
Departure WB	Ramp	'AG'	1	607.7, 280.4	524.7, 243.2	0	16.1	34.6	3095	9.784											
Approach NB	Local	'AG'	1	617.0, 210.4	607.7, 280.4	0	12.7	30	1152	8.189											
Queue NBL	Local	'AG'	2	611.4, 269.6	617.0, 210.4	0	3.4				1	11	105	24	4	85	480	44.4925	203	2	3
Queue NBT2	Local	'AG'	2	614.7, 270.7	617.0, 210.4	0	3.4				2	11	105	57	5	53	672	44.4925	3,079	2	3
Departure NB	Local	'AG'	1	607.7, 280.4	600.9, 35.1	0	12.7	30	972	8.189											
Approach SB	Local	'AG'	1	600.9, 35.1	607.7, 280.4	0	12.7	30	1049	8.189											
Queue SBT2	Local	'AG'	2	604.6, 293.6	600.9, 35.1	0	3.4				2	11	105	33	5	77	839	44.4925	3,002	2	3
Queue SBR	Local	'AG'	2	600.2, 290.9	600.9, 35.1	0	3.4				1	11	105	105	5	5	210	44.4925	1,900	2	3
Departure SB	Local	'AG'	1	607.7, 280.4	617.0, 210.4	0	12.7	30	1224	8.189											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	9700	8.738											

Notes:
Morning has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

INTERSECTION 11: Canal at South State
YEAR 2029

Link	Road Type	Level	"1" Freeflow; "2" Queue	X1, Y1 Coordinates (m)	X2, Y2 Coordinates (m)	Source Height (m)	Mixing Zone Width (m)	Traffic Speed (mph)	Traffic Volume (veh/hr)	Emission Factor (g/mi)	Number of Travel Lanes	Lane Width (ft)	Avg. Signal Cycle Length (s)	Total Split (s)	Total Lost Time (s)	Avg. Red Time (s)	Approach Traffic Volume (veh/hr)	Idle Emission Factor (g/hr)	Saturation Flow Rate (veh/hr/lane)	Signal Type (actuated)	Arrival Rate (average)
Approach EB	Local	'AG'	1	525.0, 169.1	622.2, 211.1	0	17.0	30	3072	8.189											
Queue EBL	Local	'AG'	2	598.0, 211.5	525.0, 169.1	0	3.7				1	12	115	53	4	66	340	44.4925	1,593	2	3
Queue EBT3	Local	'AG'	2	598.9, 208.5	525.0, 169.1	0	3.7				3	12	115	53	4	66	2232	44.4925	4,439	2	3
Queue EBR	Local	'AG'	2	599.8, 202.5	525.0, 169.1	0	3.7				1	12	115	115	4	4	500	44.4925	1,900	2	3
Departure EB	Local	'AG'	1	622.2, 211.1	709.7, 253.5	0	17.0	30	1110	8.189											
Approach NB	Local	'AG'	1	661.1, 116.2	622.2, 211.1	0	13.0	30	1358	8.189											
Queue NBT2	Local	'AG'	2	611.4, 169.6	661.1, 116.2	0	3.4				2	11	115	54	4	65	966	44.4925	2,848	2	3
Queue NBR	Local	'AG'	2	617.6, 272.0	661.1, 116.2	0	3.7				1	12	115	115	4	4	392	44.4925	1,900	2	3
Departure NB	Local	'AG'	1	622.2, 211.1	612.9, 283.0	0	13.0	30	1306	8.189											
Approach SB	Local	'AG'	1	612.9, 283.0	622.2, 211.1	0	13.0	30	1184	8.189											
Queue SBL	Local	'AG'	2	604.6, 293.6	612.9, 283.0	0	3.7				1	12	115	8	4	111	360	44.4925	1,900	2	3
Queue SBT2	Local	'AG'	2	600.2, 290.9	612.9, 283.0	0	3.4				2	11	115	62	4	57	824	44.4925	1,580	2	3
Departure SB	Local	'AG'	1	622.2, 211.1	661.1, 116.2	0	13.0	30	1324	8.189											
Exit 7 On-Ramp	Ramp	'AG'	1	622.2, 211.1	709.7, 253.5	0	9.1	34.6	1874	9.784											
I-95 Overpass	Exp	'BR'	1	526.6, 207.8	725.4, 295.7	8	130	55	10200	8.738											

Notes:
Afternoon has peak volumes
I-95 Overpass segment includes traffic volumes from both directions

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'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 3 ID 1'    -18.1    4.8    1.8
'REC INT 3 ID 2'    -18.3    -15.5    1.8
'REC INT 3 ID 3'    15.4    12.5    1.8
'REC INT 3 ID 4'    16.4    -6.1    1.8
'REC INT 3 ID 5'    -70.4    -37.2    1.8
'REC INT 3 ID 6'    -13.9    67.8    1.8
'REC INT 3 ID 7'    9.9    67.5    1.8
'REC INT 3 ID 8'    67.6    32.6    1.8
'INT 3: Washington & North State 2009'   14   1  1  'C'
1
'Approach WB'    'AG'    113.7     40.8    0.2     -0.3    950.    11.73    0.
18.191
2
'Queue WBL'    'AG'    13.5     -0.7    113.7     40.8    0.    3.6574    1
115   76   5   150   66.945   1438   2   3
2
'Queue WBT'    'AG'    13.5     2.8    113.7     40.8    0.    3.6574    1
115   76   5   250   66.945   1513   2   3
2
'Queue WBR'    'AG'    13.1     7.3    113.7     40.8    0.    4.8765    1
115   76   5   550   66.945   1458   2   3
1
'Departure WB'    'AG'    0.2     -0.3    -74.1     -30.8    1150.    14.972    0.
 18.191
1
'Approach NB'    'AG'    -0.2     -62.4    5.9     0.6    1170.    11.73    0.
12.705
2
'Queue NBL'    'AG'    3.3     -6.6    5.9     0.6    0.    3.3526    1
115   97   4   300   66.945   1468   2   3
2
'Queue NBT2'    'AG'    11.0     -4.9    5.9     0.6    0.    3.3526    2
115   49   5   870   66.945   2935   2   3
1
'Departure NB'    'AG'    5.9     0.6    5.9     68.0    1420.    11.73    0.
12.705
1
'Approach SB'    'AG'    -6.9     67.8    -6.3     -0.5    1150.    11.73    0.
13.314
2
'Queue SBT2'    'AG'    -3.4     7.1    -6.9     67.8    0.    3.6574    2
115   71   5   820   66.945   3124   2   3
2
'Queue SBR'    'AG'    -4.5     6.7    -6.9     67.8    0.    3.6574    1
115   71   5   630   66.945   1398   2   3
1
'Departure SB'    'AG'    -6.3     -0.5    2.0     -81.8    970.    11.73    0.
13.314
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    12.524
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 3: Washington & North State 2009

DATE : 1/21/10
TIME : 16:57:17

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
		X1	Y1	X2	Y2										
1. Approach WB	*	113.7	40.8	0.2	-0.3	*	121.	250.	AG	950.	11.7	0.0	18.2		
2. Queue WBL	*	13.5	-0.7	31.1	6.6	*	19.	68.	AG	119.	100.0	0.0	3.7	0.38	3.2
3. Queue WBT	*	13.5	2.8	43.1	14.0	*	32.	69.	AG	119.	100.0	0.0	3.7	0.59	5.3
4. Queue WBR	*	13.1	7.3	519.7	176.0	*	534.	72.	AG	119.	100.0	0.0	4.9	1.36	89.0
5. Departure WB	*	0.2	-0.3	-74.1	-30.8	*	80.	248.	AG	1150.	15.0	0.0	18.2		
6. Approach NB	*	-0.2	-62.4	5.9	0.6	*	63.	6.	AG	1170.	11.7	0.0	12.7		
7. Queue NBL	*	3.3	-6.6	178.7	479.2	*	517.	20.	AG	151.	100.0	0.0	3.4	1.96	86.1
8. Queue NBT2	*	11.0	-4.9	-13.2	21.1	*	36.	317.	AG	153.	100.0	0.0	3.4	0.29	5.9
9. Departure NB	*	5.9	0.6	5.9	68.0	*	67.	360.	AG	1420.	11.7	0.0	12.7		
10. Approach SB	*	-6.9	67.8	-6.3	-0.5	*	68.	179.	AG	1150.	11.7	0.0	13.3		
11. Queue SBT2	*	-3.4	7.1	-6.2	55.5	*	49.	357.	AG	222.	100.0	0.0	3.7	0.41	8.1
12. Queue SBR	*	-4.5	6.7	-30.0	655.7	*	649.	358.	AG	111.	100.0	0.0	3.7	1.40	108.2
13. Departure SB	*	-6.3	-0.5	2.0	-81.8	*	82.	174.	AG	970.	11.7	0.0	13.3		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 3: Washington & North State 2009

DATE : 1/21/10
TIME : 16:57:17

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	115	76	5.0	150	1438	66.94	2	3
3. Queue WBT	*	115	76	5.0	250	1513	66.94	2	3
4. Queue WBR	*	115	76	5.0	550	1458	66.94	2	3
7. Queue NBL	*	115	97	4.0	300	1468	66.94	2	3
8. Queue NBT2	*	115	49	5.0	870	2935	66.94	2	3
11. Queue SBT2	*	115	71	5.0	820	3124	66.94	2	3
12. Queue SBR	*	115	71	5.0	630	1398	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 3 ID 1	*	-18.1	4.8	1.8	*
2. REC INT 3 ID 2	*	-18.3	-15.5	1.8	*
3. REC INT 3 ID 3	*	15.4	12.5	1.8	*
4. REC INT 3 ID 4	*	16.4	-6.1	1.8	*
5. REC INT 3 ID 5	*	-70.4	-37.2	1.8	*
6. REC INT 3 ID 6	*	-13.9	67.8	1.8	*
7. REC INT 3 ID 7	*	9.9	67.5	1.8	*
8. REC INT 3 ID 8	*	67.6	32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 3: Washington & North State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	0.6	1.4	1.1	1.9	0.7	0.3	0.1	0.1
10.	1.2	1.9	0.9	1.7	0.9	0.4	0.2	0.1
20.	1.5	2.2	0.8	1.7	1.1	0.4	0.2	0.1
30.	1.7	2.4	0.6	1.7	1.4	0.4	0.2	0.1
40.	1.9	2.6	0.6	1.7	2.0	0.4	0.2	0.1
50.	2.1	2.8	0.9	1.9	2.3	0.4	0.2	0.2
60.	2.5	2.9	1.5	1.8	2.6	0.4	0.2	0.6
70.	2.9	2.9	2.0	1.6	2.5	0.4	0.2	0.9
80.	3.0	2.2	2.2	1.2	2.2	0.7	0.4	1.1
90.	3.1	2.0	2.3	1.1	1.8	1.1	0.5	1.3
100.	2.9	1.7	2.3	1.0	1.5	1.4	0.7	1.3
110.	2.4	1.6	2.3	1.0	1.2	1.7	1.0	1.4
120.	2.3	1.5	2.1	0.9	1.0	1.9	1.2	1.4
130.	2.0	1.5	2.2	0.8	0.9	2.2	1.3	1.5
140.	2.0	1.4	2.0	0.8	0.8	2.5	1.5	1.4
150.	2.0	1.3	2.0	0.8	0.8	2.6	1.6	1.5
160.	1.9	1.1	2.0	0.8	0.7	3.0	1.8	1.5
170.	1.7	1.1	2.1	0.8	0.7	2.8	2.1	1.5
180.	1.7	0.9	2.2	1.0	0.6	2.2	2.6	1.6
190.	1.5	0.9	2.6	1.1	0.4	1.5	2.9	1.7
200.	1.6	1.0	2.9	1.5	0.3	0.9	2.9	1.8
210.	1.6	1.0	3.1	1.6	0.3	0.8	2.5	2.0
220.	1.5	1.0	3.1	1.6	0.2	0.4	2.1	2.5
230.	1.4	1.0	3.1	1.7	0.1	0.3	1.8	2.6
240.	1.3	1.2	3.1	1.8	0.1	0.1	1.3	2.7
250.	1.0	1.4	3.2	2.0	0.0	0.0	1.0	2.5
260.	0.7	1.4	2.8	2.2	0.0	0.0	0.7	1.9
270.	0.5	1.4	2.4	2.1	0.1	0.0	0.5	1.2
280.	0.2	1.2	2.1	2.2	0.1	0.0	0.4	1.0
290.	0.2	1.0	2.0	2.2	0.1	0.0	0.3	0.8
300.	0.1	0.9	1.9	2.4	0.1	0.0	0.2	0.5
310.	0.1	0.7	1.7	2.4	0.1	0.0	0.3	0.4
320.	0.1	0.7	1.8	2.2	0.3	0.0	0.3	0.3
330.	0.0	0.7	1.7	2.4	0.5	0.0	0.3	0.3
340.	0.0	0.8	1.6	2.5	0.7	0.1	0.2	0.3
350.	0.2	1.0	1.5	2.1	0.6	0.2	0.2	0.2
360.	0.6	1.4	1.1	1.9	0.7	0.3	0.1	0.1
MAX	3.1	2.9	3.2	2.5	2.6	3.0	2.9	2.7
DEGR.	90	60	250	340	60	160	190	240

THE HIGHEST CONCENTRATION OF 3.20 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 3: Washington & North State 2009

DATE : 1/21/10
TIME : 16:57:17

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	REC1 90	REC2 60	REC3 250	REC4 340	REC5 60	REC6 160	REC7 190	REC8 240
1	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.5
2	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.0
3	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1
4	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.3
5	0.2	0.5	0.4	0.0	0.8	0.0	0.1	0.1
6	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
7	0.1	0.1	0.4	0.3	0.1	0.1	0.1	0.1
8	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.0
9	0.2	0.1	0.4	0.5	0.1	0.3	0.9	0.1
10	0.3	0.0	0.2	0.2	0.1	0.6	0.2	0.0
11	0.1	0.0	0.1	0.2	0.0	0.4	0.2	0.0
12	0.1	0.0	0.1	0.2	0.0	0.3	0.1	0.0
13	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.1
14	1.1	1.1	1.0	0.3	1.3	0.9	1.0	1.3

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 3 ID 1'    -18.1    4.8    1.8
'REC INT 3 ID 2'    -18.3    -15.5    1.8
'REC INT 3 ID 3'    15.4    12.5    1.8
'REC INT 3 ID 4'    16.4    -6.1    1.8
'REC INT 3 ID 5'    -70.4    -37.2    1.8
'REC INT 3 ID 6'    -13.9    67.8    1.8
'REC INT 3 ID 7'    9.9    67.5    1.8
'REC INT 3 ID 8'    67.6    32.6    1.8
'INT 3: Wash & N. State 2012 Build'   14   1  1  'C'
1
'Approach WB'    'AG'    113.7     40.8    0.2     -0.3    1124.    10.15    0.
18.191
2
'Queue WBL'    'AG'    13.5     -0.7    113.7     40.8    0.    3.6574    1
115   76   5   156   56.345   1438   2   3
2
'Queue WBT'    'AG'    13.5     2.8    113.7     40.8    0.    3.6574    1
115   76   5   283   56.345   1513   2   3
2
'Queue WBR'    'AG'    13.1     7.3    113.7     40.8    0.    4.8765    1
115   76   5   685   56.345   1458   2   3
1
'Departure WB'    'AG'    0.2     -0.3    -74.1     -30.8    1365.    12.574    0.
 18.191
1
'Approach NB'    'AG'    -0.2     -62.4    5.9     0.6    1694.    10.15    0.
12.705
2
'Queue NBL'    'AG'    3.3     -6.6    5.9     0.6    0.    3.3526    1
115   97   4   434   56.345   1468   2   3
2
'Queue NBT2'    'AG'    11.0     -4.9    5.9     0.6    0.    3.3526    2
115   49   5   1260   56.345   2935   2   3
1
'Departure NB'    'AG'    5.9     0.6    5.9     68.0    1945.    10.15    0.
12.705
1
'Approach SB'    'AG'    -6.9     67.8    -6.3     -0.5    1872.    10.15    0.
13.314
2
'Queue SBT2'    'AG'    -3.4     7.1    -6.9     67.8    0.    3.6574    2
115   71   5   1224   56.345   3124   2   3
2
'Queue SBR'    'AG'    -4.5     6.7    -6.9     67.8    0.    3.6574    1
115   71   5   648   56.345   1398   2   3
1
'Departure SB'    'AG'    -6.3     -0.5    2.0     -81.8    1380.    10.15    0.
13.314
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:16

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	*	113.7	40.8	0.2	-0.3	*	121.	250.	AG	1124.	10.1	0.0	18.2		
2. Queue WBL	*	13.5	-0.7	31.8	6.9	*	20.	68.	AG	100.	100.0	0.0	3.7	0.39	3.3
3. Queue WBT	*	13.5	2.8	47.0	15.5	*	36.	69.	AG	100.	100.0	0.0	3.7	0.67	6.0
4. Queue WBR	*	13.1	7.3	927.0	311.6	*	963.	72.	AG	100.	100.0	0.0	4.9	1.69	160.5
5. Departure WB	*	0.2	-0.3	-74.1	-30.8	*	80.	248.	AG	1365.	12.6	0.0	18.2		
6. Approach NB	*	-0.2	-62.4	5.9	0.6	*	63.	6.	AG	1694.	10.1	0.0	12.7		
7. Queue NBL	*	3.3	-6.6	326.7	889.1	*	952.	20.	AG	127.	100.0	0.0	3.4	2.84	158.7
8. Queue NBT2	*	11.0	-4.9	-24.0	32.8	*	51.	317.	AG	129.	100.0	0.0	3.4	0.42	8.6
9. Departure NB	*	5.9	0.6	5.9	68.0	*	67.	360.	AG	1945.	10.1	0.0	12.7		
10. Approach SB	*	-6.9	67.8	-6.3	-0.5	*	68.	179.	AG	1872.	10.1	0.0	13.3		
11. Queue SBT2	*	-3.4	7.1	-7.6	79.4	*	72.	357.	AG	187.	100.0	0.0	3.7	0.61	12.1
12. Queue SBR	*	-4.5	6.7	-32.2	712.7	*	707.	358.	AG	93.	100.0	0.0	3.7	1.44	117.8
13. Departure SB	*	-6.3	-0.5	2.0	-81.8	*	82.	174.	AG	1380.	10.1	0.0	13.3		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:16

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	115	76	5.0	156	1438	56.35	2	3
3. Queue WBT	*	115	76	5.0	283	1513	56.35	2	3
4. Queue WBR	*	115	76	5.0	685	1458	56.35	2	3
7. Queue NBL	*	115	97	4.0	434	1468	56.35	2	3
8. Queue NBT2	*	115	49	5.0	1260	2935	56.35	2	3
11. Queue SBT2	*	115	71	5.0	1224	3124	56.35	2	3
12. Queue SBR	*	115	71	5.0	648	1398	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 3 ID 1	*	-18.1	4.8	1.8	*
2. REC INT 3 ID 2	*	-18.3	-15.5	1.8	*
3. REC INT 3 ID 3	*	15.4	12.5	1.8	*
4. REC INT 3 ID 4	*	16.4	-6.1	1.8	*
5. REC INT 3 ID 5	*	-70.4	-37.2	1.8	*
6. REC INT 3 ID 6	*	-13.9	67.8	1.8	*
7. REC INT 3 ID 7	*	9.9	67.5	1.8	*
8. REC INT 3 ID 8	*	67.6	32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	0.7	1.6	1.0	2.0	0.7	0.3	0.1	0.1
10.	1.3	2.0	0.8	1.6	0.8	0.4	0.1	0.1
20.	1.7	2.3	0.8	1.6	1.1	0.6	0.2	0.1
30.	2.0	2.5	0.5	1.5	1.6	0.7	0.2	0.1
40.	2.1	2.5	0.5	1.6	1.9	0.7	0.2	0.1
50.	2.1	2.6	0.8	1.7	2.2	0.8	0.2	0.2
60.	2.3	2.9	1.3	1.6	2.6	0.8	0.2	0.4
70.	2.8	2.7	1.7	1.5	2.3	0.8	0.2	0.9
80.	3.0	2.2	1.9	1.1	2.0	1.2	0.4	1.1
90.	2.8	1.9	2.1	0.9	1.6	1.5	0.4	1.2
100.	2.7	1.7	2.1	0.9	1.3	2.0	0.6	1.2
110.	2.5	1.6	2.1	0.8	1.1	2.2	0.8	1.2
120.	2.2	1.5	2.0	0.7	0.9	2.4	1.0	1.3
130.	2.0	1.6	1.8	0.7	0.8	2.7	1.1	1.4
140.	2.1	1.4	1.8	0.7	0.7	2.9	1.4	1.2
150.	2.0	1.3	1.8	0.7	0.7	2.9	1.5	1.3
160.	1.9	1.2	1.8	0.6	0.6	3.2	1.7	1.4
170.	1.7	1.0	1.8	0.7	0.6	2.8	2.1	1.3
180.	1.6	0.8	2.1	0.9	0.5	2.3	2.5	1.4
190.	1.4	0.8	2.6	1.2	0.4	1.6	3.1	1.6
200.	1.4	0.9	2.7	1.4	0.3	0.9	2.9	1.6
210.	1.5	0.9	2.9	1.7	0.2	0.7	2.6	2.0
220.	1.4	0.9	3.2	1.7	0.1	0.5	2.4	2.3
230.	1.3	0.9	3.3	1.7	0.1	0.2	1.9	2.3
240.	1.2	1.1	3.1	1.8	0.0	0.1	1.5	2.6
250.	0.9	1.3	3.0	2.0	0.0	0.0	1.2	2.3
260.	0.6	1.3	2.6	2.1	0.0	0.0	1.1	1.8
270.	0.4	1.3	2.4	2.2	0.1	0.0	0.9	1.2
280.	0.2	1.1	2.0	2.0	0.1	0.0	0.7	0.9
290.	0.1	0.9	2.0	2.3	0.1	0.0	0.6	0.7
300.	0.1	0.8	1.9	2.5	0.1	0.0	0.5	0.7
310.	0.1	0.7	1.7	2.4	0.1	0.0	0.4	0.3
320.	0.1	0.7	1.7	2.3	0.2	0.0	0.2	0.3
330.	0.0	0.7	1.8	2.3	0.5	0.0	0.3	0.3
340.	0.1	0.7	1.8	2.6	0.6	0.1	0.2	0.3
350.	0.4	1.1	1.5	2.0	0.6	0.2	0.2	0.1
360.	0.7	1.6	1.0	2.0	0.7	0.3	0.1	0.1
MAX	3.0	2.9	3.3	2.6	2.6	3.2	3.1	2.6
DEGR.	80	60	230	340	60	160	190	240

THE HIGHEST CONCENTRATION OF 3.30 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:16

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 60	REC3 230	REC4 340	REC5 60	REC6 160	REC7 190	REC8 240
1	*	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.5
2	*	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
3	*	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1
4	*	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.3
5	*	0.2	0.5	0.4	0.0	0.8	0.0	0.1	0.1
6	*	0.0	0.2	0.2	0.0	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.1
8	*	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.0
9	*	0.3	0.1	0.5	0.6	0.1	0.3	1.1	0.1
10	*	0.5	0.1	0.1	0.3	0.1	0.9	0.3	0.1
11	*	0.1	0.0	0.0	0.2	0.0	0.5	0.2	0.0
12	*	0.1	0.0	0.0	0.2	0.0	0.2	0.1	0.0
13	*	0.0	0.3	0.2	0.0	0.1	0.1	0.1	0.1
14	*	0.9	0.9	0.9	0.3	1.1	0.8	0.8	1.1

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 3 ID 1'    -18.1    4.8    1.8
'REC INT 3 ID 2'    -18.3    -15.5    1.8
'REC INT 3 ID 3'    15.4    12.5    1.8
'REC INT 3 ID 4'    16.4    -6.1    1.8
'REC INT 3 ID 5'    -70.4    -37.2    1.8
'REC INT 3 ID 6'    -13.9    67.8    1.8
'REC INT 3 ID 7'    9.9    67.5    1.8
'REC INT 3 ID 8'    67.6    32.6    1.8
'INT 3: Wash & N. State 2012 No-Build'   14   1  1  'C'
1
'Approach WB'    'AG'    113.7     40.8    0.2     -0.3    1124.    10.15    0.
18.191
2
'Queue WBL'    'AG'    13.5     -0.7    113.7     40.8    0.    3.6574    1
115   76   5   156   56.345   1438   2   3
2
'Queue WBT'    'AG'    13.5     2.8    113.7     40.8    0.    3.6574    1
115   76   5   283   56.345   1513   2   3
2
'Queue WBR'    'AG'    13.1     7.3    113.7     40.8    0.    4.8765    1
115   76   5   685   56.345   1458   2   3
1
'Departure WB'    'AG'    0.2     -0.3    -74.1     -30.8    1364.    12.574    0.
 18.191
1
'Approach NB'    'AG'    -0.2     -62.4    5.9     0.6    1685.    10.15    0.
12.705
2
'Queue NBL'    'AG'    3.3     -6.6    5.9     0.6    0.    3.3526    1
115   97   4   433   56.345   1468   2   3
2
'Queue NBT2'    'AG'    11.0     -4.9    5.9     0.6    0.    3.3526    2
115   49   5   1252   56.345   2935   2   3
1
'Departure NB'    'AG'    5.9     0.6    5.9     68.0    1937.    10.15    0.
12.705
1
'Approach SB'    'AG'    -6.9     67.8    -6.3     -0.5    1869.    10.15    0.
13.314
2
'Queue SBT2'    'AG'    -3.4     7.1    -6.9     67.8    0.    3.6574    2
115   71   5   1221   56.345   3124   2   3
2
'Queue SBR'    'AG'    -4.5     6.7    -6.9     67.8    0.    3.6574    1
115   71   5   648   56.345   1398   2   3
1
'Departure SB'    'AG'    -6.3     -0.5    2.0     -81.8    1377.    10.15    0.
13.314
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:23

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	*	113.7	40.8	0.2	-0.3	*	121.	250.	AG	1124.	10.1	0.0	18.2		
2. Queue WBL	*	13.5	-0.7	31.8	6.9	*	20.	68.	AG	100.	100.0	0.0	3.7	0.39	3.3
3. Queue WBT	*	13.5	2.8	47.0	15.5	*	36.	69.	AG	100.	100.0	0.0	3.7	0.67	6.0
4. Queue WBR	*	13.1	7.3	927.0	311.6	*	963.	72.	AG	100.	100.0	0.0	4.9	1.69	160.5
5. Departure WB	*	0.2	-0.3	-74.1	-30.8	*	80.	248.	AG	1364.	12.6	0.0	18.2		
6. Approach NB	*	-0.2	-62.4	5.9	0.6	*	63.	6.	AG	1685.	10.1	0.0	12.7		
7. Queue NBL	*	3.3	-6.6	325.6	886.0	*	949.	20.	AG	127.	100.0	0.0	3.4	2.83	158.2
8. Queue NBT2	*	11.0	-4.9	-23.8	32.6	*	51.	317.	AG	129.	100.0	0.0	3.4	0.42	8.5
9. Departure NB	*	5.9	0.6	5.9	68.0	*	67.	360.	AG	1937.	10.1	0.0	12.7		
10. Approach SB	*	-6.9	67.8	-6.3	-0.5	*	68.	179.	AG	1869.	10.1	0.0	13.3		
11. Queue SBT2	*	-3.4	7.1	-7.6	79.2	*	72.	357.	AG	187.	100.0	0.0	3.7	0.61	12.0
12. Queue SBR	*	-4.5	6.7	-32.2	712.7	*	707.	358.	AG	93.	100.0	0.0	3.7	1.44	117.8
13. Departure SB	*	-6.3	-0.5	2.0	-81.8	*	82.	174.	AG	1377.	10.1	0.0	13.3		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:23

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	115	76	5.0	156	1438	56.35	2	3
3. Queue WBT	115	76	5.0	283	1513	56.35	2	3
4. Queue WBR	115	76	5.0	685	1458	56.35	2	3
7. Queue NBL	115	97	4.0	433	1468	56.35	2	3
8. Queue NBT2	115	49	5.0	1252	2935	56.35	2	3
11. Queue SBT2	115	71	5.0	1221	3124	56.35	2	3
12. Queue SBR	115	71	5.0	648	1398	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC INT 3 ID 1	-18.1	4.8	1.8
2. REC INT 3 ID 2	-18.3	-15.5	1.8
3. REC INT 3 ID 3	15.4	12.5	1.8
4. REC INT 3 ID 4	16.4	-6.1	1.8
5. REC INT 3 ID 5	-70.4	-37.2	1.8
6. REC INT 3 ID 6	-13.9	67.8	1.8
7. REC INT 3 ID 7	9.9	67.5	1.8
8. REC INT 3 ID 8	67.6	32.6	1.8

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	0.7	1.6	1.0	2.0	0.7	0.3	0.1	0.1
10.	1.3	2.0	0.8	1.6	0.8	0.4	0.1	0.1
20.	1.7	2.3	0.8	1.6	1.1	0.6	0.2	0.1
30.	2.0	2.5	0.5	1.5	1.6	0.7	0.2	0.1
40.	2.1	2.5	0.5	1.6	1.9	0.7	0.2	0.1
50.	2.1	2.6	0.8	1.7	2.2	0.8	0.2	0.2
60.	2.3	2.9	1.3	1.6	2.6	0.8	0.2	0.4
70.	2.8	2.7	1.7	1.5	2.3	0.8	0.2	0.9
80.	3.0	2.2	1.9	1.1	2.0	1.2	0.4	1.1
90.	2.8	1.9	2.1	0.9	1.6	1.5	0.4	1.2
100.	2.7	1.7	2.1	0.9	1.3	2.0	0.5	1.2
110.	2.5	1.6	2.1	0.8	1.1	2.2	0.8	1.2
120.	2.2	1.5	2.0	0.7	0.9	2.3	1.0	1.3
130.	2.0	1.6	1.8	0.7	0.8	2.7	1.1	1.4
140.	2.1	1.4	1.8	0.7	0.7	2.9	1.4	1.2
150.	2.0	1.3	1.8	0.7	0.7	2.9	1.5	1.3
160.	1.9	1.2	1.8	0.6	0.6	3.2	1.7	1.4
170.	1.7	1.0	1.8	0.7	0.6	2.8	2.0	1.3
180.	1.6	0.8	2.0	0.9	0.5	2.3	2.5	1.4
190.	1.4	0.8	2.6	1.2	0.4	1.6	3.1	1.6
200.	1.4	0.9	2.7	1.4	0.3	0.9	2.9	1.6
210.	1.5	0.9	2.9	1.7	0.2	0.7	2.6	2.0
220.	1.4	0.9	3.2	1.7	0.1	0.5	2.4	2.3
230.	1.3	0.9	3.2	1.7	0.1	0.2	1.9	2.3
240.	1.2	1.1	3.1	1.8	0.0	0.1	1.5	2.6
250.	0.9	1.3	3.0	2.0	0.0	0.0	1.2	2.3
260.	0.6	1.3	2.6	2.1	0.0	0.0	1.1	1.8
270.	0.4	1.3	2.4	2.2	0.1	0.0	0.9	1.2
280.	0.2	1.1	2.0	2.0	0.1	0.0	0.7	0.9
290.	0.1	0.9	1.8	2.3	0.1	0.0	0.6	0.7
300.	0.1	0.8	1.9	2.5	0.1	0.0	0.4	0.7
310.	0.1	0.7	1.7	2.4	0.1	0.0	0.3	0.3
320.	0.1	0.7	1.7	2.3	0.2	0.0	0.2	0.3
330.	0.0	0.7	1.8	2.3	0.5	0.0	0.3	0.3
340.	0.1	0.7	1.8	2.6	0.6	0.1	0.2	0.3
350.	0.3	1.1	1.4	2.0	0.6	0.2	0.2	0.1
360.	0.7	1.6	1.0	2.0	0.7	0.3	0.1	0.1
MAX	3.0	2.9	3.2	2.6	2.6	3.2	3.1	2.6
DEGR.	80	60	220	340	60	160	190	240

THE HIGHEST CONCENTRATION OF 3.20 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:23

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 60	REC3 220	REC4 340	REC5 60	REC6 160	REC7 190	REC8 240
1	*	0.3	0.3	0.4	0.3	0.1	0.1	0.1	0.5
2	*	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
3	*	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1
4	*	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.3
5	*	0.2	0.5	0.2	0.0	0.8	0.0	0.1	0.1
6	*	0.0	0.2	0.3	0.0	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
8	*	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.0
9	*	0.3	0.1	0.4	0.6	0.1	0.3	1.1	0.1
10	*	0.5	0.1	0.1	0.3	0.1	0.9	0.3	0.1
11	*	0.1	0.0	0.0	0.2	0.0	0.5	0.2	0.0
12	*	0.1	0.0	0.0	0.2	0.0	0.2	0.1	0.0
13	*	0.0	0.3	0.2	0.0	0.1	0.1	0.1	0.1
14	*	0.9	0.9	1.0	0.3	1.1	0.8	0.8	1.1

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 3 ID 1'    -18.1    4.8    1.8
'REC INT 3 ID 2'    -18.3    -15.5    1.8
'REC INT 3 ID 3'    15.4    12.5    1.8
'REC INT 3 ID 4'    16.4    -6.1    1.8
'REC INT 3 ID 5'    -70.4    -37.2    1.8
'REC INT 3 ID 6'    -13.9    67.8    1.8
'REC INT 3 ID 7'    9.9    67.5    1.8
'REC INT 3 ID 8'    67.6    32.6    1.8
'INT 3: Wash & N. State 2029 Build'   14   1  1  'C'
1
'Approach WB'    'AG'    113.7     40.8    0.2     -0.3    1300.    8.189    0.
18.191
2
'Queue WBL'    'AG'    13.5     -0.7    113.7     40.8    0.    3.6574    1
115   76   5   180   44.4925   1438   2   3
2
'Queue WBT'    'AG'    13.5     2.8    113.7     40.8    0.    3.6574    1
115   76   5   330   44.4925   1513   2   3
2
'Queue WBR'    'AG'    13.1     7.3    113.7     40.8    0.    4.8765    1
115   76   5   790   44.4925   1458   2   3
1
'Departure WB'    'AG'    0.2     -0.3    -74.1     -30.8    1581.    9.784    0.
18.191
1
'Approach NB'    'AG'    -0.2     -62.4    5.9     0.6    1949.    8.189    0.
12.705
2
'Queue NBL'    'AG'    3.3     -6.6    5.9     0.6    0.    3.3526    1
115   97   4   501   44.4925   1468   2   3
2
'Queue NBT2'    'AG'    11.0     -4.9    5.9     0.6    0.    3.3526    2
115   49   5   1448   44.4925   2935   2   3
1
'Departure NB'    'AG'    5.9     0.6    5.9     68.0    2238.    8.189    0.
12.705
1
'Approach SB'    'AG'    -6.9     67.8    -6.3     -0.5    2153.    8.189    0.
13.314
2
'Queue SBT2'    'AG'    -3.4     7.1    -6.9     67.8    0.    3.6574    2
115   71   5   1403   44.4925   3124   2   3
2
'Queue SBR'    'AG'    -4.5     6.7    -6.9     67.8    0.    3.6574    1
115   71   5   750   44.4925   1398   2   3
1
'Departure SB'    'AG'    -6.3     -0.5    2.0     -81.8    1583.    8.189    0.
13.314
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 Build

DATE : 1/22/10
TIME : 15:50:23

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	*	113.7	40.8	0.2	-0.3	*	121.	250.	AG	1300.	8.2	0.0	18.2		
2. Queue WBL	*	13.5	-0.7	34.6	8.0	*	23.	68.	AG	79.	100.0	0.0	3.7	0.45	3.8
3. Queue WBT	*	13.5	2.8	52.6	17.6	*	42.	69.	AG	79.	100.0	0.0	3.7	0.78	7.0
4. Queue WBR	*	13.1	7.3	1243.7	417.1	*	1297.	72.	AG	79.	100.0	0.0	4.9	1.95	216.2
5. Departure WB	*	0.2	-0.3	-74.1	-30.8	*	80.	248.	AG	1581.	9.8	0.0	18.2		
6. Approach NB	*	-0.2	-62.4	5.9	0.6	*	63.	6.	AG	1949.	8.2	0.0	12.7		
7. Queue NBL	*	3.3	-6.6	400.7	1094.0	*	1170.	20.	AG	101.	100.0	0.0	3.4	3.27	195.0
8. Queue NBT2	*	11.0	-4.9	-29.2	38.5	*	59.	317.	AG	102.	100.0	0.0	3.4	0.48	9.9
9. Departure NB	*	5.9	0.6	5.9	68.0	*	67.	360.	AG	2238.	8.2	0.0	12.7		
10. Approach SB	*	-6.9	67.8	-6.3	-0.5	*	68.	179.	AG	2153.	8.2	0.0	13.3		
11. Queue SBT2	*	-3.4	7.1	-8.2	89.9	*	83.	357.	AG	147.	100.0	0.0	3.7	0.70	13.8
12. Queue SBR	*	-4.5	6.7	-44.9	1035.7	*	1030.	358.	AG	74.	100.0	0.0	3.7	1.67	171.6
13. Departure SB	*	-6.3	-0.5	2.0	-81.8	*	82.	174.	AG	1583.	8.2	0.0	13.3		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 Build

DATE : 1/22/10
TIME : 15:50:23

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	115	76	5.0	180	1438	44.49	2	3
3. Queue WBT	*	115	76	5.0	330	1513	44.49	2	3
4. Queue WBR	*	115	76	5.0	790	1458	44.49	2	3
7. Queue NBL	*	115	97	4.0	501	1468	44.49	2	3
8. Queue NBT2	*	115	49	5.0	1448	2935	44.49	2	3
11. Queue SBT2	*	115	71	5.0	1403	3124	44.49	2	3
12. Queue SBR	*	115	71	5.0	750	1398	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 3 ID 1	*	-18.1	4.8	1.8	*
2. REC INT 3 ID 2	*	-18.3	-15.5	1.8	*
3. REC INT 3 ID 3	*	15.4	12.5	1.8	*
4. REC INT 3 ID 4	*	16.4	-6.1	1.8	*
5. REC INT 3 ID 5	*	-70.4	-37.2	1.8	*
6. REC INT 3 ID 6	*	-13.9	67.8	1.8	*
7. REC INT 3 ID 7	*	9.9	67.5	1.8	*
8. REC INT 3 ID 8	*	67.6	32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	0.6	1.3	0.9	1.6	0.6	0.3	0.1	0.1
10.	1.1	1.8	0.6	1.2	0.8	0.4	0.1	0.1
20.	1.4	2.0	0.6	1.3	0.9	0.6	0.1	0.1
30.	1.6	2.2	0.5	1.3	1.3	0.6	0.2	0.1
40.	1.5	2.2	0.5	1.4	1.6	0.6	0.2	0.1
50.	1.7	2.2	0.7	1.4	1.9	0.7	0.1	0.2
60.	2.1	2.6	1.0	1.4	2.2	0.7	0.1	0.4
70.	2.4	2.3	1.5	1.2	2.0	0.7	0.1	0.7
80.	2.6	1.9	1.6	0.8	1.8	1.1	0.3	0.9
90.	2.5	1.7	1.6	0.8	1.4	1.4	0.4	1.0
100.	2.2	1.5	1.8	0.7	1.1	1.6	0.5	1.0
110.	2.2	1.4	1.8	0.7	0.9	1.9	0.8	1.0
120.	1.9	1.4	1.7	0.6	0.8	2.1	0.9	1.1
130.	1.7	1.3	1.6	0.6	0.7	2.3	1.0	1.1
140.	1.8	1.3	1.3	0.5	0.6	2.5	1.1	1.1
150.	1.8	1.1	1.4	0.5	0.5	2.4	1.3	1.1
160.	1.7	1.0	1.3	0.5	0.5	2.8	1.4	1.1
170.	1.5	0.8	1.4	0.5	0.5	2.5	1.7	1.2
180.	1.3	0.7	1.7	0.8	0.4	2.0	2.2	1.2
190.	1.1	0.7	2.3	1.1	0.3	1.4	2.6	1.2
200.	1.3	0.7	2.4	1.2	0.2	0.9	2.6	1.4
210.	1.2	0.7	2.4	1.4	0.2	0.6	2.4	1.7
220.	1.1	0.8	2.6	1.4	0.1	0.4	2.1	2.0
230.	1.1	0.8	2.5	1.5	0.1	0.2	1.6	2.0
240.	0.9	1.0	2.7	1.5	0.0	0.1	1.4	2.1
250.	0.8	1.1	2.6	1.7	0.0	0.0	1.1	1.9
260.	0.5	1.1	2.4	2.0	0.0	0.0	1.0	1.6
270.	0.3	1.1	2.0	2.0	0.1	0.0	0.8	0.9
280.	0.2	1.0	1.9	1.9	0.1	0.0	0.7	0.8
290.	0.1	0.9	1.8	1.9	0.1	0.0	0.6	0.7
300.	0.1	0.7	1.7	1.7	0.1	0.0	0.5	0.5
310.	0.1	0.7	1.7	2.2	0.1	0.0	0.4	0.2
320.	0.0	0.6	1.6	2.2	0.2	0.0	0.3	0.2
330.	0.0	0.7	1.6	2.2	0.3	0.0	0.3	0.2
340.	0.1	0.7	1.4	2.0	0.5	0.0	0.1	0.3
350.	0.3	1.0	1.1	1.8	0.6	0.1	0.1	0.1
360.	0.6	1.3	0.9	1.6	0.6	0.3	0.1	0.1
MAX	2.6	2.6	2.7	2.2	2.2	2.8	2.6	2.1
DEGR.	80	60	240	310	60	160	190	240

THE HIGHEST CONCENTRATION OF 2.80 PPM OCCURRED AT RECEPTOR REC6 .

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 Build

DATE : 1/22/10
TIME : 15:50:23

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 60	REC3 240	REC4 310	REC5 60	REC6 160	REC7 190	REC8 240
1	*	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.5
2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
4	*	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.2
5	*	0.2	0.4	0.4	0.1	0.7	0.0	0.1	0.1
6	*	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.3	0.2	0.0	0.1	0.1	0.0
8	*	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0
9	*	0.3	0.1	0.5	0.3	0.1	0.3	1.0	0.1
10	*	0.4	0.1	0.2	0.3	0.1	0.8	0.2	0.0
11	*	0.1	0.0	0.0	0.1	0.0	0.4	0.1	0.0
12	*	0.1	0.0	0.0	0.1	0.0	0.2	0.1	0.0
13	*	0.0	0.3	0.1	0.0	0.1	0.1	0.1	0.1
14	*	0.7	0.8	0.7	0.3	0.9	0.6	0.7	0.9

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 3 ID 1'    -18.1    4.8    1.8
'REC INT 3 ID 2'    -18.3    -15.5    1.8
'REC INT 3 ID 3'    15.4    12.5    1.8
'REC INT 3 ID 4'    16.4    -6.1    1.8
'REC INT 3 ID 5'    -70.4    -37.2    1.8
'REC INT 3 ID 6'    -13.9    67.8    1.8
'REC INT 3 ID 7'    9.9    67.5    1.8
'REC INT 3 ID 8'    67.6    32.6    1.8
'INT 3: Wash & N. State 2029 No-Build'   14   1  1  'C'
1
'Approach WB'    'AG'    113.7     40.8    0.2     -0.3    1300.    8.189    0.
18.191
2
'Queue WBL'    'AG'    13.5     -0.7    113.7     40.8    0.    3.6574    1
115   76   5   180   44.4925   1438   2   3
2
'Queue WBT'    'AG'    13.5     2.8    113.7     40.8    0.    3.6574    1
115   76   5   330   44.4925   1513   2   3
2
'Queue WBR'    'AG'    13.1     7.3    113.7     40.8    0.    4.8765    1
115   76   5   790   44.4925   1458   2   3
1
'Departure WB'    'AG'    0.2     -0.3    -74.1     -30.8    1580.    9.784    0.
18.191
1
'Approach NB'    'AG'    -0.2     -62.4    5.9     0.6    1940.    8.189    0.
12.705
2
'Queue NBL'    'AG'    3.3     -6.6    5.9     0.6    0.    3.3526    1
115   97   4   500   44.4925   1468   2   3
2
'Queue NBT2'    'AG'    11.0     -4.9    5.9     0.6    0.    3.3526    2
115   49   5   1440   44.4925   2935   2   3
1
'Departure NB'    'AG'    5.9     0.6    5.9     68.0    2230.    8.189    0.
12.705
1
'Approach SB'    'AG'    -6.9     67.8    -6.3     -0.5    2150.    8.189    0.
13.314
2
'Queue SBT2'    'AG'    -3.4     7.1    -6.9     67.8    0.    3.6574    2
115   71   5   1400   44.4925   3124   2   3
2
'Queue SBR'    'AG'    -4.5     6.7    -6.9     67.8    0.    3.6574    1
115   71   5   750   44.4925   1398   2   3
1
'Departure SB'    'AG'    -6.3     -0.5    2.0     -81.8    1580.    8.189    0.
13.314
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 7

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	*	113.7	40.8	0.2	-0.3	*	121.	250.	AG	1300.	8.2	0.0	18.2		
2. Queue WBL	*	13.5	-0.7	34.6	8.0	*	23.	68.	AG	79.	100.0	0.0	3.7	0.45	3.8
3. Queue WBT	*	13.5	2.8	52.6	17.6	*	42.	69.	AG	79.	100.0	0.0	3.7	0.78	7.0
4. Queue WBR	*	13.1	7.3	1243.7	417.1	*	1297.	72.	AG	79.	100.0	0.0	4.9	1.95	216.2
5. Departure WB	*	0.2	-0.3	-74.1	-30.8	*	80.	248.	AG	1580.	9.8	0.0	18.2		
6. Approach NB	*	-0.2	-62.4	5.9	0.6	*	63.	6.	AG	1940.	8.2	0.0	12.7		
7. Queue NBL	*	3.3	-6.6	399.6	1090.9	*	1167.	20.	AG	101.	100.0	0.0	3.4	3.27	194.5
8. Queue NBT2	*	11.0	-4.9	-29.0	38.2	*	59.	317.	AG	102.	100.0	0.0	3.4	0.48	9.8
9. Departure NB	*	5.9	0.6	5.9	68.0	*	67.	360.	AG	2230.	8.2	0.0	12.7		
10. Approach SB	*	-6.9	67.8	-6.3	-0.5	*	68.	179.	AG	2150.	8.2	0.0	13.3		
11. Queue SBT2	*	-3.4	7.1	-8.2	89.8	*	83.	357.	AG	147.	100.0	0.0	3.7	0.70	13.8
12. Queue SBR	*	-4.5	6.7	-44.9	1035.7	*	1030.	358.	AG	74.	100.0	0.0	3.7	1.67	171.6
13. Departure SB	*	-6.3	-0.5	2.0	-81.8	*	82.	174.	AG	1580.	8.2	0.0	13.3		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 7

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	115	76	5.0	180	1438	44.49	2	3
3. Queue WBT	*	115	76	5.0	330	1513	44.49	2	3
4. Queue WBR	*	115	76	5.0	790	1458	44.49	2	3
7. Queue NBL	*	115	97	4.0	500	1468	44.49	2	3
8. Queue NBT2	*	115	49	5.0	1440	2935	44.49	2	3
11. Queue SBT2	*	115	71	5.0	1400	3124	44.49	2	3
12. Queue SBR	*	115	71	5.0	750	1398	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 3 ID 1	*	-18.1	4.8	1.8	*
2. REC INT 3 ID 2	*	-18.3	-15.5	1.8	*
3. REC INT 3 ID 3	*	15.4	12.5	1.8	*
4. REC INT 3 ID 4	*	16.4	-6.1	1.8	*
5. REC INT 3 ID 5	*	-70.4	-37.2	1.8	*
6. REC INT 3 ID 6	*	-13.9	67.8	1.8	*
7. REC INT 3 ID 7	*	9.9	67.5	1.8	*
8. REC INT 3 ID 8	*	67.6	32.6	1.8	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	0.6	1.3	0.9	1.6	0.6	0.3	0.1	0.1
10.	1.1	1.8	0.6	1.2	0.8	0.4	0.1	0.1
20.	1.4	2.0	0.6	1.3	0.9	0.6	0.1	0.1
30.	1.6	2.2	0.5	1.3	1.3	0.6	0.2	0.1
40.	1.5	2.2	0.5	1.4	1.6	0.6	0.2	0.1
50.	1.7	2.2	0.7	1.4	1.9	0.7	0.1	0.2
60.	2.1	2.6	1.0	1.4	2.2	0.7	0.1	0.4
70.	2.4	2.3	1.5	1.2	2.0	0.7	0.1	0.7
80.	2.6	1.8	1.6	0.8	1.8	1.1	0.3	0.9
90.	2.5	1.7	1.6	0.8	1.4	1.4	0.4	1.0
100.	2.2	1.5	1.8	0.7	1.1	1.6	0.5	1.0
110.	2.1	1.4	1.8	0.7	0.9	1.9	0.8	1.0
120.	1.9	1.4	1.7	0.6	0.8	2.1	0.9	1.1
130.	1.7	1.3	1.6	0.6	0.7	2.3	1.0	1.1
140.	1.8	1.3	1.3	0.5	0.6	2.5	1.1	1.1
150.	1.8	1.1	1.4	0.5	0.5	2.4	1.3	1.1
160.	1.7	1.0	1.3	0.5	0.5	2.8	1.4	1.1
170.	1.5	0.8	1.4	0.5	0.5	2.5	1.6	1.2
180.	1.3	0.7	1.7	0.8	0.4	2.0	2.2	1.2
190.	1.1	0.7	2.3	1.1	0.3	1.4	2.6	1.2
200.	1.3	0.7	2.4	1.2	0.2	0.9	2.6	1.4
210.	1.2	0.7	2.4	1.4	0.2	0.6	2.4	1.7
220.	1.1	0.8	2.6	1.4	0.1	0.4	2.1	2.0
230.	1.1	0.8	2.5	1.5	0.1	0.2	1.6	2.0
240.	0.9	1.0	2.7	1.5	0.0	0.1	1.4	2.1
250.	0.8	1.1	2.6	1.7	0.0	0.0	1.1	1.9
260.	0.5	1.1	2.4	2.0	0.0	0.0	1.0	1.6
270.	0.3	1.1	2.0	2.0	0.1	0.0	0.8	0.9
280.	0.2	1.0	1.9	1.9	0.1	0.0	0.7	0.8
290.	0.1	0.9	1.8	1.8	0.1	0.0	0.6	0.7
300.	0.1	0.7	1.7	1.7	0.1	0.0	0.5	0.5
310.	0.1	0.7	1.7	2.2	0.1	0.0	0.4	0.2
320.	0.0	0.6	1.6	2.2	0.2	0.0	0.3	0.2
330.	0.0	0.7	1.6	2.2	0.3	0.0	0.3	0.2
340.	0.1	0.7	1.4	2.0	0.5	0.0	0.1	0.3
350.	0.3	1.0	1.1	1.8	0.6	0.1	0.1	0.1
360.	0.6	1.3	0.9	1.6	0.6	0.3	0.1	0.1
MAX	2.6	2.6	2.7	2.2	2.2	2.8	2.6	2.1
DEGR.	80	60	240	310	60	160	190	240

THE HIGHEST CONCENTRATION OF 2.80 PPM OCCURRED AT RECEPTOR REC6 .

JOB: Stamford Microscale EIE RUN: INT 3: Wash & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 7

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 60	REC3 240	REC4 310	REC5 60	REC6 160	REC7 190	REC8 240
1	*	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.5
2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
4	*	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.2
5	*	0.2	0.4	0.4	0.1	0.7	0.0	0.1	0.1
6	*	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.3	0.2	0.0	0.1	0.1	0.0
8	*	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0
9	*	0.3	0.1	0.5	0.3	0.1	0.3	1.0	0.1
10	*	0.4	0.1	0.2	0.3	0.1	0.8	0.2	0.0
11	*	0.1	0.0	0.0	0.1	0.0	0.4	0.1	0.0
12	*	0.1	0.0	0.0	0.1	0.0	0.2	0.1	0.0
13	*	0.0	0.3	0.1	0.0	0.1	0.1	0.1	0.1
14	*	0.7	0.8	0.7	0.3	0.9	0.6	0.7	0.9

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'Stamford Microscale EIE' 60. 321.  0. 0.  7  1.0  0  1
'REC INT 4 ID 1'    -14.7    -77.5    1.8
'REC INT 4 ID 2'    16    -55.8    1.8
'REC INT 4 ID 3'    19.9    -83.1    1.8
'REC INT 4 ID 4'    -19    -106.9    1.8
'REC INT 4 ID 5'    -17.2    -169.3    1.8
'REC INT 4 ID 6'    -70    -114.5    1.8
'REC INT 4 ID 7'    86.8    -32.6    1.8
'INT 4: Washington & South State 2009'   14   1  1  'C'
1
'Approach EB'    'AG'    -95.5     -136.9    8.2     -78.3    1020.    11.73    0.
 16.057
2
'Queue EBL'    'AG'    -13.6     -87.2    -95.5     -136.9    0.    3.3526    1
115   86   5   350   66.945   1454   2   3
2
'Queue EBT'    'AG'    -14.4     -92.7    -95.5     -136.9    0.    3.3526    1
115   86   5   550   66.945   1545   2   3
2
'Queue EBR'    'AG'    15.1     -98.4    -95.5     -136.9    0.    3.3526    1
115   86   5   120   66.945   1225   2   3
1
'Departure EB'    'AG'    8.2     -78.3    128.6     -20.2    1320.    11.73    0.
 16.057
1
'Approach NB'    'AG'    6.9     -151.5    13.4     -81.5    1070.    11.73    0.
12.705
2
'Queue NBT3'    'AG'    8.0     -86.0    6.9     -151.5    0.    3.3526    3
115   90   5   820   66.945   3935   2   3
2
'Queue NBR'    'AG'    10.5     -83.8    6.9     -151.5    0.    3.3526    1
115   0   0   250   66.945   1900   2   3
1
'Departure NB'    'AG'    13.4     -81.5    0.2     -0.3    1170.    11.73    0.
12.705
1
'Approach SB'    'AG'    0.2     -0.3    2.0     -81.8    970.    11.73    0.
12.095
2
'Queue SBL2'    'AG'    -7.7     -64.2    0.2     -0.3    0.    3.0478    2
115   98   4   520   66.945   2734   2   3
2
'Queue SBT2'    'AG'    -4.7     -63.2    0.2     -0.3    0.    3.0478    2
115   69   5   450   66.945   2834   2   3
1
'Departure SB'    'AG'    2.0     -81.8    -6.8     -153.7    570.    11.73    0.
12.095
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8   -64.4    10200.    12.524    8.
   130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 4: Washington & South State 2009

DATE : 1/21/10
TIME : 16:57:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	*	-95.5	-136.9	8.2	-78.3	*	119.	61.	AG	1020.	11.7	0.0	16.1		
2. Queue EBL	*	-13.6	-87.2	-260.6	-237.1	*	289.	239.	AG	134.	100.0	0.0	3.4	1.26	48.2
3. Queue EBT	*	-14.4	-92.7	-785.6	-513.0	*	878.	241.	AG	134.	100.0	0.0	3.4	1.86	146.4
4. Queue EBR	*	15.1	-98.4	-1.1	-104.1	*	17.	251.	AG	134.	100.0	0.0	3.4	0.51	2.9
5. Departure EB	*	8.2	-78.3	128.6	-20.2	*	134.	64.	AG	1320.	11.7	0.0	16.1		
6. Approach NB	*	6.9	-151.5	13.4	-81.5	*	70.	5.	AG	1070.	11.7	0.0	12.7		
7. Queue NBT3	*	8.0	-86.0	7.3	-126.9	*	41.	181.	AG	422.	100.0	0.0	3.4	0.44	6.8
8. Queue NBR	*	10.5	-83.8	10.5	-83.8	*	0.	183.	AG	0.	100.0	0.0	3.4	0.13	0.0
9. Departure NB	*	13.4	-81.5	0.2	-0.3	*	82.	351.	AG	1170.	11.7	0.0	12.7		
10. Approach SB	*	0.2	-0.3	2.0	-81.8	*	82.	179.	AG	970.	11.7	0.0	12.1		
11. Queue SBL2	*	-7.7	-64.2	-0.5	-5.6	*	59.	7.	AG	306.	100.0	0.0	3.0	1.00	9.8
12. Queue SBT2	*	-4.7	-63.2	-2.7	-37.4	*	26.	4.	AG	215.	100.0	0.0	3.0	0.23	4.3
13. Departure SB	*	2.0	-81.8	-6.8	-153.7	*	72.	187.	AG	570.	11.7	0.0	12.1		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 4: Washington & South State 2009

DATE : 1/21/10
TIME : 16:57:18

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	86	5.0	350	1454	66.94	2	3
3. Queue EBT	*	115	86	5.0	550	1545	66.94	2	3
4. Queue EBR	*	115	86	5.0	120	1225	66.94	2	3
7. Queue NBT3	*	115	90	5.0	820	3935	66.94	2	3
8. Queue NBR	*	115	0	0.0	250	1900	66.94	2	3
11. Queue SBL2	*	115	98	4.0	520	2734	66.94	2	3
12. Queue SBT2	*	115	69	5.0	450	2834	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 4 ID 1	*	-14.7	-77.5	1.8	*
2. REC INT 4 ID 2	*	16.0	-55.8	1.8	*
3. REC INT 4 ID 3	*	19.9	-83.1	1.8	*
4. REC INT 4 ID 4	*	-19.0	-106.9	1.8	*
5. REC INT 4 ID 5	*	-17.2	-169.3	1.8	*
6. REC INT 4 ID 6	*	-70.0	-114.5	1.8	*
7. REC INT 4 ID 7	*	86.8	-32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 4: Washington & South State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.	*	1.6	1.3	2.1	2.2	1.4	0.8	0.8
10.	*	2.0	1.0	1.8	2.2	1.7	0.9	1.0
20.	*	2.2	1.1	1.7	2.5	1.7	1.1	0.9
30.	*	2.3	1.1	1.7	2.3	1.3	1.4	0.7
40.	*	2.2	1.1	1.7	2.1	1.0	1.8	0.7
50.	*	1.9	1.1	1.7	2.2	0.5	2.2	0.7
60.	*	1.9	1.1	1.5	2.0	0.2	2.5	0.9
70.	*	2.1	1.3	1.2	1.6	0.0	2.5	0.9
80.	*	1.9	1.3	0.7	1.2	0.0	2.3	0.9
90.	*	1.5	1.1	0.4	1.0	0.0	1.7	0.9
100.	*	1.4	0.9	0.2	0.9	0.0	1.6	0.7
110.	*	1.3	0.7	0.2	0.7	0.0	1.3	0.7
120.	*	1.1	0.7	0.1	0.7	0.0	1.1	0.5
130.	*	1.3	0.6	0.1	0.6	0.0	1.1	0.5
140.	*	1.2	0.6	0.0	0.3	0.0	1.0	0.6
150.	*	1.2	0.6	0.1	0.2	0.0	1.0	0.6
160.	*	0.9	0.8	0.1	0.2	0.0	1.0	0.6
170.	*	0.9	1.1	0.2	0.1	0.0	1.0	0.7
180.	*	0.8	1.5	0.6	0.0	0.0	1.0	0.7
190.	*	0.7	1.8	1.1	0.0	0.0	1.0	0.7
200.	*	1.0	1.8	1.4	0.0	0.0	1.2	0.9
210.	*	1.0	2.0	1.6	0.0	0.0	1.2	1.0
220.	*	1.2	1.9	1.6	0.0	0.0	1.3	1.4
230.	*	1.3	2.0	2.0	0.3	0.0	1.2	2.1
240.	*	1.0	2.3	2.1	0.8	0.0	1.1	2.3
250.	*	0.8	2.0	2.5	1.0	0.1	0.7	2.4
260.	*	0.5	2.0	2.3	1.3	0.2	0.3	1.9
270.	*	0.6	2.0	2.3	1.2	0.2	0.1	1.8
280.	*	0.7	2.1	2.0	1.3	0.2	0.1	1.7
290.	*	0.8	2.1	2.2	1.3	0.2	0.2	1.4
300.	*	0.9	2.2	2.3	1.3	0.3	0.1	1.1
310.	*	0.9	2.1	2.6	1.4	0.4	0.1	1.0
320.	*	0.9	2.2	2.5	1.6	0.5	0.1	1.0
330.	*	0.9	2.0	2.8	1.7	0.8	0.2	0.9
340.	*	0.9	1.8	2.6	1.8	1.0	0.4	0.9
350.	*	1.0	1.6	2.2	1.8	1.0	0.6	0.8
360.	*	1.6	1.3	2.1	2.2	1.4	0.8	0.8
MAX	*	2.3	2.3	2.8	2.5	1.7	2.5	2.4
DEGR.	*	30	240	330	20	10	60	250

THE HIGHEST CONCENTRATION OF 2.80 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 4: Washington & South State 2009

DATE : 1/21/10
TIME : 16:57:18

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 30	REC2 240	REC3 330	REC4 20	REC5 10	REC6 60	REC7 250
1	*	0.0	0.2	0.0	0.4	0.1	0.5	0.1
2	*	0.0	0.2	0.0	0.1	0.0	0.2	0.1
3	*	0.0	0.2	0.0	0.1	0.0	0.2	0.1
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.0	0.5	0.0	0.0	0.1	0.5
6	*	0.0	0.0	0.1	0.0	0.1	0.0	0.0
7	*	0.0	0.0	0.0	0.0	0.2	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.4	0.6	0.2	0.1	0.1	0.1
10	*	0.3	0.3	0.2	0.2	0.1	0.1	0.1
11	*	0.4	0.1	0.3	0.2	0.1	0.0	0.1
12	*	0.2	0.1	0.1	0.1	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0
14	*	1.2	0.8	1.0	1.2	0.9	1.3	1.3

```
'Stamford Microscale EIE' 60. 321.  0. 0.  7  1.0  0  1
'REC INT 4 ID 1'    -14.7    -77.5    1.8
'REC INT 4 ID 2'    16    -55.8    1.8
'REC INT 4 ID 3'    19.9    -83.1    1.8
'REC INT 4 ID 4'    -19    -106.9    1.8
'REC INT 4 ID 5'    -17.2    -169.3    1.8
'REC INT 4 ID 6'    -70    -114.5    1.8
'REC INT 4 ID 7'    86.8    -32.6    1.8
'INT 4: Wash & S. State 2012 Build'   14   1  1  'C'
1
'Approach EB'    'AG'    -95.5     -136.9    8.2     -78.3    1238.    10.15    0.
 16.057
2
'Queue EBL'    'AG'    -13.6     -87.2    -95.5     -136.9    0.    3.3526    1
115   86   5   415   56.345   1454   2   3
2
'Queue EBT'    'AG'    -14.4     -92.7    -95.5     -136.9    0.    3.3526    1
115   86   5   594   56.345   1545   2   3
2
'Queue EBR'    'AG'    15.1     -98.4    -95.5     -136.9    0.    3.3526    1
115   86   5   229   56.345   1225   2   3
1
'Departure EB'    'AG'    8.2     -78.3    128.6     -20.2    1411.    10.15    0.
 16.057
1
'Approach NB'    'AG'    6.9     -151.5    13.4     -81.5    1540.    10.15    0.
12.705
2
'Queue NBT3'    'AG'    8.0     -86.0    6.9     -151.5    0.    3.3526    3
115   90   5   1279   56.345   3935   2   3
2
'Queue NBR'    'AG'    10.5     -83.8    6.9     -151.5    0.    3.3526    1
115   0   0   261   56.345   1900   2   3
1
'Departure NB'    'AG'    13.4     -81.5    0.2     -0.3    1694.    10.15    0.
12.705
1
'Approach SB'    'AG'    0.2     -0.3    2.0     -81.8    1380.    10.15    0.
12.095
2
'Queue SBL2'    'AG'    -7.7     -64.2    0.2     -0.3    0.    3.0478    2
115   98   4   556   56.345   2734   2   3
2
'Queue SBT2'    'AG'    -4.7     -63.2    0.2     -0.3    0.    3.0478    2
115   69   5   824   56.345   2834   2   3
1
'Departure SB'    'AG'    2.0     -81.8    -6.8     -153.7    1053.    10.15    0.
 12.095
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(M)	(DEG)		(G/MI)		(M)	(M)		(VEH)
1. Approach EB	*	-95.5	-136.9	8.2	-78.3	*	119.	61.	AG	1238.	10.1	0.0	16.1		
2. Queue EBL	*	-13.6	-87.2	-438.9	-345.3	*	497.	239.	AG	113.	100.0	0.0	3.4	1.49	82.9
3. Queue EBT	*	-14.4	-92.7	-909.5	-580.5	*	1019.	241.	AG	113.	100.0	0.0	3.4	2.01	169.9
4. Queue EBR	*	15.1	-98.4	-29.0	-113.8	*	47.	251.	AG	113.	100.0	0.0	3.4	0.98	7.8
5. Departure EB	*	8.2	-78.3	128.6	-20.2	*	134.	64.	AG	1411.	10.1	0.0	16.1		
6. Approach NB	*	6.9	-151.5	13.4	-81.5	*	70.	5.	AG	1540.	10.1	0.0	12.7		
7. Queue NBT3	*	8.0	-86.0	6.9	-149.9	*	64.	181.	AG	355.	100.0	0.0	3.4	0.69	10.6
8. Queue NBR	*	10.5	-83.8	10.5	-83.8	*	0.	183.	AG	0.	100.0	0.0	3.4	0.14	0.0
9. Departure NB	*	13.4	-81.5	0.2	-0.3	*	82.	351.	AG	1694.	10.1	0.0	12.7		
10. Approach SB	*	0.2	-0.3	2.0	-81.8	*	82.	179.	AG	1380.	10.1	0.0	12.1		
11. Queue SBL2	*	-7.7	-64.2	6.4	49.6	*	115.	7.	AG	258.	100.0	0.0	3.0	1.07	19.1
12. Queue SBT2	*	-4.7	-63.2	-1.0	-16.0	*	47.	4.	AG	181.	100.0	0.0	3.0	0.43	7.9
13. Departure SB	*	2.0	-81.8	-6.8	-153.7	*	72.	187.	AG	1053.	10.1	0.0	12.1		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	86	5.0	415	1454	56.35	2	3
3. Queue EBT	*	115	86	5.0	594	1545	56.35	2	3
4. Queue EBR	*	115	86	5.0	229	1225	56.35	2	3
7. Queue NBT3	*	115	90	5.0	1279	3935	56.35	2	3
8. Queue NBR	*	115	0	0.0	261	1900	56.35	2	3
11. Queue SBL2	*	115	98	4.0	556	2734	56.35	2	3
12. Queue SBT2	*	115	69	5.0	824	2834	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 4 ID 1	*	-14.7	-77.5	1.8	*
2. REC INT 4 ID 2	*	16.0	-55.8	1.8	*
3. REC INT 4 ID 3	*	19.9	-83.1	1.8	*
4. REC INT 4 ID 4	*	-19.0	-106.9	1.8	*
5. REC INT 4 ID 5	*	-17.2	-169.3	1.8	*
6. REC INT 4 ID 6	*	-70.0	-114.5	1.8	*
7. REC INT 4 ID 7	*	86.8	-32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.	*	1.6	1.4	1.9	2.0	1.4	0.7	0.7
10.	*	2.0	1.1	1.7	2.1	1.7	0.9	0.8
20.	*	2.2	0.9	1.6	2.3	1.8	1.1	0.8
30.	*	2.2	1.0	1.5	2.4	1.4	1.4	0.6
40.	*	2.1	1.0	1.5	2.1	1.2	1.7	0.5
50.	*	2.0	0.9	1.4	2.2	0.8	2.1	0.7
60.	*	1.8	1.0	1.3	2.0	0.3	2.2	0.7
70.	*	1.9	1.1	1.0	1.8	0.0	2.6	0.7
80.	*	1.8	1.1	0.6	1.4	0.0	2.3	0.8
90.	*	1.5	1.0	0.3	1.4	0.0	2.0	0.7
100.	*	1.4	0.8	0.2	1.3	0.0	1.6	0.7
110.	*	1.3	0.6	0.1	1.2	0.0	1.5	0.5
120.	*	1.3	0.6	0.1	1.2	0.0	1.1	0.5
130.	*	1.2	0.6	0.1	1.1	0.0	1.0	0.4
140.	*	1.3	0.6	0.1	1.1	0.0	0.9	0.5
150.	*	1.3	0.6	0.1	0.9	0.0	0.9	0.6
160.	*	1.3	0.9	0.1	0.7	0.0	0.9	0.6
170.	*	1.1	1.2	0.3	0.5	0.0	0.9	0.6
180.	*	0.9	1.7	0.7	0.5	0.0	0.9	0.6
190.	*	1.0	2.2	1.4	0.4	0.0	0.9	0.7
200.	*	1.0	2.3	1.6	0.4	0.0	1.1	0.7
210.	*	1.0	2.0	1.7	0.4	0.0	1.1	1.1
220.	*	1.1	2.1	1.9	0.4	0.0	1.2	1.3
230.	*	1.2	2.2	2.2	0.6	0.0	1.3	2.0
240.	*	0.9	2.2	2.4	1.0	0.0	1.0	2.2
250.	*	0.7	2.0	2.6	1.3	0.2	0.7	2.2
260.	*	0.4	1.9	2.3	1.2	0.2	0.3	1.8
270.	*	0.5	2.0	2.4	1.1	0.2	0.1	1.6
280.	*	0.6	2.2	2.1	1.2	0.2	0.1	1.5
290.	*	0.7	2.3	2.2	1.2	0.3	0.2	1.3
300.	*	0.8	2.2	2.2	1.2	0.3	0.1	1.0
310.	*	0.8	2.3	2.4	1.3	0.4	0.1	1.0
320.	*	0.8	2.2	2.6	1.5	0.5	0.1	0.8
330.	*	0.8	2.3	2.7	1.6	0.7	0.1	0.8
340.	*	0.8	2.2	2.7	1.6	0.9	0.3	0.7
350.	*	1.0	1.8	2.5	1.6	0.9	0.5	0.7
360.	*	1.6	1.4	1.9	2.0	1.4	0.7	0.7
MAX	*	2.2	2.3	2.7	2.4	1.8	2.6	2.2
DEGR.	*	30	290	330	30	20	70	240

THE HIGHEST CONCENTRATION OF 2.70 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 30	REC2 290	REC3 330	REC4 30	REC5 20	REC6 70	REC7 240
1	*	0.0	0.0	0.0	0.4	0.0	0.6	0.1
2	*	0.0	0.0	0.0	0.0	0.0	0.3	0.1
3	*	0.0	0.0	0.0	0.1	0.0	0.2	0.1
4	*	0.0	0.0	0.0	0.0	0.0	0.1	0.0
5	*	0.0	0.0	0.4	0.1	0.1	0.1	0.7
6	*	0.0	0.0	0.1	0.0	0.2	0.1	0.0
7	*	0.0	0.0	0.0	0.0	0.3	0.1	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.3	0.6	0.7	0.2	0.1	0.1	0.1
10	*	0.3	0.3	0.3	0.2	0.1	0.0	0.0
11	*	0.4	0.3	0.2	0.1	0.1	0.0	0.0
12	*	0.2	0.2	0.1	0.1	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.2	0.1	0.0
14	*	1.0	0.9	0.9	1.1	0.7	0.9	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  7  1.0  0  1
'REC INT 4 ID 1'    -14.7    -77.5    1.8
'REC INT 4 ID 2'    16    -55.8    1.8
'REC INT 4 ID 3'    19.9    -83.1    1.8
'REC INT 4 ID 4'    -19    -106.9    1.8
'REC INT 4 ID 5'    -17.2    -169.3    1.8
'REC INT 4 ID 6'    -70    -114.5    1.8
'REC INT 4 ID 7'    86.8    -32.6    1.8
'INT 4: Wash & S. State 2012 No-Build'   14   1  1  'C'
1
'Approach EB'    'AG'    -95.5     -136.9    8.2     -78.3    1238.    10.15    0.
 16.057
2
'Queue EBL'    'AG'    -13.6     -87.2    -95.5     -136.9    0.    3.3526    1
115   86   5   415   56.345   1454   2   3
2
'Queue EBT'    'AG'    -14.4     -92.7    -95.5     -136.9    0.    3.3526    1
115   86   5   594   56.345   1545   2   3
2
'Queue EBR'    'AG'    15.1     -98.4    -95.5     -136.9    0.    3.3526    1
115   86   5   229   56.345   1225   2   3
1
'Departure EB'    'AG'    8.2     -78.3    128.6     -20.2    1411.    10.15    0.
 16.057
1
'Approach NB'    'AG'    6.9     -151.5    13.4     -81.5    1531.    10.15    0.
12.705
2
'Queue NBT3'    'AG'    8.0     -86.0    6.9     -151.5    0.    3.3526    3
115   90   5   1270   56.345   3935   2   3
2
'Queue NBR'    'AG'    10.5     -83.8    6.9     -151.5    0.    3.3526    1
115   0   0   261   56.345   1900   2   3
1
'Departure NB'    'AG'    13.4     -81.5    0.2     -0.3    1685.    10.15    0.
12.705
1
'Approach SB'    'AG'    0.2     -0.3    2.0     -81.8    1377.    10.15    0.
12.095
2
'Queue SBL2'    'AG'    -7.7     -64.2    0.2     -0.3    0.    3.0478    2
115   98   4   556   56.345   2734   2   3
2
'Queue SBT2'    'AG'    -4.7     -63.2    0.2     -0.3    0.    3.0478    2
115   69   5   821   56.345   2834   2   3
1
'Departure SB'    'AG'    2.0     -81.8    -6.8     -153.7    1050.    10.15    0.
 12.095
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	*	-95.5	-136.9	8.2	-78.3	*	119.	61.	AG	1238.	10.1	0.0	16.1		
2. Queue EBL	*	-13.6	-87.2	-438.9	-345.3	*	497.	239.	AG	113.	100.0	0.0	3.4	1.49	82.9
3. Queue EBT	*	-14.4	-92.7	-909.5	-580.5	*	1019.	241.	AG	113.	100.0	0.0	3.4	2.01	169.9
4. Queue EBR	*	15.1	-98.4	-29.0	-113.8	*	47.	251.	AG	113.	100.0	0.0	3.4	0.98	7.8
5. Departure EB	*	8.2	-78.3	128.6	-20.2	*	134.	64.	AG	1411.	10.1	0.0	16.1		
6. Approach NB	*	6.9	-151.5	13.4	-81.5	*	70.	5.	AG	1531.	10.1	0.0	12.7		
7. Queue NBT3	*	8.0	-86.0	6.9	-149.4	*	63.	181.	AG	355.	100.0	0.0	3.4	0.69	10.6
8. Queue NBR	*	10.5	-83.8	10.5	-83.8	*	0.	183.	AG	0.	100.0	0.0	3.4	0.14	0.0
9. Departure NB	*	13.4	-81.5	0.2	-0.3	*	82.	351.	AG	1685.	10.1	0.0	12.7		
10. Approach SB	*	0.2	-0.3	2.0	-81.8	*	82.	179.	AG	1377.	10.1	0.0	12.1		
11. Queue SBL2	*	-7.7	-64.2	6.4	49.6	*	115.	7.	AG	258.	100.0	0.0	3.0	1.07	19.1
12. Queue SBT2	*	-4.7	-63.2	-1.0	-16.2	*	47.	4.	AG	181.	100.0	0.0	3.0	0.43	7.9
13. Departure SB	*	2.0	-81.8	-6.8	-153.7	*	72.	187.	AG	1050.	10.1	0.0	12.1		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	86	5.0	415	1454	56.35	2	3
3. Queue EBT	*	115	86	5.0	594	1545	56.35	2	3
4. Queue EBR	*	115	86	5.0	229	1225	56.35	2	3
7. Queue NBT3	*	115	90	5.0	1270	3935	56.35	2	3
8. Queue NBR	*	115	0	0.0	261	1900	56.35	2	3
11. Queue SBL2	*	115	98	4.0	556	2734	56.35	2	3
12. Queue SBT2	*	115	69	5.0	821	2834	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 4 ID 1	*	-14.7	-77.5	1.8	*
2. REC INT 4 ID 2	*	16.0	-55.8	1.8	*
3. REC INT 4 ID 3	*	19.9	-83.1	1.8	*
4. REC INT 4 ID 4	*	-19.0	-106.9	1.8	*
5. REC INT 4 ID 5	*	-17.2	-169.3	1.8	*
6. REC INT 4 ID 6	*	-70.0	-114.5	1.8	*
7. REC INT 4 ID 7	*	86.8	-32.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.	*	1.6	1.4	1.9	2.0	1.4	0.7	0.7
10.	*	2.0	1.1	1.7	2.1	1.7	0.9	0.8
20.	*	2.2	0.9	1.6	2.3	1.8	1.1	0.8
30.	*	2.2	1.0	1.5	2.4	1.4	1.4	0.6
40.	*	2.1	1.0	1.5	2.1	1.2	1.7	0.5
50.	*	2.0	0.9	1.4	2.2	0.8	2.1	0.7
60.	*	1.8	1.0	1.3	2.0	0.3	2.2	0.7
70.	*	1.9	1.1	1.0	1.8	0.0	2.6	0.7
80.	*	1.8	1.1	0.6	1.4	0.0	2.3	0.8
90.	*	1.5	1.0	0.3	1.4	0.0	2.0	0.7
100.	*	1.4	0.8	0.2	1.3	0.0	1.6	0.7
110.	*	1.3	0.6	0.1	1.2	0.0	1.5	0.5
120.	*	1.3	0.6	0.1	1.2	0.0	1.1	0.5
130.	*	1.2	0.6	0.1	1.1	0.0	1.0	0.4
140.	*	1.3	0.6	0.0	1.1	0.0	0.9	0.5
150.	*	1.3	0.6	0.1	0.9	0.0	0.9	0.6
160.	*	1.3	0.9	0.1	0.7	0.0	0.9	0.6
170.	*	1.1	1.2	0.3	0.5	0.0	0.9	0.6
180.	*	0.9	1.7	0.7	0.5	0.0	0.9	0.6
190.	*	1.0	2.1	1.4	0.4	0.0	0.9	0.7
200.	*	1.0	2.2	1.6	0.4	0.0	1.1	0.7
210.	*	1.0	1.9	1.7	0.4	0.0	1.1	1.1
220.	*	1.1	2.1	1.8	0.4	0.0	1.2	1.3
230.	*	1.2	2.2	2.2	0.6	0.0	1.3	2.0
240.	*	0.9	2.2	2.4	1.0	0.0	1.0	2.2
250.	*	0.7	2.0	2.6	1.3	0.2	0.7	2.2
260.	*	0.4	1.9	2.3	1.2	0.2	0.3	1.8
270.	*	0.5	2.0	2.4	1.1	0.2	0.1	1.6
280.	*	0.6	2.2	2.1	1.2	0.2	0.1	1.5
290.	*	0.7	2.3	2.1	1.2	0.3	0.2	1.3
300.	*	0.8	2.2	2.2	1.2	0.3	0.1	1.0
310.	*	0.8	2.3	2.4	1.3	0.4	0.1	1.0
320.	*	0.8	2.2	2.6	1.5	0.5	0.1	0.8
330.	*	0.8	2.3	2.7	1.6	0.7	0.1	0.8
340.	*	0.8	2.1	2.7	1.6	0.9	0.3	0.7
350.	*	1.0	1.8	2.5	1.6	0.9	0.5	0.7
360.	*	1.6	1.4	1.9	2.0	1.4	0.7	0.7
MAX	*	2.2	2.3	2.7	2.4	1.8	2.6	2.2
DEGR.	*	30	290	330	30	20	70	240

THE HIGHEST CONCENTRATION OF 2.70 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 30	REC2 290	REC3 330	REC4 30	REC5 20	REC6 70	REC7 240
1	*	0.0	0.0	0.0	0.4	0.0	0.6	0.1
2	*	0.0	0.0	0.0	0.0	0.0	0.3	0.1
3	*	0.0	0.0	0.0	0.1	0.0	0.2	0.1
4	*	0.0	0.0	0.0	0.0	0.0	0.1	0.0
5	*	0.0	0.0	0.4	0.1	0.1	0.1	0.7
6	*	0.0	0.0	0.1	0.0	0.2	0.1	0.0
7	*	0.0	0.0	0.0	0.0	0.3	0.1	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.3	0.6	0.7	0.2	0.1	0.1	0.1
10	*	0.3	0.3	0.3	0.2	0.1	0.0	0.0
11	*	0.4	0.3	0.2	0.1	0.1	0.0	0.0
12	*	0.2	0.2	0.1	0.1	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.2	0.1	0.0
14	*	1.0	0.9	0.9	1.1	0.7	0.9	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  7  1.0  0  1
'REC INT 4 ID 1'    -14.7    -77.5    1.8
'REC INT 4 ID 2'    16    -55.8    1.8
'REC INT 4 ID 3'    19.9    -83.1    1.8
'REC INT 4 ID 4'    -19    -106.9    1.8
'REC INT 4 ID 5'    -17.2    -169.3    1.8
'REC INT 4 ID 6'    -70    -114.5    1.8
'REC INT 4 ID 7'    86.8    -32.6    1.8
'INT 4: Wash & S. State 2029 Build'   14   1  1  'C'
1
'Approach EB'    'AG'    -95.5     -136.9    8.2     -78.3    1430.    8.189    0.
 16.057
2
'Queue EBL'    'AG'    -13.6     -87.2    -95.5     -136.9    0.    3.3526    1
115   86   5   470   44.4925   1454   2   3
2
'Queue EBT'    'AG'    -14.4     -92.7    -95.5     -136.9    0.    3.3526    1
115   86   5   690   44.4925   1545   2   3
2
'Queue EBR'    'AG'    15.1     -98.4    -95.5     -136.9    0.    3.3526    1
115   86   5   270   44.4925   1225   2   3
1
'Departure EB'    'AG'    8.2     -78.3    128.6     -20.2    1630.    8.189    0.
 16.057
1
'Approach NB'    'AG'    6.9     -151.5    13.4     -81.5    1779.    8.189    0.
12.705
2
'Queue NBT3'    'AG'    8.0     -86.0    6.9     -151.5    0.    3.3526    3
115   90   5   1479   44.4925   3935   2   3
2
'Queue NBR'    'AG'    10.5     -83.8    6.9     -151.5    0.    3.3526    1
115   0   0   300   44.4925   1900   2   3
1
'Departure NB'    'AG'    13.4     -81.5    0.2     -0.3    1949.    8.189    0.
12.705
1
'Approach SB'    'AG'    0.2     -0.3    2.0     -81.8    1583.    8.189    0.
12.095
2
'Queue SBL2'    'AG'    -7.7     -64.2    0.2     -0.3    0.    3.0478    2
115   98   4   640   44.4925   2734   2   3
2
'Queue SBT2'    'AG'    -4.7     -63.2    0.2     -0.3    0.    3.0478    2
115   69   5   943   44.4925   2834   2   3
1
'Departure SB'    'AG'    2.0     -81.8    -6.8     -153.7    1213.    8.189    0.
 12.095
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:24

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	*	-95.5	-136.9	8.2	-78.3	*	119.	61.	AG	1430.	8.2	0.0	16.1		
2. Queue EBL	*	-13.6	-87.2	-589.7	-436.8	*	674.	239.	AG	89.	100.0	0.0	3.4	1.69	112.3
3. Queue EBT	*	-14.4	-92.7	-1179.7	-727.8	*	1327.	241.	AG	89.	100.0	0.0	3.4	2.34	221.2
4. Queue EBR	*	15.1	-98.4	-141.8	-153.0	*	166.	251.	AG	89.	100.0	0.0	3.4	1.15	27.7
5. Departure EB	*	8.2	-78.3	128.6	-20.2	*	134.	64.	AG	1630.	8.2	0.0	16.1		
6. Approach NB	*	6.9	-151.5	13.4	-81.5	*	70.	5.	AG	1779.	8.2	0.0	12.7		
7. Queue NBT3	*	8.0	-86.0	6.8	-159.9	*	74.	181.	AG	280.	100.0	0.0	3.4	0.80	12.3
8. Queue NBR	*	10.5	-83.8	10.5	-83.8	*	0.	183.	AG	0.	100.0	0.0	3.4	0.16	0.0
9. Departure NB	*	13.4	-81.5	0.2	-0.3	*	82.	351.	AG	1949.	8.2	0.0	12.7		
10. Approach SB	*	0.2	-0.3	2.0	-81.8	*	82.	179.	AG	1583.	8.2	0.0	12.1		
11. Queue SBL2	*	-7.7	-64.2	23.0	184.2	*	250.	7.	AG	203.	100.0	0.0	3.0	1.23	41.7
12. Queue SBT2	*	-4.7	-63.2	-0.5	-9.2	*	54.	4.	AG	143.	100.0	0.0	3.0	0.49	9.0
13. Departure SB	*	2.0	-81.8	-6.8	-153.7	*	72.	187.	AG	1213.	8.2	0.0	12.1		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:24

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	115	86	5.0	470	1454	44.49	2	3
3. Queue EBT	115	86	5.0	690	1545	44.49	2	3
4. Queue EBR	115	86	5.0	270	1225	44.49	2	3
7. Queue NBT3	115	90	5.0	1479	3935	44.49	2	3
8. Queue NBR	115	0	0.0	300	1900	44.49	2	3
11. Queue SBL2	115	98	4.0	640	2734	44.49	2	3
12. Queue SBT2	115	69	5.0	943	2834	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC INT 4 ID 1	-14.7	-77.5	1.8
2. REC INT 4 ID 2	16.0	-55.8	1.8
3. REC INT 4 ID 3	19.9	-83.1	1.8
4. REC INT 4 ID 4	-19.0	-106.9	1.8
5. REC INT 4 ID 5	-17.2	-169.3	1.8
6. REC INT 4 ID 6	-70.0	-114.5	1.8
7. REC INT 4 ID 7	86.8	-32.6	1.8

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7
0.	*	1.3	1.2	1.8	1.7	1.3	0.5	0.6
10.	*	1.8	1.0	1.5	2.0	1.4	0.7	0.6
20.	*	2.0	0.8	1.4	2.1	1.6	0.9	0.6
30.	*	1.8	0.9	1.3	1.9	1.3	1.2	0.5
40.	*	1.7	0.8	1.3	1.8	1.1	1.4	0.5
50.	*	1.7	0.7	1.3	1.9	0.8	1.7	0.5
60.	*	1.5	0.8	1.1	1.7	0.4	2.0	0.6
70.	*	1.7	0.9	0.8	1.5	0.1	2.2	0.7
80.	*	1.5	1.0	0.4	1.2	0.1	2.1	0.8
90.	*	1.3	0.8	0.3	1.2	0.0	1.6	0.7
100.	*	1.3	0.6	0.1	1.2	0.0	1.5	0.6
110.	*	1.2	0.5	0.1	1.1	0.0	1.4	0.5
120.	*	1.1	0.5	0.1	1.1	0.0	1.1	0.4
130.	*	1.2	0.6	0.1	1.0	0.0	0.9	0.4
140.	*	1.2	0.5	0.0	1.0	0.0	0.9	0.5
150.	*	1.2	0.5	0.1	0.8	0.0	0.9	0.5
160.	*	1.2	0.7	0.1	0.7	0.0	0.9	0.5
170.	*	1.0	1.1	0.3	0.4	0.0	0.9	0.5
180.	*	0.9	1.6	0.6	0.4	0.0	0.9	0.5
190.	*	0.6	1.8	1.2	0.3	0.0	0.9	0.6
200.	*	0.8	1.9	1.5	0.3	0.0	1.0	0.7
210.	*	1.0	1.7	1.6	0.3	0.0	1.2	1.0
220.	*	1.0	2.1	1.6	0.4	0.0	1.3	1.1
230.	*	1.1	1.8	1.9	0.7	0.0	1.1	1.7
240.	*	1.0	1.9	2.2	0.9	0.0	0.9	1.9
250.	*	0.6	1.9	2.4	1.1	0.2	0.5	1.9
260.	*	0.4	1.6	2.1	1.2	0.2	0.1	1.5
270.	*	0.4	1.7	1.9	1.1	0.2	0.1	1.3
280.	*	0.5	1.8	1.9	1.0	0.2	0.1	1.3
290.	*	0.6	1.9	1.8	1.1	0.3	0.1	1.1
300.	*	0.7	2.0	2.0	1.0	0.3	0.1	0.8
310.	*	0.6	1.9	2.2	1.1	0.3	0.1	0.8
320.	*	0.6	2.0	2.4	1.1	0.4	0.1	0.8
330.	*	0.6	1.9	2.5	1.2	0.5	0.1	0.7
340.	*	0.6	1.9	2.3	1.3	0.7	0.2	0.7
350.	*	0.8	1.8	2.2	1.3	0.8	0.4	0.6
360.	*	1.3	1.2	1.8	1.7	1.3	0.5	0.6
MAX	*	2.0	2.1	2.5	2.1	1.6	2.2	1.9
DEGR.	*	20	220	330	20	20	70	240

THE HIGHEST CONCENTRATION OF 2.50 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:24

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 20	REC2 220	REC3 330	REC4 20	REC5 20	REC6 70	REC7 240
1	*	0.0	0.3	0.0	0.4	0.0	0.6	0.1
2	*	0.0	0.1	0.0	0.1	0.0	0.2	0.1
3	*	0.0	0.1	0.0	0.1	0.0	0.2	0.1
4	*	0.0	0.1	0.0	0.0	0.0	0.1	0.0
5	*	0.0	0.1	0.4	0.0	0.1	0.1	0.6
6	*	0.0	0.0	0.1	0.0	0.2	0.1	0.0
7	*	0.0	0.0	0.0	0.0	0.2	0.1	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.6	0.7	0.2	0.1	0.0	0.1
10	*	0.3	0.3	0.3	0.2	0.1	0.0	0.0
11	*	0.5	0.0	0.2	0.2	0.1	0.0	0.0
12	*	0.2	0.0	0.1	0.1	0.0	0.0	0.0
13	*	0.0	0.1	0.0	0.0	0.2	0.1	0.0
14	*	0.8	0.4	0.7	0.8	0.6	0.7	0.8

```
'Stamford Microscale EIE' 60. 321.  0. 0.  7  1.0  0  1
'REC INT 4 ID 1'    -14.7    -77.5    1.8
'REC INT 4 ID 2'    16    -55.8    1.8
'REC INT 4 ID 3'    19.9    -83.1    1.8
'REC INT 4 ID 4'    -19    -106.9    1.8
'REC INT 4 ID 5'    -17.2    -169.3    1.8
'REC INT 4 ID 6'    -70    -114.5    1.8
'REC INT 4 ID 7'    86.8    -32.6    1.8
'INT 4: Wash & S. State 2029 No-Build'   14   1  1  'C'
1
'Approach EB'    'AG'    -95.5     -136.9    8.2     -78.3    1430.    8.189    0.
 16.057
2
'Queue EBL'    'AG'    -13.6     -87.2    -95.5     -136.9    0.    3.3526    1
115   86   5   470   44.4925   1454   2   3
2
'Queue EBT'    'AG'    -14.4     -92.7    -95.5     -136.9    0.    3.3526    1
115   86   5   690   44.4925   1545   2   3
2
'Queue EBR'    'AG'    15.1     -98.4    -95.5     -136.9    0.    3.3526    1
115   86   5   270   44.4925   1225   2   3
1
'Departure EB'    'AG'    8.2     -78.3    128.6     -20.2    1630.    8.189    0.
 16.057
1
'Approach NB'    'AG'    6.9     -151.5    13.4     -81.5    1770.    8.189    0.
12.705
2
'Queue NBT3'    'AG'    8.0     -86.0    6.9     -151.5    0.    3.3526    3
115   90   5   1470   44.4925   3935   2   3
2
'Queue NBR'    'AG'    10.5     -83.8    6.9     -151.5    0.    3.3526    1
115   0   0   300   44.4925   1900   2   3
1
'Departure NB'    'AG'    13.4     -81.5    0.2     -0.3    1940.    8.189    0.
12.705
1
'Approach SB'    'AG'    0.2     -0.3    2.0     -81.8    1580.    8.189    0.
12.095
2
'Queue SBL2'    'AG'    -7.7     -64.2    0.2     -0.3    0.    3.0478    2
115   98   4   640   44.4925   2734   2   3
2
'Queue SBT2'    'AG'    -4.7     -63.2    0.2     -0.3    0.    3.0478    2
115   69   5   940   44.4925   2834   2   3
1
'Departure SB'    'AG'    2.0     -81.8    -6.8     -153.7    1210.    8.189    0.
 12.095
1
'I-95 Overpass'    'BR'    118.1     13.4    -81.8     -64.4    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 9

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(M)	(DEG)		(G/MI)		(M)	(M)		(VEH)
1. Approach EB	*	-95.5	-136.9	8.2	-78.3	*	119.	61.	AG	1430.	8.2	0.0	16.1		
2. Queue EBL	*	-13.6	-87.2	-589.7	-436.8	*	674.	239.	AG	89.	100.0	0.0	3.4	1.69	112.3
3. Queue EBT	*	-14.4	-92.7	-1179.7	-727.8	*	1327.	241.	AG	89.	100.0	0.0	3.4	2.34	221.2
4. Queue EBR	*	15.1	-98.4	-141.8	-153.0	*	166.	251.	AG	89.	100.0	0.0	3.4	1.15	27.7
5. Departure EB	*	8.2	-78.3	128.6	-20.2	*	134.	64.	AG	1630.	8.2	0.0	16.1		
6. Approach NB	*	6.9	-151.5	13.4	-81.5	*	70.	5.	AG	1770.	8.2	0.0	12.7		
7. Queue NBT3	*	8.0	-86.0	6.8	-159.5	*	74.	181.	AG	280.	100.0	0.0	3.4	0.80	12.2
8. Queue NBR	*	10.5	-83.8	10.5	-83.8	*	0.	183.	AG	0.	100.0	0.0	3.4	0.16	0.0
9. Departure NB	*	13.4	-81.5	0.2	-0.3	*	82.	351.	AG	1940.	8.2	0.0	12.7		
10. Approach SB	*	0.2	-0.3	2.0	-81.8	*	82.	179.	AG	1580.	8.2	0.0	12.1		
11. Queue SBL2	*	-7.7	-64.2	23.0	184.2	*	250.	7.	AG	203.	100.0	0.0	3.0	1.23	41.7
12. Queue SBT2	*	-4.7	-63.2	-0.5	-9.3	*	54.	4.	AG	143.	100.0	0.0	3.0	0.49	9.0
13. Departure SB	*	2.0	-81.8	-6.8	-153.7	*	72.	187.	AG	1210.	8.2	0.0	12.1		
14. I-95 Overpass	*	118.1	13.4	-81.8	-64.4	*	215.	249.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	86	5.0	470	1454	44.49	2	3
3. Queue EBT	*	115	86	5.0	690	1545	44.49	2	3
4. Queue EBR	*	115	86	5.0	270	1225	44.49	2	3
7. Queue NBT3	*	115	90	5.0	1470	3935	44.49	2	3
8. Queue NBR	*	115	0	0.0	300	1900	44.49	2	3
11. Queue SBL2	*	115	98	4.0	640	2734	44.49	2	3
12. Queue SBT2	*	115	69	5.0	940	2834	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 4 ID 1	*	-14.7	-77.5	1.8	*
2. REC INT 4 ID 2	*	16.0	-55.8	1.8	*
3. REC INT 4 ID 3	*	19.9	-83.1	1.8	*
4. REC INT 4 ID 4	*	-19.0	-106.9	1.8	*
5. REC INT 4 ID 5	*	-17.2	-169.3	1.8	*
6. REC INT 4 ID 6	*	-70.0	-114.5	1.8	*
7. REC INT 4 ID 7	*	86.8	-32.6	1.8	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7
0. *	1.3	1.2	1.8	1.7	1.3	0.5	0.6
10. *	1.8	1.0	1.5	2.0	1.4	0.7	0.6
20. *	2.0	0.8	1.4	2.1	1.6	0.9	0.6
30. *	1.8	0.9	1.3	1.9	1.3	1.2	0.5
40. *	1.7	0.8	1.3	1.8	1.1	1.4	0.5
50. *	1.7	0.7	1.3	1.9	0.8	1.7	0.5
60. *	1.5	0.8	1.1	1.7	0.4	2.0	0.6
70. *	1.7	0.9	0.8	1.5	0.1	2.1	0.7
80. *	1.5	1.0	0.4	1.2	0.1	2.1	0.8
90. *	1.3	0.8	0.3	1.2	0.0	1.6	0.7
100. *	1.3	0.6	0.1	1.2	0.0	1.5	0.6
110. *	1.2	0.5	0.1	1.1	0.0	1.4	0.5
120. *	1.1	0.5	0.1	1.1	0.0	1.1	0.4
130. *	1.2	0.5	0.1	1.0	0.0	0.9	0.4
140. *	1.2	0.5	0.0	1.0	0.0	0.9	0.5
150. *	1.2	0.5	0.1	0.8	0.0	0.9	0.5
160. *	1.2	0.7	0.1	0.7	0.0	0.9	0.5
170. *	1.0	1.1	0.3	0.4	0.0	0.9	0.5
180. *	0.9	1.6	0.6	0.4	0.0	0.9	0.5
190. *	0.6	1.8	1.2	0.3	0.0	0.9	0.6
200. *	0.8	1.9	1.5	0.3	0.0	1.0	0.7
210. *	1.0	1.7	1.6	0.3	0.0	1.2	1.0
220. *	1.0	2.1	1.6	0.4	0.0	1.3	1.1
230. *	1.1	1.8	1.9	0.7	0.0	1.1	1.7
240. *	1.0	1.9	2.2	0.9	0.0	0.9	1.9
250. *	0.6	1.9	2.4	1.1	0.2	0.5	1.9
260. *	0.4	1.6	2.1	1.2	0.2	0.1	1.5
270. *	0.4	1.7	1.9	1.1	0.2	0.1	1.3
280. *	0.5	1.8	1.9	1.0	0.2	0.1	1.3
290. *	0.6	1.9	1.8	1.1	0.3	0.1	1.1
300. *	0.7	2.0	2.0	1.0	0.3	0.1	0.8
310. *	0.6	1.9	2.2	1.1	0.3	0.1	0.8
320. *	0.6	2.0	2.4	1.1	0.4	0.1	0.8
330. *	0.6	1.9	2.5	1.2	0.5	0.1	0.7
340. *	0.6	1.9	2.3	1.3	0.7	0.2	0.7
350. *	0.8	1.8	2.2	1.3	0.8	0.4	0.6
360. *	1.3	1.2	1.8	1.7	1.3	0.5	0.6
MAX *	2.0	2.1	2.5	2.1	1.6	2.1	1.9
DEGR. *	20	220	330	20	20	70	240

THE HIGHEST CONCENTRATION OF 2.50 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Stamford Microscale EIE RUN: INT 4: Wash & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24: 9

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 20	REC2 220	REC3 330	REC4 20	REC5 20	REC6 70	REC7 240
1	*	0.0	0.3	0.0	0.4	0.0	0.6	0.1
2	*	0.0	0.1	0.0	0.1	0.0	0.2	0.1
3	*	0.0	0.1	0.0	0.1	0.0	0.2	0.1
4	*	0.0	0.1	0.0	0.0	0.0	0.1	0.0
5	*	0.0	0.1	0.4	0.0	0.1	0.1	0.6
6	*	0.0	0.0	0.1	0.0	0.2	0.1	0.0
7	*	0.0	0.0	0.0	0.0	0.2	0.1	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.6	0.7	0.2	0.1	0.0	0.1
10	*	0.3	0.3	0.3	0.2	0.1	0.0	0.0
11	*	0.5	0.0	0.2	0.2	0.1	0.0	0.0
12	*	0.2	0.0	0.1	0.1	0.0	0.0	0.0
13	*	0.0	0.1	0.0	0.0	0.2	0.0	0.0
14	*	0.8	0.4	0.7	0.8	0.6	0.7	0.8

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'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 6 ID 1'    276    120.5    1.8
'REC INT 6 ID 2'    305.8    134.7    1.8
'REC INT 6 ID 3'    306.8    111    1.8
'REC INT 6 ID 4'    281.1    97.3    1.8
'REC INT 6 ID 5'    276.6    171.5    1.8
'REC INT 6 ID 6'    300    172.4    1.8
'REC INT 6 ID 7'    361.3    137.2    1.8
'REC INT 6 ID 8'    220.5    74.3    1.8
'REC INT 6 ID 9'    214.6    99.7    1.8
'REC INT 6 ID 10'    353.2    160.7    1.8
'INT 6: Atlantic & North State 2009'   15   1  1  'C'
1
'Approach WB'    'AG'    430.1     190.8    298.6     126.3    2170.    11.73    0.
  16.972
2
'Queue WBL'    'AG'    310.6     119.0    430.1     190.8    0.    3.6574    1
105   64   4   200   66.945   1900   2   3
2
'Queue WBT4'    'AG'    309.7     122.8    430.1     190.8    0.    3.6574    4
105   64   4   1770   66.945   5661   2   3
2
'Queue WBR'    'AG'    308.3     129.6    430.1     190.8    0.    3.6574    1
105   64   4   200   66.945   1900   2   3
1
'Departure WB'    'AG'    298.6     126.3    176.1     58.8    1160.    11.73    0.
  16.972
1
'Approach NB'    'AG'    317.5     57.4    298.5     117.1    1000.    11.73    0.
 13.010
2
'Queue NBL'    'AG'    298.8     105.2    317.5     57.4    0.    3.6574    1
105   97   4   300   66.945   1900   2   3
2
'Queue NBT2'    'AG'    303.2     107.7    317.5     57.4    0.    3.3526    2
105   49   4   700   66.945   2226   2   3
1
'Departure NB'    'AG'    298.5     117.1    295.5     202.6    900.    11.73    0.
  13.010
1
'Approach SB'    'AG'    283.4     202.6    287.8     111.9    630.    11.73    0.
 14.229
2
'Queue SBT2'    'AG'    282.6     122.3    283.4     202.6    0.    4.5717    2
105   61   4   280   66.945   3504   2   3
2
'Queue SBR'    'AG'    289.6     126.3    283.4     202.6    0.    3.6574    1
105   61   4   350   66.945   1425   2   3
1
'Departure SB'    'AG'    287.8     111.9    317.5     57.4    480.    11.73    0.
 14.229
1
'Exit 8 On-Ramp'    'AG'    294.0     111.9    176.1     58.8    1260.    14.972
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    9700.    12.524
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 6: Atlantic & North State 2009

DATE : 1/21/10
TIME : 16:57:19

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (M) * X1	Y1	X2	Y2	* LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	* 430.1	190.8	298.6	126.3 *	146.	244.	AG	2170.	11.7	0.0	17.0		
2. Queue WBL	* 310.6	119.0	328.9	130.0 *	21.	59.	AG	109.	100.0	0.0	3.7	0.32	3.6
3. Queue WBT4	* 309.7	122.8	350.8	146.0 *	47.	61.	AG	438.	100.0	0.0	3.7	0.23	7.9
4. Queue WBR	* 308.3	129.6	327.4	139.2 *	21.	63.	AG	109.	100.0	0.0	3.7	0.32	3.6
5. Departure WB	* 298.6	126.3	176.1	58.8 *	140.	241.	AG	1160.	11.7	0.0	17.0		
6. Approach NB	* 317.5	57.4	298.5	117.1 *	63.	342.	AG	1000.	11.7	0.0	13.0		
7. Queue NBL	* 298.8	105.2	626.8	-733.3 *	900.	159.	AG	166.	100.0	0.0	3.7	8.33	150.1
8. Queue NBT2	* 303.2	107.7	311.0	80.2 *	29.	164.	AG	168.	100.0	0.0	3.4	0.33	4.8
9. Departure NB	* 298.5	117.1	295.5	202.6 *	86.	358.	AG	900.	11.7	0.0	13.0		
10. Approach SB	* 283.4	202.6	287.8	111.9 *	91.	177.	AG	630.	11.7	0.0	14.2		
11. Queue SBT2	* 282.6	122.3	282.7	136.5 *	14.	1.	AG	209.	100.0	0.0	4.6	0.11	2.4
12. Queue SBR	* 289.6	126.3	286.7	161.8 *	36.	355.	AG	104.	100.0	0.0	3.7	0.68	5.9
13. Departure SB	* 287.8	111.9	317.5	57.4 *	62.	151.	AG	480.	11.7	0.0	14.2		
14. Exit 8 On-Ramp	* 294.0	111.9	176.1	58.8 *	129.	246.	AG	1260.	15.0	0.0	9.1		
15. I-95 Overpass	* 222.0	55.5	404.6	138.1 *	200.	66.	BR	9700.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 6: Atlantic & North State 2009

DATE : 1/21/10
TIME : 16:57:19

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	64	4.0	200	1900	66.94	2	3
3. Queue WBT4	*	105	64	4.0	1770	5661	66.94	2	3
4. Queue WBR	*	105	64	4.0	200	1900	66.94	2	3
7. Queue NBL	*	105	97	4.0	300	1900	66.94	2	3
8. Queue NBT2	*	105	49	4.0	700	2226	66.94	2	3
11. Queue SBT2	*	105	61	4.0	280	3504	66.94	2	3
12. Queue SBR	*	105	61	4.0	350	1425	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 6 ID 1	*	276.0	120.5	1.8	*
2. REC INT 6 ID 2	*	305.8	134.7	1.8	*
3. REC INT 6 ID 3	*	306.8	111.0	1.8	*
4. REC INT 6 ID 4	*	281.1	97.3	1.8	*
5. REC INT 6 ID 5	*	276.6	171.5	1.8	*
6. REC INT 6 ID 6	*	300.0	172.4	1.8	*
7. REC INT 6 ID 7	*	361.3	137.2	1.8	*
8. REC INT 6 ID 8	*	220.5	74.3	1.8	*
9. REC INT 6 ID 9	*	214.6	99.7	1.8	*
10. REC INT 6 ID 10	*	353.2	160.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 6: Atlantic & North State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	0.5	0.6	1.6	1.8	0.2	0.5	0.8	1.3	0.1	0.1
10.	*	0.9	0.5	1.7	1.9	0.2	0.4	0.7	1.5	0.2	0.1
20.	*	1.1	0.5	1.8	2.1	0.3	0.2	0.8	1.7	0.2	0.1
30.	*	1.4	0.6	2.3	2.2	0.4	0.2	0.7	2.0	0.2	0.2
40.	*	1.8	1.0	2.5	2.3	0.5	0.1	0.7	2.7	0.4	0.3
50.	*	2.3	1.7	2.3	2.5	0.4	0.1	0.7	3.2	0.9	0.7
60.	*	3.0	2.4	1.7	2.4	0.4	0.2	0.5	3.3	1.6	1.1
70.	*	3.3	2.8	1.4	2.0	0.6	0.4	0.3	2.9	1.9	1.4
80.	*	3.2	3.0	1.0	1.9	0.9	0.7	0.3	2.4	2.1	1.6
90.	*	2.8	3.2	0.9	1.7	1.1	0.9	0.3	1.9	2.3	1.6
100.	*	2.4	3.3	0.9	1.6	1.4	1.0	0.4	1.3	2.1	1.6
110.	*	2.3	3.0	0.9	1.5	1.5	1.2	0.5	1.1	1.8	1.5
120.	*	2.2	2.8	0.9	1.5	1.8	1.4	0.6	0.9	1.7	1.6
130.	*	2.4	2.7	0.8	1.5	2.0	1.5	0.6	0.7	1.7	1.6
140.	*	2.5	2.5	0.9	1.2	2.0	1.6	0.6	0.7	1.6	1.6
150.	*	2.4	2.5	1.3	1.2	2.3	1.9	0.7	0.7	1.5	1.7
160.	*	2.1	2.7	1.8	0.9	2.2	2.1	0.8	0.5	1.2	1.8
170.	*	1.8	2.8	2.2	0.8	2.0	2.0	0.9	0.3	1.1	2.0
180.	*	1.7	2.5	2.3	0.7	1.6	2.4	0.9	0.2	1.0	2.1
190.	*	1.8	2.7	2.3	0.7	1.1	2.4	0.9	0.3	0.9	2.5
200.	*	1.9	2.9	2.3	0.8	1.1	2.1	0.9	0.4	0.9	2.8
210.	*	1.9	2.9	2.1	0.8	0.8	2.1	1.2	0.3	0.8	3.2
220.	*	1.8	2.9	2.0	0.7	0.7	1.7	1.4	0.3	0.6	3.5
230.	*	1.8	2.9	2.1	0.8	0.4	1.5	1.7	0.7	0.4	3.3
240.	*	1.6	2.9	2.2	1.0	0.2	0.9	1.9	1.1	0.2	3.0
250.	*	1.2	2.6	2.4	1.4	0.0	0.7	2.4	1.4	0.0	2.3
260.	*	0.8	2.1	2.3	1.5	0.0	0.6	2.6	1.6	0.0	1.5
270.	*	0.6	1.5	2.2	1.6	0.0	0.5	2.4	1.6	0.0	0.9
280.	*	0.3	1.2	1.7	1.5	0.0	0.5	2.1	1.4	0.0	0.7
290.	*	0.2	0.9	1.5	1.4	0.0	0.5	1.8	1.3	0.0	0.4
300.	*	0.2	0.9	1.4	1.3	0.0	0.5	1.5	1.1	0.0	0.4
310.	*	0.1	0.9	1.7	1.1	0.0	0.6	1.2	1.1	0.0	0.2
320.	*	0.1	0.9	1.5	1.1	0.0	0.6	1.1	1.0	0.0	0.1
330.	*	0.1	0.9	1.7	1.1	0.0	0.6	0.9	1.2	0.0	0.0
340.	*	0.1	0.9	1.6	1.3	0.0	0.6	0.8	1.3	0.0	0.0
350.	*	0.2	0.8	1.5	1.4	0.1	0.5	0.7	1.2	0.1	0.0
360.	*	0.5	0.6	1.6	1.8	0.2	0.5	0.8	1.3	0.1	0.1
MAX	*	3.3	3.3	2.5	2.5	2.3	2.4	2.6	3.3	2.3	3.5
DEGR.	*	70	100	40	50	150	180	260	60	90	220

THE HIGHEST CONCENTRATION OF 3.50 PPM OCCURRED AT RECEPTOR REC10.

JOB: Stamford Microscale EIE RUN: INT 6: Atlantic & North State 2009

DATE : 1/21/10
TIME : 16:57:19

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 70	REC2 100	REC3 40	REC4 50	REC5 150	REC6 180	REC7 260	REC8 60	REC9 90	REC10 220
1	*	0.7	1.1	0.7	0.5	0.2	0.2	0.4	0.2	0.1	1.2
2	*	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3	*	0.3	0.8	0.8	0.3	0.1	0.1	0.6	0.1	0.1	0.7
4	*	0.1	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
5	*	0.4	0.0	0.0	0.1	0.1	0.1	0.1	0.6	0.3	0.1
6	*	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1
7	*	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.0	0.0	0.1	0.2	0.6	0.1	0.0	0.0	0.0
10	*	0.2	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0
11	*	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	*	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
14	*	0.0	0.0	0.0	0.3	0.0	0.1	0.1	1.1	0.3	0.1
15	*	1.0	1.0	0.7	1.0	0.9	1.0	1.1	1.3	1.3	1.2

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 6 ID 1'    276    120.5    1.8
'REC INT 6 ID 2'    305.8    134.7    1.8
'REC INT 6 ID 3'    306.8    111    1.8
'REC INT 6 ID 4'    281.1    97.3    1.8
'REC INT 6 ID 5'    276.6    171.5    1.8
'REC INT 6 ID 6'    300    172.4    1.8
'REC INT 6 ID 7'    361.3    137.2    1.8
'REC INT 6 ID 8'    220.5    74.3    1.8
'REC INT 6 ID 9'    214.6    99.7    1.8
'REC INT 6 ID 10'    353.2    160.7    1.8
'INT 6: Atl & N. State 2012 Build'   15   1  1  'C'
1
'Approach WB'    'AG'    430.1     190.8    298.6     126.3    2587.    10.15    0.
  16.972
2
'Queue WBL'    'AG'    310.6     119.0    430.1     190.8    0.    3.6574    1
105   64   4   431   56.345   1900   2   3
2
'Queue WBT4'    'AG'    309.7     122.8    430.1     190.8    0.    3.6574    4
105   64   4   1899   56.345   5661   2   3
2
'Queue WBR'    'AG'    308.3     129.6    430.1     190.8    0.    3.6574    1
105   64   4   257   56.345   1900   2   3
1
'Departure WB'    'AG'    298.6     126.3    176.1     58.8    1488.    10.15    0.
  16.972
1
'Approach NB'    'AG'    317.5     57.4    298.5     117.1    1304.    10.15    0.
 13.010
2
'Queue NBL'    'AG'    298.8     105.2    317.5     57.4    0.    3.6574    1
105   97   4   411   56.345   1900   2   3
2
'Queue NBT2'    'AG'    303.2     107.7    317.5     57.4    0.    3.3526    2
105   49   4   890   56.345   2226   2   3
1
'Departure NB'    'AG'    298.5     117.1    295.5     202.6    1150.    10.15    0.
   13.010
1
'Approach SB'    'AG'    283.4     202.6    287.8     111.9    989.    10.15    0.
 14.229
2
'Queue SBT2'    'AG'    282.6     122.3    283.4     202.6    0.    4.5717    2
105   61   4   506   56.345   3504   2   3
2
'Queue SBR'    'AG'    289.6     126.3    283.4     202.6    0.    3.6574    1
105   61   4   483   56.345   1425   2   3
1
'Departure SB'    'AG'    287.8     111.9    317.5     57.4    937.    10.15    0.
 14.229
1
'Exit 8 On-Ramp'    'AG'    294.0     111.9    176.1     58.8    1488.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    9700.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(M)	(DEG)		(G/MI)		(M)	(M)		(VEH)
1. Approach WB	*	430.1	190.8	298.6	126.3	*	146.	244.	AG	2587.	10.1	0.0	17.0		
2. Queue WBL	*	310.6	119.0	350.0	142.7	*	46.	59.	AG	92.	100.0	0.0	3.7	0.68	7.7
3. Queue WBT4	*	309.7	122.8	353.7	147.7	*	51.	61.	AG	368.	100.0	0.0	3.7	0.25	8.4
4. Queue WBR	*	308.3	129.6	332.8	141.9	*	27.	63.	AG	92.	100.0	0.0	3.7	0.41	4.6
5. Departure WB	*	298.6	126.3	176.1	58.8	*	140.	241.	AG	1488.	10.1	0.0	17.0		
6. Approach NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1304.	10.1	0.0	13.0		
7. Queue NBL	*	298.8	105.2	762.7	-1080.7	*	1273.	159.	AG	140.	100.0	0.0	3.7	****	212.2
8. Queue NBT2	*	303.2	107.7	313.1	72.7	*	36.	164.	AG	141.	100.0	0.0	3.4	0.42	6.1
9. Departure NB	*	298.5	117.1	295.5	202.6	*	86.	358.	AG	1150.	10.1	0.0	13.0		
10. Approach SB	*	283.4	202.6	287.8	111.9	*	91.	177.	AG	989.	10.1	0.0	14.2		
11. Queue SBT2	*	282.6	122.3	282.9	148.0	*	26.	1.	AG	176.	100.0	0.0	4.6	0.20	4.3
12. Queue SBR	*	289.6	126.3	284.7	186.6	*	60.	355.	AG	88.	100.0	0.0	3.7	0.94	10.1
13. Departure SB	*	287.8	111.9	317.5	57.4	*	62.	151.	AG	937.	10.1	0.0	14.2		
14. Exit 8 On-Ramp	*	294.0	111.9	176.1	58.8	*	129.	246.	AG	1488.	12.6	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	9700.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	64	4.0	431	1900	56.35	2	3
3. Queue WBT4	*	105	64	4.0	1899	5661	56.35	2	3
4. Queue WBR	*	105	64	4.0	257	1900	56.35	2	3
7. Queue NBL	*	105	97	4.0	411	1900	56.35	2	3
8. Queue NBT2	*	105	49	4.0	890	2226	56.35	2	3
11. Queue SBT2	*	105	61	4.0	506	3504	56.35	2	3
12. Queue SBR	*	105	61	4.0	483	1425	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 6 ID 1	*	276.0	120.5	1.8	*
2. REC INT 6 ID 2	*	305.8	134.7	1.8	*
3. REC INT 6 ID 3	*	306.8	111.0	1.8	*
4. REC INT 6 ID 4	*	281.1	97.3	1.8	*
5. REC INT 6 ID 5	*	276.6	171.5	1.8	*
6. REC INT 6 ID 6	*	300.0	172.4	1.8	*
7. REC INT 6 ID 7	*	361.3	137.2	1.8	*
8. REC INT 6 ID 8	*	220.5	74.3	1.8	*
9. REC INT 6 ID 9	*	214.6	99.7	1.8	*
10. REC INT 6 ID 10	*	353.2	160.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.8	0.6	1.5	1.8	0.2	0.5	0.8	1.3	0.1	0.1
10.	* 1.1	0.5	1.6	2.1	0.3	0.4	0.7	1.5	0.1	0.1
20.	* 1.3	0.4	1.7	2.0	0.5	0.3	0.8	1.7	0.2	0.1
30.	* 1.4	0.6	2.2	2.2	0.6	0.2	0.7	2.1	0.2	0.2
40.	* 1.7	0.9	2.3	2.4	0.7	0.1	0.7	2.7	0.4	0.3
50.	* 2.4	1.5	2.1	2.6	0.7	0.1	0.6	3.3	0.8	0.7
60.	* 3.0	2.3	1.7	2.5	0.7	0.2	0.5	3.1	1.5	1.1
70.	* 3.4	2.7	1.2	1.9	0.9	0.4	0.3	3.0	1.8	1.5
80.	* 3.1	3.0	0.9	1.6	1.2	0.6	0.2	2.3	1.9	1.6
90.	* 2.7	2.9	0.8	1.6	1.3	0.8	0.3	1.8	2.1	1.5
100.	* 2.2	2.9	0.8	1.5	1.6	0.9	0.4	1.2	2.1	1.5
110.	* 2.3	2.7	0.8	1.5	1.7	1.1	0.4	1.0	1.8	1.4
120.	* 2.3	2.5	0.8	1.5	1.9	1.3	0.5	0.8	1.6	1.5
130.	* 2.4	2.5	0.7	1.4	2.0	1.4	0.6	0.7	1.5	1.5
140.	* 2.4	2.3	0.9	1.1	1.9	1.5	0.6	0.6	1.5	1.5
150.	* 2.4	2.3	1.2	1.1	2.3	1.9	0.6	0.6	1.4	1.6
160.	* 2.0	2.4	1.7	0.8	2.2	2.1	0.7	0.4	1.1	1.8
170.	* 1.8	2.6	2.1	0.7	2.1	2.1	0.8	0.3	1.0	1.9
180.	* 1.7	2.5	2.2	0.6	1.4	2.3	0.8	0.2	0.9	2.1
190.	* 1.7	2.6	2.2	0.6	1.2	2.4	0.8	0.3	0.9	2.5
200.	* 1.9	2.8	2.2	0.7	1.1	2.1	0.8	0.3	0.9	2.8
210.	* 1.8	2.8	2.0	0.7	0.8	2.1	1.0	0.3	0.8	3.3
220.	* 1.8	3.0	2.0	0.6	0.6	1.8	1.3	0.4	0.6	3.5
230.	* 1.8	3.1	2.0	0.7	0.4	1.4	1.6	0.7	0.3	3.2
240.	* 1.7	3.0	2.1	1.0	0.1	1.0	1.8	1.2	0.2	2.9
250.	* 1.2	2.7	2.4	1.3	0.0	0.7	2.1	1.5	0.0	2.3
260.	* 0.8	2.3	2.3	1.6	0.0	0.7	2.6	1.6	0.0	1.4
270.	* 0.5	1.8	2.0	1.6	0.0	0.6	2.5	1.6	0.0	0.8
280.	* 0.3	1.4	1.8	1.5	0.0	0.6	2.1	1.5	0.0	0.6
290.	* 0.2	1.1	1.9	1.4	0.0	0.6	1.8	1.3	0.0	0.5
300.	* 0.2	1.2	1.7	1.2	0.0	0.7	1.7	1.2	0.0	0.3
310.	* 0.2	1.0	1.6	1.1	0.0	0.7	1.4	1.0	0.0	0.2
320.	* 0.1	0.9	1.7	1.1	0.0	0.7	1.2	1.1	0.0	0.1
330.	* 0.0	1.1	1.8	1.1	0.0	0.7	1.1	1.3	0.0	0.0
340.	* 0.1	1.1	1.8	1.3	0.1	0.7	0.9	1.4	0.0	0.0
350.	* 0.3	0.8	1.7	1.4	0.1	0.6	0.8	1.3	0.0	0.0
360.	* 0.8	0.6	1.5	1.8	0.2	0.5	0.8	1.3	0.1	0.1
MAX	* 3.4	3.1	2.4	2.6	2.3	2.4	2.6	3.3	2.1	3.5
DEGR.	* 70	230	250	50	150	190	260	50	90	220

THE HIGHEST CONCENTRATION OF 3.50 PPM OCCURRED AT RECEPTOR REC10.

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 Build

DATE : 1/22/10
TIME : 14:52:18

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 70	REC2 230	REC3 250	REC4 50	REC5 150	REC6 190	REC7 260	REC8 50	REC9 90	REC10 220
1	*	0.7	0.6	0.0	0.5	0.2	0.1	0.4	0.2	0.1	1.2
2	*	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1
3	*	0.3	0.0	0.0	0.3	0.1	0.0	0.5	0.1	0.0	0.6
4	*	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
5	*	0.5	0.6	0.3	0.1	0.1	0.1	0.2	0.7	0.4	0.1
6	*	0.0	0.0	0.4	0.2	0.1	0.1	0.0	0.0	0.1	0.1
7	*	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.4	0.0	0.1	0.2	0.6	0.1	0.1	0.0	0.0
10	*	0.3	0.2	0.0	0.0	0.4	0.2	0.1	0.1	0.0	0.0
11	*	0.3	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
12	*	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.1
14	*	0.0	0.4	0.6	0.3	0.0	0.1	0.1	1.1	0.3	0.1
15	*	0.8	0.8	0.7	0.8	0.8	0.8	0.9	1.0	1.1	1.1

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 6 ID 1'    276    120.5    1.8
'REC INT 6 ID 2'    305.8    134.7    1.8
'REC INT 6 ID 3'    306.8    111    1.8
'REC INT 6 ID 4'    281.1    97.3    1.8
'REC INT 6 ID 5'    276.6    171.5    1.8
'REC INT 6 ID 6'    300    172.4    1.8
'REC INT 6 ID 7'    361.3    137.2    1.8
'REC INT 6 ID 8'    220.5    74.3    1.8
'REC INT 6 ID 9'    214.6    99.7    1.8
'REC INT 6 ID 10'    353.2    160.7    1.8
'INT 6: Atl & N. State 2012 No-Build'   15   1  1  'C'
1
'Approach WB'    'AG'    430.1     190.8    298.6     126.3    2582.    10.15    0.
  16.972
2
'Queue WBL'    'AG'    310.6     119.0    430.1     190.8    0.    3.6574    1
105   64   4   426   56.345   1900   2   3
2
'Queue WBT4'    'AG'    309.7     122.8    430.1     190.8    0.    3.6574    4
105   64   4   1899   56.345   5661   2   3
2
'Queue WBR'    'AG'    308.3     129.6    430.1     190.8    0.    3.6574    1
105   64   4   257   56.345   1900   2   3
1
'Departure WB'    'AG'    298.6     126.3    176.1     58.8    1305.    10.15    0.
  16.972
1
'Approach NB'    'AG'    317.5     57.4    298.5     117.1    1301.    10.15    0.
 13.010
2
'Queue NBL'    'AG'    298.8     105.2    317.5     57.4    0.    3.6574    1
105   97   4   411   56.345   1900   2   3
2
'Queue NBT2'    'AG'    303.2     107.7    317.5     57.4    0.    3.3526    2
105   49   4   890   56.345   2226   2   3
1
'Departure NB'    'AG'    298.5     117.1    295.5     202.6    1147.    10.15    0.
   13.010
1
'Approach SB'    'AG'    283.4     202.6    287.8     111.9    960.    10.15    0.
 14.229
2
'Queue SBT2'    'AG'    282.6     122.3    283.4     202.6    0.    4.5717    2
105   61   4   477   56.345   3504   2   3
2
'Queue SBR'    'AG'    289.6     126.3    283.4     202.6    0.    3.6574    1
105   61   4   483   56.345   1425   2   3
1
'Departure SB'    'AG'    287.8     111.9    317.5     57.4    903.    10.15    0.
 14.229
1
'Exit 8 On-Ramp'    'AG'    294.0     111.9    176.1     58.8    1488.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    9700.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	430.1	190.8	298.6	126.3	*	146.	244.	AG	2582.	10.1	0.0	17.0		
2. Queue WBL	*	310.6	119.0	349.6	142.4	*	45.	59.	AG	92.	100.0	0.0	3.7	0.67	7.6
3. Queue WBT4	*	309.7	122.8	353.7	147.7	*	51.	61.	AG	368.	100.0	0.0	3.7	0.25	8.4
4. Queue WBR	*	308.3	129.6	332.8	141.9	*	27.	63.	AG	92.	100.0	0.0	3.7	0.41	4.6
5. Departure WB	*	298.6	126.3	176.1	58.8	*	140.	241.	AG	1305.	10.1	0.0	17.0		
6. Approach NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1301.	10.1	0.0	13.0		
7. Queue NBL	*	298.8	105.2	762.7	-1080.7	*	1273.	159.	AG	140.	100.0	0.0	3.7	****	212.2
8. Queue NBT2	*	303.2	107.7	313.1	72.7	*	36.	164.	AG	141.	100.0	0.0	3.4	0.42	6.1
9. Departure NB	*	298.5	117.1	295.5	202.6	*	86.	358.	AG	1147.	10.1	0.0	13.0		
10. Approach SB	*	283.4	202.6	287.8	111.9	*	91.	177.	AG	960.	10.1	0.0	14.2		
11. Queue SBT2	*	282.6	122.3	282.8	146.5	*	24.	1.	AG	176.	100.0	0.0	4.6	0.19	4.0
12. Queue SBR	*	289.6	126.3	284.7	186.6	*	60.	355.	AG	88.	100.0	0.0	3.7	0.94	10.1
13. Departure SB	*	287.8	111.9	317.5	57.4	*	62.	151.	AG	903.	10.1	0.0	14.2		
14. Exit 8 On-Ramp	*	294.0	111.9	176.1	58.8	*	129.	246.	AG	1488.	12.6	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	9700.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	64	4.0	426	1900	56.35	2	3
3. Queue WBT4	*	105	64	4.0	1899	5661	56.35	2	3
4. Queue WBR	*	105	64	4.0	257	1900	56.35	2	3
7. Queue NBL	*	105	97	4.0	411	1900	56.35	2	3
8. Queue NBT2	*	105	49	4.0	890	2226	56.35	2	3
11. Queue SBT2	*	105	61	4.0	477	3504	56.35	2	3
12. Queue SBR	*	105	61	4.0	483	1425	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 6 ID 1	*	276.0	120.5	1.8	*
2. REC INT 6 ID 2	*	305.8	134.7	1.8	*
3. REC INT 6 ID 3	*	306.8	111.0	1.8	*
4. REC INT 6 ID 4	*	281.1	97.3	1.8	*
5. REC INT 6 ID 5	*	276.6	171.5	1.8	*
6. REC INT 6 ID 6	*	300.0	172.4	1.8	*
7. REC INT 6 ID 7	*	361.3	137.2	1.8	*
8. REC INT 6 ID 8	*	220.5	74.3	1.8	*
9. REC INT 6 ID 9	*	214.6	99.7	1.8	*
10. REC INT 6 ID 10	*	353.2	160.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	0.8	0.6	1.5	1.8	0.2	0.5	0.8	1.2	0.1	0.1
10.	*	1.1	0.5	1.6	2.1	0.3	0.4	0.7	1.5	0.1	0.1
20.	*	1.3	0.4	1.7	2.0	0.5	0.3	0.8	1.6	0.2	0.1
30.	*	1.3	0.6	2.2	2.1	0.5	0.2	0.7	2.1	0.2	0.2
40.	*	1.7	0.9	2.3	2.3	0.6	0.1	0.7	2.6	0.4	0.3
50.	*	2.4	1.5	2.1	2.6	0.7	0.1	0.6	3.2	0.8	0.7
60.	*	2.9	2.3	1.7	2.5	0.7	0.2	0.5	3.0	1.5	1.1
70.	*	3.3	2.7	1.2	1.9	0.9	0.4	0.3	2.9	1.8	1.5
80.	*	3.0	3.0	0.9	1.6	1.2	0.6	0.2	2.3	1.9	1.6
90.	*	2.6	2.9	0.8	1.6	1.3	0.8	0.3	1.8	2.0	1.5
100.	*	2.2	2.9	0.8	1.5	1.6	0.9	0.4	1.2	2.0	1.5
110.	*	2.2	2.7	0.8	1.5	1.7	1.1	0.4	0.9	1.7	1.4
120.	*	2.2	2.5	0.8	1.5	1.9	1.3	0.5	0.8	1.6	1.5
130.	*	2.3	2.5	0.7	1.4	2.0	1.4	0.6	0.7	1.5	1.5
140.	*	2.3	2.3	0.9	1.1	1.9	1.5	0.6	0.6	1.5	1.5
150.	*	2.4	2.3	1.2	1.1	2.3	1.9	0.6	0.6	1.4	1.6
160.	*	1.9	2.4	1.7	0.8	2.2	2.1	0.7	0.4	1.1	1.8
170.	*	1.7	2.6	2.1	0.7	1.9	2.1	0.8	0.3	1.0	1.9
180.	*	1.6	2.5	2.2	0.6	1.3	2.3	0.8	0.2	0.9	2.1
190.	*	1.6	2.5	2.2	0.6	1.1	2.4	0.8	0.2	0.9	2.5
200.	*	1.8	2.8	2.2	0.7	1.0	2.1	0.8	0.3	0.8	2.7
210.	*	1.7	2.8	2.0	0.7	0.7	2.0	1.0	0.3	0.8	3.3
220.	*	1.7	3.0	2.0	0.6	0.6	1.7	1.3	0.3	0.5	3.5
230.	*	1.7	3.0	2.0	0.6	0.4	1.4	1.6	0.6	0.3	3.2
240.	*	1.6	2.9	2.1	0.9	0.1	1.0	1.8	1.1	0.2	2.9
250.	*	1.1	2.6	2.4	1.2	0.0	0.7	2.0	1.4	0.0	2.3
260.	*	0.7	2.2	2.2	1.5	0.0	0.7	2.5	1.5	0.0	1.3
270.	*	0.5	1.8	2.0	1.6	0.0	0.6	2.5	1.5	0.0	0.8
280.	*	0.3	1.3	1.7	1.4	0.0	0.6	2.1	1.4	0.0	0.6
290.	*	0.2	1.1	1.7	1.3	0.0	0.6	1.8	1.3	0.0	0.5
300.	*	0.2	1.2	1.7	1.2	0.0	0.7	1.7	1.1	0.0	0.3
310.	*	0.1	0.9	1.6	1.1	0.0	0.7	1.4	1.0	0.0	0.2
320.	*	0.1	0.9	1.7	1.1	0.0	0.7	1.2	1.0	0.0	0.1
330.	*	0.0	1.1	1.8	1.1	0.0	0.7	1.1	1.2	0.0	0.0
340.	*	0.1	1.0	1.7	1.3	0.1	0.7	0.9	1.3	0.0	0.0
350.	*	0.3	0.8	1.6	1.4	0.1	0.5	0.8	1.2	0.0	0.0
360.	*	0.8	0.6	1.5	1.8	0.2	0.5	0.8	1.2	0.1	0.1
MAX	*	3.3	3.0	2.4	2.6	2.3	2.4	2.5	3.2	2.0	3.5
DEGR.	*	70	80	250	50	150	190	270	50	90	220

THE HIGHEST CONCENTRATION OF 3.50 PPM OCCURRED AT RECEPTOR REC10.

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 70	REC2 80	REC3 250	REC4 50	REC5 150	REC6 190	REC7 270	REC8 50	REC9 90	REC10 220
1	*	0.7	1.5	0.0	0.5	0.2	0.1	0.6	0.2	0.1	1.2
2	*	0.1	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1
3	*	0.3	0.5	0.0	0.3	0.1	0.0	0.6	0.1	0.0	0.6
4	*	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
5	*	0.4	0.0	0.3	0.1	0.1	0.1	0.1	0.6	0.3	0.1
6	*	0.0	0.0	0.4	0.2	0.1	0.1	0.0	0.0	0.1	0.1
7	*	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.0	0.0	0.1	0.2	0.6	0.1	0.1	0.0	0.0
10	*	0.3	0.0	0.0	0.0	0.4	0.2	0.1	0.1	0.0	0.0
11	*	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
12	*	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.1
14	*	0.0	0.0	0.6	0.3	0.0	0.1	0.0	1.1	0.3	0.1
15	*	0.8	0.7	0.7	0.8	0.8	0.8	0.7	1.0	1.1	1.1

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'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 6 ID 1'    276    120.5    1.8
'REC INT 6 ID 2'    305.8    134.7    1.8
'REC INT 6 ID 3'    306.8    111    1.8
'REC INT 6 ID 4'    281.1    97.3    1.8
'REC INT 6 ID 5'    276.6    171.5    1.8
'REC INT 6 ID 6'    300    172.4    1.8
'REC INT 6 ID 7'    361.3    137.2    1.8
'REC INT 6 ID 8'    220.5    74.3    1.8
'REC INT 6 ID 9'    214.6    99.7    1.8
'REC INT 6 ID 10'    353.2    160.7    1.8
'INT 6: Atl & N. State 2029 Build'   15   1  1  'C'
1
'Approach WB'    'AG'    430.1     190.8    298.6     126.3    2985.    8.189    0.
  16.972
2
'Queue WBL'    'AG'    310.6     119.0    430.1     190.8    0.    3.6574    1
105   64   4   495   44.4925   1900   2   3
2
'Queue WBT4'    'AG'    309.7     122.8    430.1     190.8    0.    3.6574    4
105   64   4   2190   44.4925   5661   2   3
2
'Queue WBR'    'AG'    308.3     129.6    430.1     190.8    0.    3.6574    1
105   64   4   300   44.4925   1900   2   3
1
'Departure WB'    'AG'    298.6     126.3    176.1     58.8    1510.    8.189    0.
  16.972
1
'Approach NB'    'AG'    317.5     57.4    298.5     117.1    1493.    8.189    0.
 13.010
2
'Queue NBL'    'AG'    298.8     105.2    317.5     57.4    0.    3.6574    1
105   97   4   480   44.4925   1900   2   3
2
'Queue NBT2'    'AG'    303.2     107.7    317.5     57.4    0.    3.3526    2
105   49   4   1013   44.4925   2226   2   3
1
'Departure NB'    'AG'    298.5     117.1    295.5     202.6    1313.    8.189    0.
   13.010
1
'Approach SB'    'AG'    283.4     202.6    287.8     111.9    1139.    8.189    0.
  14.229
2
'Queue SBT2'    'AG'    282.6     122.3    283.4     202.6    0.    4.5717    2
105   61   4   579   44.4925   3504   2   3
2
'Queue SBR'    'AG'    289.6     126.3    283.4     202.6    0.    3.6574    1
105   61   4   560   44.4925   1425   2   3
1
'Departure SB'    'AG'    287.8     111.9    317.5     57.4    1074.    8.189    0.
  14.229
1
'Exit 8 On-Ramp'    'AG'    294.0     111.9    176.1     58.8    1720.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    9700.    8.738    8.
   130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 Build

DATE : 1/22/10
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The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (M) X1	Y1	X2	Y2	* LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach WB	* 430.1	190.8	298.6	126.3 *	146.	244.	AG	2985.	8.2	0.0	17.0		
2. Queue WBL	* 310.6	119.0	355.9	146.2 *	53.	59.	AG	73.	100.0	0.0	3.7	0.78	8.8
3. Queue WBT4	* 309.7	122.8	360.5	151.5 *	58.	61.	AG	291.	100.0	0.0	3.7	0.29	9.7
4. Queue WBR	* 308.3	129.6	336.9	144.0 *	32.	63.	AG	73.	100.0	0.0	3.7	0.47	5.3
5. Departure WB	* 298.6	126.3	176.1	58.8 *	140.	241.	AG	1510.	8.2	0.0	17.0		
6. Approach NB	* 317.5	57.4	298.5	117.1 *	63.	342.	AG	1493.	8.2	0.0	13.0		
7. Queue NBL	* 298.8	105.2	847.2	-1296.7 *	1505.	159.	AG	110.	100.0	0.0	3.7	****	250.9
8. Queue NBT2	* 303.2	107.7	314.5	68.0 *	41.	164.	AG	111.	100.0	0.0	3.4	0.48	6.9
9. Departure NB	* 298.5	117.1	295.5	202.6 *	86.	358.	AG	1313.	8.2	0.0	13.0		
10. Approach SB	* 283.4	202.6	287.8	111.9 *	91.	177.	AG	1139.	8.2	0.0	14.2		
11. Queue SBT2	* 282.6	122.3	282.9	151.7 *	29.	1.	AG	139.	100.0	0.0	4.6	0.23	4.9
12. Queue SBR	* 289.6	126.3	271.9	344.4 *	219.	355.	AG	69.	100.0	0.0	3.7	1.09	36.5
13. Departure SB	* 287.8	111.9	317.5	57.4 *	62.	151.	AG	1074.	8.2	0.0	14.2		
14. Exit 8 On-Ramp	* 294.0	111.9	176.1	58.8 *	129.	246.	AG	1720.	9.8	0.0	9.1		
15. I-95 Overpass	* 222.0	55.5	404.6	138.1 *	200.	66.	BR	9700.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 Build

DATE : 1/22/10
TIME : 15:50:24

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	64	4.0	495	1900	44.49	2	3
3. Queue WBT4	*	105	64	4.0	2190	5661	44.49	2	3
4. Queue WBR	*	105	64	4.0	300	1900	44.49	2	3
7. Queue NBL	*	105	97	4.0	480	1900	44.49	2	3
8. Queue NBT2	*	105	49	4.0	1013	2226	44.49	2	3
11. Queue SBT2	*	105	61	4.0	579	3504	44.49	2	3
12. Queue SBR	*	105	61	4.0	560	1425	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 6 ID 1	*	276.0	120.5	1.8	*
2. REC INT 6 ID 2	*	305.8	134.7	1.8	*
3. REC INT 6 ID 3	*	306.8	111.0	1.8	*
4. REC INT 6 ID 4	*	281.1	97.3	1.8	*
5. REC INT 6 ID 5	*	276.6	171.5	1.8	*
6. REC INT 6 ID 6	*	300.0	172.4	1.8	*
7. REC INT 6 ID 7	*	361.3	137.2	1.8	*
8. REC INT 6 ID 8	*	220.5	74.3	1.8	*
9. REC INT 6 ID 9	*	214.6	99.7	1.8	*
10. REC INT 6 ID 10	*	353.2	160.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.7	0.6	1.5	1.6	0.3	0.6	0.8	1.2	0.1	0.1
10.	* 0.9	0.4	1.4	2.0	0.5	0.4	0.7	1.2	0.1	0.1
20.	* 1.2	0.4	1.5	1.8	0.6	0.3	0.7	1.5	0.1	0.1
30.	* 1.3	0.5	1.7	2.0	0.6	0.2	0.7	1.8	0.2	0.2
40.	* 1.6	0.9	2.1	2.1	0.6	0.1	0.7	2.4	0.4	0.3
50.	* 2.1	1.5	1.9	2.3	0.6	0.1	0.6	2.9	0.7	0.6
60.	* 2.7	2.1	1.4	1.9	0.6	0.1	0.4	2.7	1.3	1.0
70.	* 2.6	2.4	1.0	1.7	0.8	0.4	0.3	2.3	1.6	1.4
80.	* 2.5	2.6	0.7	1.4	0.9	0.6	0.2	1.9	1.7	1.4
90.	* 2.3	2.6	0.6	1.3	1.1	0.7	0.2	1.5	1.6	1.4
100.	* 1.9	2.5	0.6	1.2	1.4	0.9	0.3	1.0	1.7	1.3
110.	* 1.7	2.3	0.6	1.2	1.5	1.0	0.4	0.7	1.5	1.3
120.	* 2.0	2.2	0.6	1.3	1.7	1.2	0.4	0.7	1.4	1.4
130.	* 2.1	2.0	0.6	1.2	1.5	1.2	0.4	0.5	1.4	1.5
140.	* 2.1	1.9	0.6	1.0	1.6	1.3	0.5	0.5	1.3	1.5
150.	* 2.0	2.0	1.1	0.9	2.1	1.5	0.5	0.5	1.3	1.7
160.	* 1.7	2.1	1.5	0.6	2.1	1.6	0.6	0.3	1.0	1.9
170.	* 1.5	2.1	1.8	0.6	1.8	1.8	0.6	0.2	1.0	2.1
180.	* 1.3	2.3	2.0	0.5	1.1	2.1	0.7	0.2	0.9	2.2
190.	* 1.3	2.3	2.0	0.5	1.0	2.2	0.7	0.2	0.8	2.2
200.	* 1.6	2.5	1.8	0.5	0.8	1.8	0.6	0.3	0.8	2.4
210.	* 1.6	2.5	1.8	0.5	0.6	1.8	0.9	0.3	0.6	2.7
220.	* 1.5	2.5	1.7	0.5	0.5	1.5	1.1	0.3	0.5	3.0
230.	* 1.6	2.5	1.7	0.5	0.2	1.4	1.2	0.6	0.2	2.7
240.	* 1.5	2.6	1.9	0.8	0.1	0.9	1.5	1.0	0.2	2.6
250.	* 1.0	2.3	2.0	1.1	0.0	0.7	1.7	1.3	0.0	2.0
260.	* 0.7	1.9	1.9	1.3	0.0	0.6	2.1	1.4	0.0	1.2
270.	* 0.4	1.6	1.8	1.3	0.0	0.6	2.1	1.4	0.0	0.8
280.	* 0.3	1.2	1.6	1.2	0.0	0.6	1.9	1.3	0.0	0.6
290.	* 0.2	1.0	1.5	1.1	0.0	0.6	1.7	1.1	0.0	0.4
300.	* 0.2	0.9	1.4	1.1	0.0	0.6	1.5	1.0	0.0	0.3
310.	* 0.1	1.0	1.4	1.0	0.0	0.7	1.3	1.0	0.0	0.2
320.	* 0.0	0.9	1.4	1.0	0.0	0.7	1.3	1.0	0.0	0.1
330.	* 0.0	0.9	1.4	1.0	0.0	0.8	1.2	1.1	0.0	0.0
340.	* 0.1	0.9	1.6	1.3	0.1	0.7	1.1	1.1	0.0	0.0
350.	* 0.4	0.8	1.4	1.5	0.2	0.6	1.0	1.1	0.0	0.0
360.	* 0.7	0.6	1.5	1.6	0.3	0.6	0.8	1.2	0.1	0.1
MAX	* 2.7	2.6	2.1	2.3	2.1	2.2	2.1	2.9	1.7	3.0
DEGR.	* 60	240	40	50	150	190	260	50	80	220

THE HIGHEST CONCENTRATION OF 3.00 PPM OCCURRED AT RECEPTOR REC10.

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 Build

DATE : 1/22/10
TIME : 15:50:24

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 60	REC2 240	REC3 40	REC4 50	REC5 150	REC6 190	REC7 260	REC8 50	REC9 80	REC10 220
1	*	0.6	0.6	0.7	0.5	0.2	0.1	0.4	0.2	0.2	1.1
2	*	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.1
3	*	0.2	0.0	0.6	0.2	0.1	0.0	0.4	0.1	0.1	0.5
4	*	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1
5	*	0.4	0.5	0.0	0.1	0.1	0.1	0.1	0.6	0.3	0.1
6	*	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
7	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.0	0.1	0.2	0.6	0.1	0.1	0.0	0.0
10	*	0.3	0.2	0.0	0.0	0.4	0.2	0.1	0.1	0.0	0.0
11	*	0.3	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
12	*	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
14	*	0.0	0.3	0.0	0.3	0.0	0.1	0.1	1.0	0.2	0.1
15	*	0.6	0.6	0.5	0.7	0.7	0.7	0.7	0.8	0.9	0.9

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 6 ID 1'    276    120.5    1.8
'REC INT 6 ID 2'    305.8    134.7    1.8
'REC INT 6 ID 3'    306.8    111    1.8
'REC INT 6 ID 4'    281.1    97.3    1.8
'REC INT 6 ID 5'    276.6    171.5    1.8
'REC INT 6 ID 6'    300    172.4    1.8
'REC INT 6 ID 7'    361.3    137.2    1.8
'REC INT 6 ID 8'    220.5    74.3    1.8
'REC INT 6 ID 9'    214.6    99.7    1.8
'REC INT 6 ID 10'    353.2    160.7    1.8
'INT 6: Atl & N. State 2029 No-Build'   15   1  1  'C'
1
'Approach WB'    'AG'    430.1     190.8    298.6     126.3    2980.    8.189    0.
  16.972
2
'Queue WBL'    'AG'    310.6     119.0    430.1     190.8    0.    3.6574    1
105   64   4   490   44.4925   1900   2   3
2
'Queue WBT4'    'AG'    309.7     122.8    430.1     190.8    0.    3.6574    4
105   64   4   2190   44.4925   5661   2   3
2
'Queue WBR'    'AG'    308.3     129.6    430.1     190.8    0.    3.6574    1
105   64   4   300   44.4925   1900   2   3
1
'Departure WB'    'AG'    298.6     126.3    176.1     58.8    1510.    8.189    0.
  16.972
1
'Approach NB'    'AG'    317.5     57.4    298.5     117.1    1490.    8.189    0.
 13.010
2
'Queue NBL'    'AG'    298.8     105.2    317.5     57.4    0.    3.6574    1
105   97   4   480   44.4925   1900   2   3
2
'Queue NBT2'    'AG'    303.2     107.7    317.5     57.4    0.    3.3526    2
105   49   4   1010   44.4925   2226   2   3
1
'Departure NB'    'AG'    298.5     117.1    295.5     202.6    1310.    8.189    0.
   13.010
1
'Approach SB'    'AG'    283.4     202.6    287.8     111.9    1110.    8.189    0.
  14.229
2
'Queue SBT2'    'AG'    282.6     122.3    283.4     202.6    0.    4.5717    2
105   61   4   550   44.4925   3504   2   3
2
'Queue SBR'    'AG'    289.6     126.3    283.4     202.6    0.    3.6574    1
105   61   4   560   44.4925   1425   2   3
1
'Departure SB'    'AG'    287.8     111.9    317.5     57.4    1040.    8.189    0.
  14.229
1
'Exit 8 On-Ramp'    'AG'    294.0     111.9    176.1     58.8    1720.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    9700.    8.738    8.
   130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:10

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	430.1	190.8	298.6	126.3	*	146.	244.	AG	2980.	8.2	0.0	17.0		
2. Queue WBL	*	310.6	119.0	355.4	145.9	*	52.	59.	AG	73.	100.0	0.0	3.7	0.77	8.7
3. Queue WBT4	*	309.7	122.8	360.5	151.5	*	58.	61.	AG	291.	100.0	0.0	3.7	0.29	9.7
4. Queue WBR	*	308.3	129.6	336.9	144.0	*	32.	63.	AG	73.	100.0	0.0	3.7	0.47	5.3
5. Departure WB	*	298.6	126.3	176.1	58.8	*	140.	241.	AG	1510.	8.2	0.0	17.0		
6. Approach NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1490.	8.2	0.0	13.0		
7. Queue NBL	*	298.8	105.2	847.2	-1296.7	*	1505.	159.	AG	110.	100.0	0.0	3.7	****	250.9
8. Queue NBT2	*	303.2	107.7	314.5	68.0	*	41.	164.	AG	111.	100.0	0.0	3.4	0.48	6.9
9. Departure NB	*	298.5	117.1	295.5	202.6	*	86.	358.	AG	1310.	8.2	0.0	13.0		
10. Approach SB	*	283.4	202.6	287.8	111.9	*	91.	177.	AG	1110.	8.2	0.0	14.2		
11. Queue SBT2	*	282.6	122.3	282.9	150.3	*	28.	1.	AG	139.	100.0	0.0	4.6	0.22	4.7
12. Queue SBR	*	289.6	126.3	271.9	344.4	*	219.	355.	AG	69.	100.0	0.0	3.7	1.09	36.5
13. Departure SB	*	287.8	111.9	317.5	57.4	*	62.	151.	AG	1040.	8.2	0.0	14.2		
14. Exit 8 On-Ramp	*	294.0	111.9	176.1	58.8	*	129.	246.	AG	1720.	9.8	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	9700.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:10

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	64	4.0	490	1900	44.49	2	3
3. Queue WBT4	*	105	64	4.0	2190	5661	44.49	2	3
4. Queue WBR	*	105	64	4.0	300	1900	44.49	2	3
7. Queue NBL	*	105	97	4.0	480	1900	44.49	2	3
8. Queue NBT2	*	105	49	4.0	1010	2226	44.49	2	3
11. Queue SBT2	*	105	61	4.0	550	3504	44.49	2	3
12. Queue SBR	*	105	61	4.0	560	1425	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 6 ID 1	*	276.0	120.5	1.8	*
2. REC INT 6 ID 2	*	305.8	134.7	1.8	*
3. REC INT 6 ID 3	*	306.8	111.0	1.8	*
4. REC INT 6 ID 4	*	281.1	97.3	1.8	*
5. REC INT 6 ID 5	*	276.6	171.5	1.8	*
6. REC INT 6 ID 6	*	300.0	172.4	1.8	*
7. REC INT 6 ID 7	*	361.3	137.2	1.8	*
8. REC INT 6 ID 8	*	220.5	74.3	1.8	*
9. REC INT 6 ID 9	*	214.6	99.7	1.8	*
10. REC INT 6 ID 10	*	353.2	160.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.7	0.6	1.5	1.6	0.3	0.6	0.8	1.2	0.1	0.1
10.	* 0.9	0.4	1.4	2.0	0.5	0.4	0.7	1.2	0.1	0.1
20.	* 1.2	0.4	1.5	1.8	0.6	0.3	0.7	1.5	0.1	0.1
30.	* 1.3	0.5	1.7	2.0	0.6	0.2	0.7	1.8	0.2	0.2
40.	* 1.6	0.9	2.1	2.1	0.6	0.1	0.7	2.4	0.4	0.3
50.	* 2.1	1.5	1.9	2.3	0.6	0.1	0.6	2.9	0.7	0.6
60.	* 2.6	2.1	1.4	1.9	0.6	0.1	0.4	2.7	1.3	1.0
70.	* 2.5	2.3	1.0	1.7	0.8	0.4	0.3	2.3	1.6	1.4
80.	* 2.5	2.6	0.7	1.4	0.9	0.6	0.2	1.9	1.7	1.4
90.	* 2.3	2.6	0.6	1.3	1.1	0.7	0.2	1.4	1.6	1.4
100.	* 1.9	2.5	0.6	1.2	1.4	0.9	0.3	1.0	1.7	1.3
110.	* 1.7	2.3	0.6	1.2	1.5	1.0	0.4	0.7	1.4	1.3
120.	* 2.0	2.2	0.6	1.3	1.7	1.2	0.4	0.7	1.4	1.4
130.	* 2.1	2.0	0.6	1.2	1.5	1.2	0.4	0.5	1.4	1.5
140.	* 2.1	1.9	0.6	1.0	1.5	1.3	0.5	0.5	1.3	1.5
150.	* 2.0	1.9	1.1	0.9	2.1	1.5	0.5	0.5	1.3	1.7
160.	* 1.7	2.1	1.5	0.6	2.1	1.6	0.6	0.3	1.0	1.8
170.	* 1.5	2.1	1.8	0.6	1.7	1.8	0.6	0.2	1.0	2.0
180.	* 1.3	2.3	2.0	0.5	1.1	2.1	0.7	0.2	0.9	2.2
190.	* 1.3	2.3	2.0	0.5	1.0	2.1	0.7	0.2	0.8	2.2
200.	* 1.6	2.5	1.8	0.5	0.7	1.8	0.6	0.3	0.8	2.4
210.	* 1.6	2.5	1.8	0.5	0.6	1.8	0.9	0.3	0.6	2.7
220.	* 1.5	2.5	1.7	0.5	0.5	1.5	1.1	0.3	0.5	3.0
230.	* 1.6	2.4	1.7	0.5	0.2	1.3	1.2	0.6	0.2	2.7
240.	* 1.5	2.6	1.9	0.8	0.1	0.9	1.4	1.0	0.2	2.6
250.	* 1.0	2.3	2.0	1.1	0.0	0.7	1.7	1.3	0.0	2.0
260.	* 0.7	1.9	1.9	1.3	0.0	0.6	2.1	1.4	0.0	1.2
270.	* 0.4	1.6	1.8	1.3	0.0	0.6	2.1	1.4	0.0	0.8
280.	* 0.3	1.2	1.6	1.2	0.0	0.6	1.9	1.3	0.0	0.6
290.	* 0.2	1.0	1.4	1.1	0.0	0.6	1.7	1.1	0.0	0.4
300.	* 0.2	0.9	1.4	1.1	0.0	0.6	1.5	1.0	0.0	0.3
310.	* 0.1	1.0	1.4	1.0	0.0	0.7	1.3	1.0	0.0	0.2
320.	* 0.0	0.9	1.4	1.0	0.0	0.7	1.3	1.0	0.0	0.1
330.	* 0.0	0.9	1.4	1.0	0.0	0.7	1.2	1.1	0.0	0.0
340.	* 0.1	0.9	1.5	1.2	0.1	0.7	1.1	1.1	0.0	0.0
350.	* 0.4	0.8	1.4	1.5	0.2	0.6	1.0	1.1	0.0	0.0
360.	* 0.7	0.6	1.5	1.6	0.3	0.6	0.8	1.2	0.1	0.1
MAX	* 2.6	2.6	2.1	2.3	2.1	2.1	2.1	2.9	1.7	3.0
DEGR.	* 60	240	40	50	150	180	260	50	80	220

THE HIGHEST CONCENTRATION OF 3.00 PPM OCCURRED AT RECEPTOR REC10.

JOB: Stamford Microscale EIE RUN: INT 6: Atl & N. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:10

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 60	REC2 240	REC3 40	REC4 50	REC5 150	REC6 180	REC7 260	REC8 50	REC9 80	REC10 220
1	*	0.6	0.6	0.7	0.5	0.2	0.2	0.4	0.2	0.2	1.1
2	*	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.1
3	*	0.2	0.0	0.6	0.2	0.1	0.0	0.4	0.1	0.1	0.5
4	*	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1
5	*	0.4	0.5	0.0	0.1	0.1	0.1	0.1	0.6	0.3	0.1
6	*	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
7	*	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.0	0.1	0.2	0.6	0.1	0.1	0.0	0.0
10	*	0.2	0.2	0.0	0.0	0.4	0.1	0.1	0.1	0.0	0.0
11	*	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
12	*	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
14	*	0.0	0.3	0.0	0.3	0.0	0.1	0.1	1.0	0.2	0.1
15	*	0.6	0.6	0.5	0.7	0.7	0.7	0.7	0.8	0.9	0.9

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'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 7 ID 1'    297.5    58.3    1.8
'REC INT 7 ID 2'    323.7    65.1    1.8
'REC INT 7 ID 3'    303.2    42    1.8
'REC INT 7 ID 4'    327    48.6    1.8
'REC INT 7 ID 5'    237.4    30.9    1.8
'REC INT 7 ID 6'    388.4    98.4    1.8
'REC INT 7 ID 7'    222.4    2.6    1.8
'REC INT 7 ID 8'    300.4    -15.4    1.8
'INT 7: Atlantic & South State 2009'   15   1  1  'C'
1
'Approach EB'    'AG'    223.2     21.1    317.5     57.4    1120.    11.73    0.
16.362
2
'Queue EBL'    'AG'    298.8     53.4    223.2     21.1    0.    3.3526    1
115   59   4   400   66.945   1247   2   3
2
'Queue EBT4'    'AG'    299.9     51.3    223.2     21.1    0.    3.3526    4
115   59   4   1870   66.945   5224   2   3
2
'Queue EBR'    'AG'    300.2     47.2    223.2     21.1    0.    3.6574    1
115   4   4   50   66.945   1900   2   3
1
'Departure EB'    'AG'    317.5     57.4    405.4     96.9    2190.    11.73    0.
 16.362
1
'Approach NB'    'AG'    310.7     -35.4    317.5     57.4    400.    11.73    0.
14.229
2
'Queue NBT'    'AG'    318.4     44.8    310.7     -35.4    0.    4.5717    1
115   77   4   250   66.945   1750   2   3
2
'Queue NBR'    'AG'    322.6     46.4    310.7     -35.4    0.    3.6574    1
115   4   4   150   66.945   1900   2   3
1
'Departure NB'    'AG'    317.5     57.4    298.5     117.1    650.    11.73    0.
 14.229
1
'Approach SB'    'AG'    298.5     117.1    317.5     57.4    370.    11.73    0.
12.705
2
'Queue SBL2'    'AG'    298.8     53.4    298.5     117.1    0.    3.3526    2
115   106   4   170   66.945   2987   2   3
2
'Queue SBT'    'AG'    300.2     47.2    298.5     117.1    0.    3.3526    1
115   64   4   200   66.945   1621   2   3
1
'Departure SB'    'AG'    317.5     57.4    310.7     -35.4    250.    11.73    0.
 12.705
1
'Exit 8 Off-Ramp'    'AG'    223.2     21.1    317.5     57.4    1200.    14.972
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    10200.    12.524
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 7: Atlantic & South State 2009

DATE : 1/21/10
TIME : 16:57:19

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1120.	11.7	0.0	16.4		
2. Queue EBL	*	298.8	53.4	262.6	37.9	*	39.	247.	AG	92.	100.0	0.0	3.4	0.74	6.6
3. Queue EBT4	*	299.9	51.3	257.2	34.5	*	46.	249.	AG	369.	100.0	0.0	3.4	0.21	7.7
4. Queue EBR	*	300.2	47.2	299.9	47.1	*	0.	251.	AG	6.	100.0	0.0	3.7	0.03	0.1
5. Departure EB	*	317.5	57.4	405.4	96.9	*	96.	66.	AG	2190.	11.7	0.0	16.4		
6. Approach NB	*	310.7	-35.4	317.5	57.4	*	93.	4.	AG	400.	11.7	0.0	14.2		
7. Queue NBT	*	318.4	44.8	315.3	12.9	*	32.	185.	AG	120.	100.0	0.0	4.6	0.51	5.3
8. Queue NBR	*	322.6	46.4	322.5	45.4	*	1.	188.	AG	6.	100.0	0.0	3.7	0.09	0.2
9. Departure NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	650.	11.7	0.0	14.2		
10. Approach SB	*	298.5	117.1	317.5	57.4	*	63.	162.	AG	370.	11.7	0.0	12.7		
11. Queue SBL2	*	298.8	53.4	298.6	103.6	*	50.	360.	AG	331.	100.0	0.0	3.4	1.10	8.4
12. Queue SBT	*	300.2	47.2	299.7	68.5	*	21.	359.	AG	100.	100.0	0.0	3.4	0.32	3.6
13. Departure SB	*	317.5	57.4	310.7	-35.4	*	93.	184.	AG	250.	11.7	0.0	12.7		
14. Exit 8 Off-Ramp	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1200.	15.0	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	10200.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 7: Atlantic & South State 2009

DATE : 1/21/10
TIME : 16:57:19

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	59	4.0	400	1247	66.94	2	3
3. Queue EBT4	*	115	59	4.0	1870	5224	66.94	2	3
4. Queue EBR	*	115	4	4.0	50	1900	66.94	2	3
7. Queue NBT	*	115	77	4.0	250	1750	66.94	2	3
8. Queue NBR	*	115	4	4.0	150	1900	66.94	2	3
11. Queue SBL2	*	115	106	4.0	170	2987	66.94	2	3
12. Queue SBT	*	115	64	4.0	200	1621	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 7 ID 1	*	297.5	58.3	1.8	*
2. REC INT 7 ID 2	*	323.7	65.1	1.8	*
3. REC INT 7 ID 3	*	303.2	42.0	1.8	*
4. REC INT 7 ID 4	*	327.0	48.6	1.8	*
5. REC INT 7 ID 5	*	237.4	30.9	1.8	*
6. REC INT 7 ID 6	*	388.4	98.4	1.8	*
7. REC INT 7 ID 7	*	222.4	2.6	1.8	*
8. REC INT 7 ID 8	*	300.4	-15.4	1.8	*

JOB: Stamford Microscale EIE RUN: INT 7: Atlantic & South State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	*	3.5	1.2	3.1	1.9	0.9	0.8	0.8	1.4
10.	*	3.9	1.2	2.6	1.8	1.0	0.7	1.2	1.6
20.	*	3.9	1.2	2.5	1.9	1.1	0.6	1.4	1.4
30.	*	3.8	1.4	2.4	1.9	1.6	0.5	1.9	1.4
40.	*	3.8	1.5	2.4	1.9	1.9	0.4	2.1	1.0
50.	*	3.5	1.8	2.5	1.8	2.5	0.4	2.3	0.7
60.	*	3.6	2.1	2.1	1.6	3.3	0.5	2.0	0.3
70.	*	3.7	2.3	2.0	1.1	3.9	0.5	1.3	0.2
80.	*	3.7	2.1	1.2	0.6	3.5	0.5	0.6	0.2
90.	*	3.5	1.8	0.7	0.3	2.8	0.6	0.3	0.2
100.	*	3.3	1.4	0.6	0.2	2.1	0.7	0.1	0.2
110.	*	3.0	1.1	0.6	0.2	1.7	0.7	0.1	0.2
120.	*	3.2	1.1	0.6	0.1	1.3	0.8	0.0	0.2
130.	*	3.2	1.0	0.5	0.1	1.2	0.7	0.0	0.2
140.	*	3.3	0.9	0.4	0.0	1.1	0.9	0.0	0.2
150.	*	3.4	0.8	0.3	0.0	1.1	0.9	0.0	0.2
160.	*	3.7	0.8	0.3	0.0	1.0	1.0	0.0	0.1
170.	*	3.2	1.0	0.3	0.0	1.0	1.0	0.0	0.0
180.	*	3.1	1.2	0.2	0.3	1.0	1.0	0.0	0.0
190.	*	2.9	1.6	0.1	0.4	1.0	1.0	0.0	0.0
200.	*	3.0	1.8	0.1	0.6	1.1	1.2	0.0	0.0
210.	*	3.0	2.0	0.1	0.7	1.2	1.4	0.0	0.0
220.	*	3.2	2.3	0.3	0.8	1.3	1.7	0.0	0.0
230.	*	3.1	3.2	0.5	0.8	1.1	2.4	0.0	0.0
240.	*	2.7	3.4	1.0	1.3	1.1	2.6	0.0	0.0
250.	*	2.1	3.5	1.6	1.9	0.9	2.4	0.0	0.0
260.	*	1.3	3.0	2.2	2.3	0.7	1.9	0.0	0.0
270.	*	0.9	2.3	2.5	2.6	0.5	1.6	0.0	0.0
280.	*	0.9	2.0	2.7	2.8	0.4	1.3	0.0	0.1
290.	*	1.2	2.0	2.8	2.6	0.4	1.1	0.0	0.3
300.	*	1.0	1.9	2.7	2.5	0.4	1.1	0.0	0.5
310.	*	1.0	1.8	2.7	2.4	0.3	1.0	0.0	0.7
320.	*	1.1	1.8	2.8	2.4	0.4	0.9	0.0	1.0
330.	*	1.4	1.7	3.0	2.3	0.6	0.9	0.0	1.2
340.	*	2.1	1.5	3.1	2.0	0.8	0.8	0.1	1.4
350.	*	2.8	1.3	3.1	1.9	0.8	0.8	0.6	1.4
360.	*	3.5	1.2	3.1	1.9	0.9	0.8	0.8	1.4
MAX	*	3.9	3.5	3.1	2.8	3.9	2.6	2.3	1.6
DEGR.	*	10	250	340	280	70	240	50	10

THE HIGHEST CONCENTRATION OF 3.90 PPM OCCURRED AT RECEPTOR REC1 .

JOB: Stamford Microscale EIE RUN: INT 7: Atlantic & South State 2009

DATE : 1/21/10
TIME : 16:57:19

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 10	REC2 250	REC3 340	REC4 280	REC5 70	REC6 240	REC7 50	REC8 10
1	*	0.0	0.5	0.4	0.4	0.7	0.1	0.3	0.1
2	*	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
3	*	0.0	0.3	0.3	0.2	0.5	0.1	0.2	0.0
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.5	0.0	0.1	0.2	1.0	0.1	0.1
6	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
10	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
11	*	2.4	0.2	0.6	0.2	0.1	0.1	0.1	0.1
12	*	0.3	0.1	0.2	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
14	*	0.0	0.6	0.5	0.5	1.0	0.1	0.4	0.1
15	*	1.0	0.9	1.0	1.0	1.3	1.2	1.2	0.9

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 7 ID 1'    297.5    58.3    1.8
'REC INT 7 ID 2'    323.7    65.1    1.8
'REC INT 7 ID 3'    303.2    42    1.8
'REC INT 7 ID 4'    327    48.6    1.8
'REC INT 7 ID 5'    237.4    30.9    1.8
'REC INT 7 ID 6'    388.4    98.4    1.8
'REC INT 7 ID 7'    222.4    2.6    1.8
'REC INT 7 ID 8'    300.4    -15.4    1.8
'INT 7: Atl. & S. State 2012 Build'   15   1  1  'C'
1
'Approach EB'    'AG'    223.2     21.1    317.5     57.4    1201.    10.15    0.
16.362
2
'Queue EBL'    'AG'    298.8     53.4    223.2     21.1    0.    3.3526    1
115   59   4   502   56.345   1247   2   3
2
'Queue EBT4'    'AG'    299.9     51.3    223.2     21.1    0.    3.3526    4
115   59   4   1962   56.345   5224   2   3
2
'Queue EBR'    'AG'    300.2     47.2    223.2     21.1    0.    3.6574    1
115   4   4   81   56.345   1900   2   3
1
'Departure EB'    'AG'    317.5     57.4    405.4     96.9    2635.    10.15    0.
 16.362
1
'Approach NB'    'AG'    310.7     -35.4    317.5     57.4    933.    10.15    0.
14.229
2
'Queue NBT'    'AG'    318.4     44.8    310.7     -35.4    0.    4.5717    1
115   77   4   532   56.345   1750   2   3
2
'Queue NBR'    'AG'    322.6     46.4    310.7     -35.4    0.    3.6574    1
115   4   4   401   56.345   1900   2   3
1
'Departure NB'    'AG'    317.5     57.4    298.5     117.1    1034.    10.15    0.
  14.229
1
'Approach SB'    'AG'    298.5     117.1    317.5     57.4    769.    10.15    0.
12.705
2
'Queue SBL2'    'AG'    298.8     53.4    298.5     117.1    0.    3.3526    2
115   106   4   272   56.345   2987   2   3
2
'Queue SBT'    'AG'    300.2     47.2    298.5     117.1    0.    3.3526    1
115   64   4   497   56.345   1621   2   3
1
'Departure SB'    'AG'    317.5     57.4    310.7     -35.4    578.    10.15    0.
 12.705
1
'Exit 8 Off-Ramp'    'AG'    223.2     21.1    317.5     57.4    1344.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (M) X1	Y1	X2	Y2	* LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	* 223.2	21.1	317.5	57.4 *	101.	69.	AG	1201.	10.1	0.0	16.4		
2. Queue EBL	* 298.8	53.4	244.8	30.3 *	59.	247.	AG	78.	100.0	0.0	3.4	0.93	9.8
3. Queue EBT4	* 299.9	51.3	255.1	33.6 *	48.	249.	AG	310.	100.0	0.0	3.4	0.22	8.0
4. Queue EBR	* 300.2	47.2	299.7	47.0 *	1.	251.	AG	5.	100.0	0.0	3.7	0.05	0.1
5. Departure EB	* 317.5	57.4	405.4	96.9 *	96.	66.	AG	2635.	10.1	0.0	16.4		
6. Approach NB	* 310.7	-35.4	317.5	57.4 *	93.	4.	AG	933.	10.1	0.0	14.2		
7. Queue NBT	* 318.4	44.8	296.3	-185.7 *	232.	185.	AG	101.	100.0	0.0	4.6	1.09	38.6
8. Queue NBR	* 322.6	46.4	322.2	43.8 *	3.	188.	AG	5.	100.0	0.0	3.7	0.23	0.4
9. Departure NB	* 317.5	57.4	298.5	117.1 *	63.	342.	AG	1034.	10.1	0.0	14.2		
10. Approach SB	* 298.5	117.1	317.5	57.4 *	63.	162.	AG	769.	10.1	0.0	12.7		
11. Queue SBL2	* 298.8	53.4	297.8	272.3 *	219.	360.	AG	279.	100.0	0.0	3.4	1.77	36.5
12. Queue SBT	* 300.2	47.2	298.9	100.2 *	53.	359.	AG	84.	100.0	0.0	3.4	0.78	8.8
13. Departure SB	* 317.5	57.4	310.7	-35.4 *	93.	184.	AG	578.	10.1	0.0	12.7		
14. Exit 8 Off-Ramp	* 223.2	21.1	317.5	57.4 *	101.	69.	AG	1344.	12.6	0.0	9.1		
15. I-95 Overpass	* 222.0	55.5	404.6	138.1 *	200.	66.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	59	4.0	502	1247	56.35	2	3
3. Queue EBT4	*	115	59	4.0	1962	5224	56.35	2	3
4. Queue EBR	*	115	4	4.0	81	1900	56.35	2	3
7. Queue NBT	*	115	77	4.0	532	1750	56.35	2	3
8. Queue NBR	*	115	4	4.0	401	1900	56.35	2	3
11. Queue SBL2	*	115	106	4.0	272	2987	56.35	2	3
12. Queue SBT	*	115	64	4.0	497	1621	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 7 ID 1	*	297.5	58.3	1.8	*
2. REC INT 7 ID 2	*	323.7	65.1	1.8	*
3. REC INT 7 ID 3	*	303.2	42.0	1.8	*
4. REC INT 7 ID 4	*	327.0	48.6	1.8	*
5. REC INT 7 ID 5	*	237.4	30.9	1.8	*
6. REC INT 7 ID 6	*	388.4	98.4	1.8	*
7. REC INT 7 ID 7	*	222.4	2.6	1.8	*
8. REC INT 7 ID 8	*	300.4	-15.4	1.8	*

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	*	3.5	1.3	2.9	1.9	0.8	0.7	0.7	1.6
10.	*	3.7	1.0	2.6	1.7	0.9	0.6	1.2	1.8
20.	*	3.7	1.1	2.5	1.8	1.2	0.5	1.4	1.8
30.	*	3.5	1.3	2.6	1.8	1.4	0.4	1.9	1.6
40.	*	3.3	1.4	2.4	1.7	1.8	0.4	2.1	1.4
50.	*	3.1	1.7	2.5	1.7	2.6	0.4	2.1	1.1
60.	*	3.1	2.1	2.1	1.4	3.0	0.4	1.9	0.8
70.	*	3.4	2.3	1.9	1.0	3.6	0.5	1.2	0.5
80.	*	3.6	2.0	1.2	0.5	3.4	0.5	0.7	0.5
90.	*	3.2	1.8	0.8	0.2	2.8	0.6	0.3	0.5
100.	*	3.2	1.5	0.6	0.2	2.3	0.7	0.2	0.5
110.	*	3.0	1.1	0.6	0.1	1.9	0.8	0.1	0.5
120.	*	3.0	1.1	0.6	0.1	1.5	0.8	0.0	0.5
130.	*	2.9	0.9	0.6	0.1	1.3	0.8	0.1	0.5
140.	*	3.1	0.9	0.7	0.0	1.1	0.9	0.1	0.5
150.	*	3.1	0.9	0.7	0.0	1.1	0.9	0.0	0.5
160.	*	3.3	1.0	0.7	0.0	0.9	1.0	0.0	0.4
170.	*	3.3	1.3	0.5	0.2	0.9	1.0	0.0	0.3
180.	*	3.0	1.6	0.6	0.6	0.9	1.0	0.0	0.2
190.	*	2.7	2.1	0.3	0.9	1.0	1.1	0.0	0.1
200.	*	2.5	2.1	0.1	0.9	1.1	1.3	0.0	0.0
210.	*	2.6	2.3	0.1	0.9	1.1	1.5	0.0	0.0
220.	*	2.6	2.5	0.2	0.9	1.1	1.8	0.0	0.0
230.	*	2.7	3.2	0.4	1.0	1.1	2.3	0.0	0.0
240.	*	2.3	3.6	0.9	1.5	1.0	2.5	0.0	0.0
250.	*	1.7	3.3	1.5	2.1	0.9	2.4	0.0	0.0
260.	*	1.3	3.0	2.0	2.5	0.6	1.7	0.0	0.0
270.	*	0.8	2.5	2.2	2.7	0.4	1.6	0.0	0.0
280.	*	0.8	2.2	2.4	2.7	0.4	1.2	0.0	0.1
290.	*	0.9	2.1	2.4	2.7	0.3	1.1	0.0	0.3
300.	*	0.9	2.0	2.5	2.4	0.4	1.1	0.0	0.4
310.	*	0.9	2.0	2.5	2.6	0.3	0.9	0.0	0.7
320.	*	1.0	2.0	2.3	2.7	0.4	0.9	0.0	0.9
330.	*	1.2	1.9	2.6	2.8	0.5	0.8	0.0	1.0
340.	*	1.8	1.8	3.0	2.5	0.7	0.7	0.1	1.2
350.	*	2.9	1.6	3.2	2.2	0.7	0.7	0.5	1.3
360.	*	3.5	1.3	2.9	1.9	0.8	0.7	0.7	1.6
MAX	*	3.7	3.6	3.2	2.8	3.6	2.5	2.1	1.8
DEGR.	*	20	240	350	330	70	240	50	10

THE HIGHEST CONCENTRATION OF 3.70 PPM OCCURRED AT RECEPTOR REC1 .

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 20	REC2 240	REC3 350	REC4 330	REC5 70	REC6 240	REC7 50	REC8 10
1	*	0.0	0.5	0.4	0.1	0.7	0.1	0.3	0.1
2	*	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.0
3	*	0.0	0.3	0.2	0.0	0.4	0.1	0.2	0.0
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.6	0.0	0.6	0.2	1.1	0.1	0.1
6	*	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.1	0.3	0.0	0.0	0.0	0.1
10	*	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0
11	*	2.0	0.1	0.8	0.3	0.1	0.1	0.1	0.2
12	*	0.4	0.1	0.3	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
14	*	0.0	0.6	0.4	0.1	0.9	0.1	0.3	0.1
15	*	0.9	0.7	0.9	0.9	1.1	1.0	1.0	0.8

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 7 ID 1'    297.5    58.3    1.8
'REC INT 7 ID 2'    323.7    65.1    1.8
'REC INT 7 ID 3'    303.2    42    1.8
'REC INT 7 ID 4'    327    48.6    1.8
'REC INT 7 ID 5'    237.4    30.9    1.8
'REC INT 7 ID 6'    388.4    98.4    1.8
'REC INT 7 ID 7'    222.4    2.6    1.8
'REC INT 7 ID 8'    300.4    -15.4    1.8
'INT 7: Atl. & S. State 2012 No-Build'   15   1  1  'C'
1
'Approach EB'    'AG'    223.2     21.1    317.5     57.4    1201.    10.15    0.
16.362
2
'Queue EBL'    'AG'    298.8     53.4    223.2     21.1    0.    3.3526    1
115   59   4   502   56.345   1247   2   3
2
'Queue EBT4'    'AG'    299.9     51.3    223.2     21.1    0.    3.3526    4
115   59   4   1962   56.345   5224   2   3
2
'Queue EBR'    'AG'    300.2     47.2    223.2     21.1    0.    3.6574    1
115   4   4   81   56.345   1900   2   3
1
'Departure EB'    'AG'    317.5     57.4    405.4     96.9    2633.    10.15    0.
 16.362
1
'Approach NB'    'AG'    310.7     -35.4    317.5     57.4    922.    10.15    0.
14.229
2
'Queue NBT'    'AG'    318.4     44.8    310.7     -35.4    0.    4.5717    1
115   77   4   523   56.345   1750   2   3
2
'Queue NBR'    'AG'    322.6     46.4    310.7     -35.4    0.    3.6574    1
115   4   4   399   56.345   1900   2   3
1
'Departure NB'    'AG'    317.5     57.4    298.5     117.1    1025.    10.15    0.
  14.229
1
'Approach SB'    'AG'    298.5     117.1    317.5     57.4    764.    10.15    0.
12.705
2
'Queue SBL2'    'AG'    298.8     53.4    298.5     117.1    0.    3.3526    2
115   106   4   272   56.345   2987   2   3
2
'Queue SBT'    'AG'    300.2     47.2    298.5     117.1    0.    3.3526    1
115   64   4   492   56.345   1621   2   3
1
'Departure SB'    'AG'    317.5     57.4    310.7     -35.4    573.    10.15    0.
 12.705
1
'Exit 8 Off-Ramp'    'AG'    223.2     21.1    317.5     57.4    1342.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach EB	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1201.	10.1	0.0	16.4		
2. Queue EBL	*	298.8	53.4	244.8	30.3	*	59.	247.	AG	78.	100.0	0.0	3.4	0.93	9.8
3. Queue EBT4	*	299.9	51.3	255.1	33.6	*	48.	249.	AG	310.	100.0	0.0	3.4	0.22	8.0
4. Queue EBR	*	300.2	47.2	299.7	47.0	*	1.	251.	AG	5.	100.0	0.0	3.7	0.05	0.1
5. Departure EB	*	317.5	57.4	405.4	96.9	*	96.	66.	AG	2633.	10.1	0.0	16.4		
6. Approach NB	*	310.7	-35.4	317.5	57.4	*	93.	4.	AG	922.	10.1	0.0	14.2		
7. Queue NBT	*	318.4	44.8	299.0	-157.2	*	203.	185.	AG	101.	100.0	0.0	4.6	1.08	33.8
8. Queue NBR	*	322.6	46.4	322.2	43.8	*	3.	188.	AG	5.	100.0	0.0	3.7	0.23	0.4
9. Departure NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1025.	10.1	0.0	14.2		
10. Approach SB	*	298.5	117.1	317.5	57.4	*	63.	162.	AG	764.	10.1	0.0	12.7		
11. Queue SBL2	*	298.8	53.4	297.8	272.3	*	219.	360.	AG	279.	100.0	0.0	3.4	1.77	36.5
12. Queue SBT	*	300.2	47.2	298.9	99.7	*	52.	359.	AG	84.	100.0	0.0	3.4	0.78	8.7
13. Departure SB	*	317.5	57.4	310.7	-35.4	*	93.	184.	AG	573.	10.1	0.0	12.7		
14. Exit 8 Off-Ramp	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1342.	12.6	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	59	4.0	502	1247	56.35	2	3
3. Queue EBT4	*	115	59	4.0	1962	5224	56.35	2	3
4. Queue EBR	*	115	4	4.0	81	1900	56.35	2	3
7. Queue NBT	*	115	77	4.0	523	1750	56.35	2	3
8. Queue NBR	*	115	4	4.0	399	1900	56.35	2	3
11. Queue SBL2	*	115	106	4.0	272	2987	56.35	2	3
12. Queue SBT	*	115	64	4.0	492	1621	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 7 ID 1	*	297.5	58.3	1.8	*
2. REC INT 7 ID 2	*	323.7	65.1	1.8	*
3. REC INT 7 ID 3	*	303.2	42.0	1.8	*
4. REC INT 7 ID 4	*	327.0	48.6	1.8	*
5. REC INT 7 ID 5	*	237.4	30.9	1.8	*
6. REC INT 7 ID 6	*	388.4	98.4	1.8	*
7. REC INT 7 ID 7	*	222.4	2.6	1.8	*
8. REC INT 7 ID 8	*	300.4	-15.4	1.8	*

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	*	3.5	1.3	2.9	1.9	0.8	0.7	0.7	1.6
10.	*	3.7	1.0	2.6	1.7	0.9	0.6	1.2	1.8
20.	*	3.7	1.1	2.5	1.8	1.2	0.5	1.4	1.8
30.	*	3.5	1.3	2.6	1.8	1.4	0.4	1.9	1.6
40.	*	3.3	1.4	2.4	1.7	1.8	0.4	2.1	1.4
50.	*	3.1	1.7	2.5	1.7	2.6	0.4	2.1	1.1
60.	*	3.1	2.1	2.1	1.4	3.0	0.4	1.9	0.8
70.	*	3.4	2.3	1.9	1.0	3.6	0.5	1.2	0.5
80.	*	3.6	2.0	1.2	0.5	3.4	0.5	0.7	0.5
90.	*	3.2	1.8	0.8	0.2	2.8	0.6	0.3	0.5
100.	*	3.2	1.5	0.6	0.2	2.3	0.7	0.2	0.5
110.	*	2.9	1.1	0.6	0.1	1.9	0.8	0.1	0.5
120.	*	3.0	1.1	0.6	0.1	1.5	0.8	0.0	0.5
130.	*	2.9	0.9	0.6	0.1	1.3	0.8	0.0	0.5
140.	*	3.1	0.9	0.7	0.0	1.1	0.9	0.0	0.5
150.	*	3.1	0.9	0.7	0.0	1.1	0.9	0.0	0.5
160.	*	3.3	1.0	0.7	0.0	0.9	1.0	0.0	0.4
170.	*	3.2	1.3	0.5	0.2	0.9	1.0	0.0	0.3
180.	*	2.9	1.6	0.5	0.6	0.9	1.0	0.0	0.2
190.	*	2.7	2.1	0.3	0.9	1.0	1.1	0.0	0.1
200.	*	2.5	2.1	0.1	0.9	1.1	1.2	0.0	0.0
210.	*	2.6	2.3	0.1	0.9	1.1	1.5	0.0	0.0
220.	*	2.6	2.5	0.2	0.9	1.1	1.8	0.0	0.0
230.	*	2.7	3.2	0.4	1.0	1.1	2.3	0.0	0.0
240.	*	2.3	3.6	0.9	1.5	1.0	2.5	0.0	0.0
250.	*	1.7	3.3	1.5	2.1	0.9	2.4	0.0	0.0
260.	*	1.3	3.0	2.0	2.5	0.6	1.7	0.0	0.0
270.	*	0.8	2.5	2.2	2.7	0.4	1.6	0.0	0.0
280.	*	0.8	2.2	2.4	2.7	0.4	1.2	0.0	0.1
290.	*	0.9	2.1	2.4	2.7	0.3	1.1	0.0	0.3
300.	*	0.9	2.0	2.5	2.4	0.4	1.1	0.0	0.4
310.	*	0.9	2.0	2.4	2.6	0.3	0.9	0.0	0.7
320.	*	1.0	2.0	2.3	2.7	0.4	0.9	0.0	0.9
330.	*	1.2	1.9	2.6	2.8	0.5	0.8	0.0	1.0
340.	*	1.8	1.8	3.0	2.5	0.7	0.7	0.1	1.2
350.	*	2.9	1.6	3.2	2.2	0.7	0.7	0.5	1.3
360.	*	3.5	1.3	2.9	1.9	0.8	0.7	0.7	1.6
MAX	*	3.7	3.6	3.2	2.8	3.6	2.5	2.1	1.8
DEGR.	*	20	240	350	330	70	240	50	10

THE HIGHEST CONCENTRATION OF 3.70 PPM OCCURRED AT RECEPTOR REC1 .

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 20	REC2 240	REC3 350	REC4 330	REC5 70	REC6 240	REC7 50	REC8 10
1	*	0.0	0.5	0.4	0.1	0.7	0.1	0.3	0.1
2	*	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.0
3	*	0.0	0.3	0.2	0.0	0.4	0.1	0.2	0.0
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.6	0.0	0.6	0.2	1.1	0.1	0.1
6	*	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.1	0.3	0.0	0.0	0.0	0.1
10	*	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0
11	*	2.0	0.1	0.8	0.3	0.1	0.1	0.1	0.2
12	*	0.4	0.1	0.3	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
14	*	0.0	0.6	0.4	0.1	0.9	0.1	0.3	0.1
15	*	0.9	0.7	0.9	0.9	1.1	1.0	1.0	0.8

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 7 ID 1'    297.5    58.3    1.8
'REC INT 7 ID 2'    323.7    65.1    1.8
'REC INT 7 ID 3'    303.2    42    1.8
'REC INT 7 ID 4'    327    48.6    1.8
'REC INT 7 ID 5'    237.4    30.9    1.8
'REC INT 7 ID 6'    388.4    98.4    1.8
'REC INT 7 ID 7'    222.4    2.6    1.8
'REC INT 7 ID 8'    300.4    -15.4    1.8
'INT 7: Atl. & S. State 2029 Build'   15   1  1  'C'
1
'Approach EB'    'AG'    223.2     21.1    317.5     57.4    1390.    8.189    0.
16.362
2
'Queue EBL'    'AG'    298.8     53.4    223.2     21.1    0.    3.3526    1
115   59   4   580   44.4925   1247   2   3
2
'Queue EBT4'    'AG'    299.9     51.3    223.2     21.1    0.    3.3526    4
115   59   4   2260   44.4925   5224   2   3
2
'Queue EBR'    'AG'    300.2     47.2    223.2     21.1    0.    3.6574    1
115   4   4   100   44.4925   1900   2   3
1
'Departure EB'    'AG'    317.5     57.4    405.4     96.9    3042.    8.189    0.
 16.362
1
'Approach NB'    'AG'    310.7     -35.4    317.5     57.4    1071.    8.189    0.
 14.229
2
'Queue NBT'    'AG'    318.4     44.8    310.7     -35.4    0.    4.5717    1
115   77   4   609   44.4925   1750   2   3
2
'Queue NBR'    'AG'    322.6     46.4    310.7     -35.4    0.    3.6574    1
115   4   4   462   44.4925   1900   2   3
1
'Departure NB'    'AG'    317.5     57.4    298.5     117.1    1189.    8.189    0.
  14.229
1
'Approach SB'    'AG'    298.5     117.1    317.5     57.4    875.    8.189    0.
12.705
2
'Queue SBL2'    'AG'    298.8     53.4    298.5     117.1    0.    3.3526    2
115   106   4   320   44.4925   2987   2   3
2
'Queue SBT'    'AG'    300.2     47.2    298.5     117.1    0.    3.3526    1
115   64   4   555   44.4925   1621   2   3
1
'Departure SB'    'AG'    317.5     57.4    310.7     -35.4    655.    8.189    0.
 12.705
1
'Exit 8 Off-Ramp'    'AG'    223.2     21.1    317.5     57.4    1550.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
1. Approach EB	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1390.	8.2	0.0	16.4		
2. Queue EBL	*	298.8	53.4	116.5	-24.5	*	198.	247.	AG	61.	100.0	0.0	3.4	1.07	33.0
3. Queue EBT4	*	299.9	51.3	248.2	30.9	*	56.	249.	AG	245.	100.0	0.0	3.4	0.25	9.3
4. Queue EBR	*	300.2	47.2	299.6	47.0	*	1.	251.	AG	4.	100.0	0.0	3.7	0.06	0.1
5. Departure EB	*	317.5	57.4	405.4	96.9	*	96.	66.	AG	3042.	8.2	0.0	16.4		
6. Approach NB	*	310.7	-35.4	317.5	57.4	*	93.	4.	AG	1071.	8.2	0.0	14.2		
7. Queue NBT	*	318.4	44.8	272.9	-429.1	*	476.	185.	AG	80.	100.0	0.0	4.6	1.25	79.4
8. Queue NBR	*	322.6	46.4	322.2	43.4	*	3.	188.	AG	4.	100.0	0.0	3.7	0.27	0.5
9. Departure NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1189.	8.2	0.0	14.2		
10. Approach SB	*	298.5	117.1	317.5	57.4	*	63.	162.	AG	875.	8.2	0.0	12.7		
11. Queue SBL2	*	298.8	53.4	297.4	351.6	*	298.	360.	AG	220.	100.0	0.0	3.4	2.08	49.7
12. Queue SBT	*	300.2	47.2	298.7	108.8	*	62.	359.	AG	66.	100.0	0.0	3.4	0.88	10.3
13. Departure SB	*	317.5	57.4	310.7	-35.4	*	93.	184.	AG	655.	8.2	0.0	12.7		
14. Exit 8 Off-Ramp	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1550.	9.8	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	59	4.0	580	1247	44.49	2	3
3. Queue EBT4	*	115	59	4.0	2260	5224	44.49	2	3
4. Queue EBR	*	115	4	4.0	100	1900	44.49	2	3
7. Queue NBT	*	115	77	4.0	609	1750	44.49	2	3
8. Queue NBR	*	115	4	4.0	462	1900	44.49	2	3
11. Queue SBL2	*	115	106	4.0	320	2987	44.49	2	3
12. Queue SBT	*	115	64	4.0	555	1621	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 7 ID 1	*	297.5	58.3	1.8	*
2. REC INT 7 ID 2	*	323.7	65.1	1.8	*
3. REC INT 7 ID 3	*	303.2	42.0	1.8	*
4. REC INT 7 ID 4	*	327.0	48.6	1.8	*
5. REC INT 7 ID 5	*	237.4	30.9	1.8	*
6. REC INT 7 ID 6	*	388.4	98.4	1.8	*
7. REC INT 7 ID 7	*	222.4	2.6	1.8	*
8. REC INT 7 ID 8	*	300.4	-15.4	1.8	*

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	* 3.0	1.2	2.6	1.7	0.6	0.5	0.7	1.4
10.	* 3.1	1.0	2.3	1.5	0.8	0.5	1.1	1.7
20.	* 2.9	0.9	2.1	1.5	0.9	0.5	1.3	1.4
30.	* 2.7	1.1	2.0	1.6	1.2	0.4	1.6	1.4
40.	* 2.7	1.2	2.2	1.6	1.5	0.3	1.8	1.3
50.	* 2.7	1.4	2.2	1.4	2.1	0.3	1.9	1.1
60.	* 2.7	1.8	1.9	1.2	2.8	0.4	1.6	0.5
70.	* 2.9	2.0	1.4	0.9	3.3	0.5	1.0	0.4
80.	* 2.9	1.8	1.1	0.4	3.2	0.5	0.5	0.4
90.	* 2.8	1.6	0.7	0.2	2.8	0.6	0.3	0.4
100.	* 2.6	1.3	0.6	0.1	2.2	0.7	0.1	0.4
110.	* 2.4	1.1	0.5	0.1	1.7	0.7	0.1	0.4
120.	* 2.4	1.0	0.5	0.1	1.6	0.7	0.0	0.4
130.	* 2.5	0.9	0.5	0.1	1.1	0.7	0.0	0.4
140.	* 2.6	0.8	0.4	0.0	1.1	0.7	0.0	0.5
150.	* 2.6	0.8	0.5	0.0	1.2	0.9	0.0	0.5
160.	* 2.8	0.9	0.6	0.0	1.1	0.9	0.0	0.4
170.	* 2.5	1.2	0.5	0.2	1.0	0.8	0.0	0.3
180.	* 2.3	1.6	0.4	0.3	1.0	0.8	0.0	0.2
190.	* 2.3	1.9	0.2	0.7	1.0	1.0	0.0	0.1
200.	* 2.2	2.1	0.0	0.9	1.1	1.2	0.0	0.0
210.	* 2.1	2.1	0.1	0.8	1.2	1.4	0.0	0.0
220.	* 2.4	2.2	0.1	0.9	1.3	1.6	0.0	0.0
230.	* 2.4	2.8	0.3	1.0	1.3	2.1	0.0	0.0
240.	* 2.1	3.1	0.8	1.3	1.3	2.1	0.0	0.0
250.	* 1.6	3.0	1.4	1.6	1.0	2.1	0.0	0.0
260.	* 0.9	2.7	1.8	2.0	0.7	1.5	0.1	0.0
270.	* 0.6	2.2	2.1	2.2	0.4	1.3	0.1	0.0
280.	* 0.7	1.9	2.1	2.2	0.4	1.0	0.1	0.1
290.	* 0.8	1.7	2.2	2.3	0.3	0.9	0.1	0.1
300.	* 0.7	1.7	2.0	2.2	0.3	0.9	0.1	0.4
310.	* 0.7	1.8	2.0	2.3	0.3	0.8	0.1	0.6
320.	* 0.8	1.8	2.0	2.2	0.3	0.7	0.1	0.8
330.	* 1.0	1.7	2.3	2.4	0.4	0.7	0.1	0.9
340.	* 1.5	1.6	2.4	2.2	0.6	0.7	0.2	1.0
350.	* 2.3	1.3	2.5	1.8	0.6	0.5	0.6	1.1
360.	* 3.0	1.2	2.6	1.7	0.6	0.5	0.7	1.4
MAX	* 3.1	3.1	2.6	2.4	3.3	2.1	1.9	1.7
DEGR.	* 10	240	0	330	70	230	50	10

THE HIGHEST CONCENTRATION OF 3.30 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 10	REC2 240	REC3 0	REC4 330	REC5 70	REC6 230	REC7 50	REC8 10
1	*	0.0	0.4	0.3	0.1	0.6	0.1	0.3	0.1
2	*	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.0
3	*	0.0	0.3	0.1	0.0	0.5	0.0	0.2	0.0
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.5	0.0	0.6	0.2	1.1	0.1	0.1
6	*	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.1
10	*	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0
11	*	1.8	0.1	0.6	0.3	0.1	0.0	0.1	0.2
12	*	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
14	*	0.0	0.5	0.4	0.1	0.8	0.1	0.3	0.1
15	*	0.7	0.6	0.7	0.7	0.9	0.7	0.8	0.7

```
'Stamford Microscale EIE' 60. 321.  0. 0.  8  1.0  0  1
'REC INT 7 ID 1'    297.5    58.3    1.8
'REC INT 7 ID 2'    323.7    65.1    1.8
'REC INT 7 ID 3'    303.2    42    1.8
'REC INT 7 ID 4'    327    48.6    1.8
'REC INT 7 ID 5'    237.4    30.9    1.8
'REC INT 7 ID 6'    388.4    98.4    1.8
'REC INT 7 ID 7'    222.4    2.6    1.8
'REC INT 7 ID 8'    300.4    -15.4    1.8
'INT 7: Atl. & S. State 2029 No-Build'   15   1  1  'C'
1
'Approach EB'    'AG'    223.2     21.1    317.5     57.4    1390.    8.189    0.
16.362
2
'Queue EBL'    'AG'    298.8     53.4    223.2     21.1    0.    3.3526    1
115   59   4   580   44.4925   1247   2   3
2
'Queue EBT4'    'AG'    299.9     51.3    223.2     21.1    0.    3.3526    4
115   59   4   2260   44.4925   5224   2   3
2
'Queue EBR'    'AG'    300.2     47.2    223.2     21.1    0.    3.6574    1
115   4   4   100   44.4925   1900   2   3
1
'Departure EB'    'AG'    317.5     57.4    405.4     96.9    1290.    8.189    0.
 16.362
1
'Approach NB'    'AG'    310.7     -35.4    317.5     57.4    1060.    8.189    0.
 14.229
2
'Queue NBT'    'AG'    318.4     44.8    310.7     -35.4    0.    4.5717    1
115   77   4   600   44.4925   1750   2   3
2
'Queue NBR'    'AG'    322.6     46.4    310.7     -35.4    0.    3.6574    1
115   4   4   460   44.4925   1900   2   3
1
'Departure NB'    'AG'    317.5     57.4    298.5     117.1    1180.    8.189    0.
  14.229
1
'Approach SB'    'AG'    298.5     117.1    317.5     57.4    870.    8.189    0.
12.705
2
'Queue SBL2'    'AG'    298.8     53.4    298.5     117.1    0.    3.3526    2
115   106   4   320   44.4925   2987   2   3
2
'Queue SBT'    'AG'    300.2     47.2    298.5     117.1    0.    3.3526    1
115   64   4   550   44.4925   1621   2   3
1
'Departure SB'    'AG'    317.5     57.4    310.7     -35.4    650.    8.189    0.
 12.705
1
'Exit 8 Off-Ramp'    'AG'    223.2     21.1    317.5     57.4    1550.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    222.0     55.5    404.6     138.1    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(M)	(DEG)		(G/MI)		(M)	(M)		(VEH)
1. Approach EB	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1390.	8.2	0.0	16.4		
2. Queue EBL	*	298.8	53.4	116.5	-24.5	*	198.	247.	AG	61.	100.0	0.0	3.4	1.07	33.0
3. Queue EBT4	*	299.9	51.3	248.2	30.9	*	56.	249.	AG	245.	100.0	0.0	3.4	0.25	9.3
4. Queue EBR	*	300.2	47.2	299.6	47.0	*	1.	251.	AG	4.	100.0	0.0	3.7	0.06	0.1
5. Departure EB	*	317.5	57.4	405.4	96.9	*	96.	66.	AG	1290.	8.2	0.0	16.4		
6. Approach NB	*	310.7	-35.4	317.5	57.4	*	93.	4.	AG	1060.	8.2	0.0	14.2		
7. Queue NBT	*	318.4	44.8	275.6	-400.7	*	448.	185.	AG	80.	100.0	0.0	4.6	1.23	74.6
8. Queue NBR	*	322.6	46.4	322.2	43.4	*	3.	188.	AG	4.	100.0	0.0	3.7	0.27	0.5
9. Departure NB	*	317.5	57.4	298.5	117.1	*	63.	342.	AG	1180.	8.2	0.0	14.2		
10. Approach SB	*	298.5	117.1	317.5	57.4	*	63.	162.	AG	870.	8.2	0.0	12.7		
11. Queue SBL2	*	298.8	53.4	297.4	351.6	*	298.	360.	AG	220.	100.0	0.0	3.4	2.08	49.7
12. Queue SBT	*	300.2	47.2	298.7	107.5	*	60.	359.	AG	66.	100.0	0.0	3.4	0.87	10.1
13. Departure SB	*	317.5	57.4	310.7	-35.4	*	93.	184.	AG	650.	8.2	0.0	12.7		
14. Exit 8 Off-Ramp	*	223.2	21.1	317.5	57.4	*	101.	69.	AG	1550.	9.8	0.0	9.1		
15. I-95 Overpass	*	222.0	55.5	404.6	138.1	*	200.	66.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	59	4.0	580	1247	44.49	2	3
3. Queue EBT4	*	115	59	4.0	2260	5224	44.49	2	3
4. Queue EBR	*	115	4	4.0	100	1900	44.49	2	3
7. Queue NBT	*	115	77	4.0	600	1750	44.49	2	3
8. Queue NBR	*	115	4	4.0	460	1900	44.49	2	3
11. Queue SBL2	*	115	106	4.0	320	2987	44.49	2	3
12. Queue SBT	*	115	64	4.0	550	1621	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 7 ID 1	*	297.5	58.3	1.8	*
2. REC INT 7 ID 2	*	323.7	65.1	1.8	*
3. REC INT 7 ID 3	*	303.2	42.0	1.8	*
4. REC INT 7 ID 4	*	327.0	48.6	1.8	*
5. REC INT 7 ID 5	*	237.4	30.9	1.8	*
6. REC INT 7 ID 6	*	388.4	98.4	1.8	*
7. REC INT 7 ID 7	*	222.4	2.6	1.8	*
8. REC INT 7 ID 8	*	300.4	-15.4	1.8	*

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8
0.	*	3.0	1.1	2.6	1.3	0.6	0.5	0.7	1.4
10.	*	3.1	0.9	2.3	1.1	0.8	0.4	1.1	1.6
20.	*	2.9	0.8	2.0	1.1	0.9	0.4	1.3	1.3
30.	*	2.7	0.9	1.9	1.1	1.2	0.3	1.6	1.3
40.	*	2.6	0.9	2.0	1.1	1.5	0.2	1.8	1.2
50.	*	2.6	1.0	1.8	1.0	2.0	0.2	1.8	1.0
60.	*	2.5	1.1	1.6	0.9	2.8	0.2	1.6	0.5
70.	*	2.5	1.2	1.2	0.6	3.2	0.3	0.9	0.4
80.	*	2.6	1.1	1.0	0.4	3.2	0.2	0.5	0.4
90.	*	2.5	0.9	0.6	0.2	2.7	0.2	0.3	0.4
100.	*	2.4	0.7	0.6	0.1	2.2	0.3	0.1	0.4
110.	*	2.3	0.6	0.5	0.1	1.7	0.3	0.1	0.4
120.	*	2.3	0.5	0.5	0.1	1.6	0.3	0.0	0.4
130.	*	2.5	0.4	0.5	0.1	1.1	0.3	0.0	0.4
140.	*	2.6	0.4	0.4	0.0	1.1	0.3	0.0	0.5
150.	*	2.6	0.4	0.5	0.0	1.2	0.4	0.0	0.5
160.	*	2.8	0.5	0.6	0.0	1.1	0.4	0.0	0.4
170.	*	2.5	0.8	0.5	0.2	1.0	0.4	0.0	0.3
180.	*	2.3	1.2	0.4	0.3	1.0	0.4	0.0	0.2
190.	*	2.3	1.5	0.2	0.6	1.0	0.5	0.0	0.1
200.	*	2.2	1.6	0.0	0.9	1.1	0.7	0.0	0.0
210.	*	2.1	1.6	0.1	0.8	1.2	0.8	0.0	0.0
220.	*	2.4	1.9	0.1	0.9	1.3	1.0	0.0	0.0
230.	*	2.4	2.5	0.3	1.0	1.3	1.5	0.0	0.0
240.	*	2.1	2.8	0.8	1.3	1.3	1.5	0.0	0.0
250.	*	1.6	2.7	1.4	1.6	1.0	1.7	0.0	0.0
260.	*	0.9	2.5	1.8	2.0	0.7	1.3	0.1	0.0
270.	*	0.6	2.0	2.1	2.1	0.4	1.2	0.1	0.0
280.	*	0.7	1.8	2.1	2.1	0.4	0.9	0.1	0.1
290.	*	0.8	1.6	2.2	2.2	0.3	0.8	0.1	0.1
300.	*	0.7	1.7	2.0	2.1	0.3	0.8	0.1	0.4
310.	*	0.7	1.7	2.0	2.1	0.3	0.8	0.1	0.6
320.	*	0.8	1.7	2.0	2.0	0.3	0.7	0.1	0.8
330.	*	1.0	1.7	2.3	2.0	0.4	0.7	0.1	0.9
340.	*	1.5	1.5	2.4	1.9	0.6	0.7	0.2	1.0
350.	*	2.3	1.2	2.5	1.5	0.6	0.5	0.6	1.1
360.	*	3.0	1.1	2.6	1.3	0.6	0.5	0.7	1.4
MAX	*	3.1	2.8	2.6	2.2	3.2	1.7	1.8	1.6
DEGR.	*	10	240	0	290	80	250	40	10

THE HIGHEST CONCENTRATION OF 3.20 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 7: Atl. & S. State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 10	REC2 240	REC3 0	REC4 290	REC5 80	REC6 250	REC7 40	REC8 10
1	*	0.0	0.4	0.3	0.3	0.6	0.1	0.3	0.1
2	*	0.0	0.1	0.0	0.0	0.3	0.0	0.1	0.0
3	*	0.0	0.3	0.1	0.1	0.6	0.1	0.1	0.0
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.0	0.2	0.0	0.1	0.1	0.3	0.0	0.0
6	*	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.2
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.2	0.1	0.0	0.1	0.0	0.1
10	*	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0
11	*	1.8	0.1	0.6	0.1	0.0	0.1	0.1	0.2
12	*	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.0
13	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
14	*	0.0	0.5	0.4	0.3	0.9	0.1	0.3	0.1
15	*	0.7	0.6	0.7	0.8	0.7	0.9	0.9	0.7

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 10 ID 1'    591.3    286.6    1.8
'REC INT 10 ID 2'    618.6    296.8    1.8
'REC INT 10 ID 3'    621.7    276.1    1.8
'REC INT 10 ID 4'    593.3    262.4    1.8
'REC INT 10 ID 5'    651.2    307.1    1.8
'REC INT 10 ID 6'    562.2    271.9    1.8
'REC INT 10 ID 7'    618.3    329.8    1.8
'REC INT 10 ID 8'    590.3    325.1    1.8
'REC INT 10 ID 9'    562.8    250.2    1.8
'REC INT 10 ID 10'    656.3    290.6    1.8
'INT 10: Canal & North State 2009'   14   1  1  'C'
1
'Approach WB'    'AG'    703.7     317.6    607.7     280.4    2220.    11.73    0.
  16.057
2
'Queue WBL'    'AG'    627.4     283.5    703.7     317.6    0.    3.3526    1
105   61   4   250   66.945   1900   2   3
2
'Queue WBT4'    'AG'    624.8     288.9    703.7     317.6    0.    3.3526    4
105   61   4   1720   66.945   5447   2   3
2
'Queue WBR'    'AG'    623.7     292.0    703.7     317.6    0.    3.3526    1
105   4   4   250   66.945   1900   2   3
1
'Departure WB'    'AG'    607.7     280.4    524.7     243.2    2270.    14.972
0.    16.057
1
'Approach NB'    'AG'    617.0     210.4    607.7     280.4    620.    11.73    0.
 12.705
2
'Queue NBL'    'AG'    611.4     269.6    617.0     210.4    0.    3.3526    1
105   85   4   400   66.945   203   2   3
2
'Queue NBT2'    'AG'    614.7     270.7    617.0     210.4    0.    3.3526    2
105   53   5   420   66.945   3079   2   3
1
'Departure NB'    'AG'    607.7     280.4    600.9     35.1    900.    11.73    0.
 12.705
1
'Approach SB'    'AG'    600.9     35.1    607.7     280.4    670.    11.73    0.
12.705
2
'Queue SBT2'    'AG'    604.6     293.6    600.9     35.1    0.    3.3526    2
105   77   5   750   66.945   3002   2   3
2
'Queue SBR'    'AG'    600.2     290.9    600.9     35.1    0.    3.3526    1
105   5   5   150   66.945   1900   2   3
1
'Departure SB'    'AG'    607.7     280.4    617.0     210.4    1000.    11.73    0.
   12.705
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    9700.    12.524
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 10: Canal & North State 2009

DATE : 1/21/10
TIME : 16:57:20

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
		X1	Y1	X2	Y2										
1. Approach WB	*	703.7	317.6	607.7	280.4	*	103.	249.	AG	2220.	11.7	0.0	16.1		
2. Queue WBL	*	627.4	283.5	650.6	293.9	*	25.	66.	AG	104.	100.0	0.0	3.4	0.36	4.2
3. Queue WBT4	*	624.8	288.9	665.9	303.8	*	44.	70.	AG	417.	100.0	0.0	3.4	0.22	7.3
4. Queue WBR	*	623.7	292.0	625.3	292.5	*	2.	72.	AG	7.	100.0	0.0	3.4	0.15	0.3
5. Departure WB	*	607.7	280.4	524.7	243.2	*	91.	246.	AG	2270.	15.0	0.0	16.1		
6. Approach NB	*	617.0	210.4	607.7	280.4	*	71.	352.	AG	620.	11.7	0.0	12.7		
7. Queue NBL	*	611.4	269.6	730.9	-994.0	*	1269.	175.	AG	145.	100.0	0.0	3.4	****	211.5
8. Queue NBT2	*	614.7	270.7	615.4	252.2	*	19.	178.	AG	181.	100.0	0.0	3.4	0.16	3.1
9. Departure NB	*	607.7	280.4	600.9	35.1	*	245.	182.	AG	900.	11.7	0.0	12.7		
10. Approach SB	*	600.9	35.1	607.7	280.4	*	245.	2.	AG	670.	11.7	0.0	12.7		
11. Queue SBT2	*	604.6	293.6	603.9	245.5	*	48.	181.	AG	263.	100.0	0.0	3.4	0.62	8.0
12. Queue SBR	*	600.2	290.9	600.2	289.6	*	1.	180.	AG	9.	100.0	0.0	3.4	0.09	0.2
13. Departure SB	*	607.7	280.4	617.0	210.4	*	71.	172.	AG	1000.	11.7	0.0	12.7		
14. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	9700.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 10: Canal & North State 2009

DATE : 1/21/10
TIME : 16:57:20

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	61	4.0	250	1900	66.94	2	3
3. Queue WBT4	*	105	61	4.0	1720	5447	66.94	2	3
4. Queue WBR	*	105	4	4.0	250	1900	66.94	2	3
7. Queue NBL	*	105	85	4.0	400	203	66.94	2	3
8. Queue NBT2	*	105	53	5.0	420	3079	66.94	2	3
11. Queue SBT2	*	105	77	5.0	750	3002	66.94	2	3
12. Queue SBR	*	105	5	5.0	150	1900	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 10 ID 1	*	591.3	286.6	1.8	*
2. REC INT 10 ID 2	*	618.6	296.8	1.8	*
3. REC INT 10 ID 3	*	621.7	276.1	1.8	*
4. REC INT 10 ID 4	*	593.3	262.4	1.8	*
5. REC INT 10 ID 5	*	651.2	307.1	1.8	*
6. REC INT 10 ID 6	*	562.2	271.9	1.8	*
7. REC INT 10 ID 7	*	618.3	329.8	1.8	*
8. REC INT 10 ID 8	*	590.3	325.1	1.8	*
9. REC INT 10 ID 9	*	562.8	250.2	1.8	*
10. REC INT 10 ID 10	*	656.3	290.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 10: Canal & North State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	0.1	0.1	1.2	1.3	0.1	0.1	0.0	0.0	1.3	1.7
10.	*	0.1	0.1	1.4	1.5	0.1	0.1	0.0	0.0	1.4	1.7
20.	*	0.2	0.1	1.8	1.8	0.1	0.2	0.0	0.0	1.5	1.9
30.	*	0.2	0.2	2.1	2.5	0.2	0.2	0.0	0.0	1.6	1.8
40.	*	0.3	0.3	2.5	2.9	0.3	0.4	0.0	0.0	2.2	1.9
50.	*	0.7	0.6	2.8	3.5	0.5	0.8	0.0	0.0	2.7	1.7
60.	*	1.4	1.1	2.6	3.6	0.8	1.6	0.1	0.1	3.1	1.6
70.	*	2.1	1.7	2.1	3.2	1.2	2.3	0.2	0.2	3.0	1.3
80.	*	2.5	2.1	1.5	2.8	1.6	2.8	0.4	0.5	2.5	1.0
90.	*	2.8	2.6	1.1	2.7	1.9	3.2	0.6	0.6	2.0	0.8
100.	*	2.8	2.8	1.1	2.5	2.1	3.3	0.8	1.0	1.8	0.8
110.	*	2.9	2.8	1.0	2.4	2.4	2.9	1.1	1.3	1.5	0.9
120.	*	3.1	2.6	0.8	2.4	2.5	2.7	1.3	1.4	1.4	0.9
130.	*	3.1	2.3	0.8	2.4	2.4	2.5	1.4	1.4	1.3	0.7
140.	*	3.5	2.1	0.8	2.2	2.4	2.3	1.5	1.3	1.1	0.7
150.	*	3.5	1.9	0.8	2.0	2.5	2.1	1.6	1.8	1.1	0.7
160.	*	3.2	1.8	0.9	1.8	2.5	2.2	1.6	2.1	1.1	0.8
170.	*	2.9	2.3	1.4	1.6	2.6	2.1	2.0	2.2	1.0	0.9
180.	*	2.4	2.9	1.9	1.3	2.7	1.8	2.1	1.7	0.8	1.0
190.	*	2.0	3.2	2.5	1.0	3.1	1.9	2.2	1.6	0.8	1.3
200.	*	2.1	3.2	2.6	0.9	3.2	1.9	2.0	1.2	0.8	1.3
210.	*	2.1	3.1	2.8	0.9	3.7	1.8	1.4	1.0	0.7	1.6
220.	*	1.9	2.9	2.9	0.9	3.9	1.7	1.1	0.7	0.6	1.8
230.	*	1.8	2.6	3.0	0.9	3.7	1.5	0.9	0.5	0.6	2.3
240.	*	1.4	2.2	3.0	1.2	3.1	1.2	0.6	0.2	0.9	2.9
250.	*	1.1	1.6	3.4	1.6	2.3	0.8	0.2	0.1	1.1	3.1
260.	*	0.6	1.0	3.4	1.8	1.4	0.5	0.1	0.0	1.4	3.2
270.	*	0.3	0.6	2.9	1.8	0.6	0.3	0.1	0.0	1.4	3.0
280.	*	0.2	0.2	2.6	1.6	0.4	0.1	0.1	0.0	1.4	2.6
290.	*	0.1	0.2	2.1	1.5	0.3	0.0	0.1	0.0	1.4	2.3
300.	*	0.1	0.2	1.7	1.3	0.2	0.0	0.0	0.0	1.2	2.1
310.	*	0.1	0.1	1.4	1.1	0.1	0.0	0.0	0.0	1.1	2.0
320.	*	0.0	0.1	1.1	1.1	0.1	0.0	0.0	0.0	1.2	1.8
330.	*	0.0	0.0	1.1	1.2	0.1	0.0	0.0	0.0	1.2	1.7
340.	*	0.0	0.0	1.0	1.2	0.0	0.0	0.0	0.0	1.2	1.8
350.	*	0.0	0.0	1.1	1.2	0.0	0.0	0.0	0.0	1.3	1.7
360.	*	0.1	0.1	1.2	1.3	0.1	0.1	0.0	0.0	1.3	1.7
MAX	*	3.5	3.2	3.4	3.6	3.9	3.3	2.2	2.2	3.1	3.2
DEGR.	*	140	190	250	60	220	100	190	170	60	260

THE HIGHEST CONCENTRATION OF 3.90 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 10: Canal & North State 2009

DATE : 1/21/10
TIME : 16:57:20

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
	*	140	190	250	60	220	100	190	170	60	260
1	*	0.1	0.6	0.2	0.6	1.0	0.1	0.2	0.1	0.3	1.0
2	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
3	*	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.1	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.8	0.1	0.9	0.4	0.1	1.1	0.2	0.3	1.0	0.4
6	*	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0
7	*	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0
8	*	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
9	*	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.0
10	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0
11	*	0.4	0.2	0.3	0.4	0.1	0.2	0.2	0.2	0.2	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1
14	*	1.0	1.0	0.9	1.0	1.2	1.3	1.0	0.9	1.2	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 10 ID 1'    591.3    286.6    1.8
'REC INT 10 ID 2'    618.6    296.8    1.8
'REC INT 10 ID 3'    621.7    276.1    1.8
'REC INT 10 ID 4'    593.3    262.4    1.8
'REC INT 10 ID 5'    651.2    307.1    1.8
'REC INT 10 ID 6'    562.2    271.9    1.8
'REC INT 10 ID 7'    618.3    329.8    1.8
'REC INT 10 ID 8'    590.3    325.1    1.8
'REC INT 10 ID 9'    562.8    250.2    1.8
'REC INT 10 ID 10'    656.3    290.6    1.8
'INT 10: Canal & N.State 2012 Build'   14   1  1  'C'
1
'Approach WB'    'AG'    703.7     317.6    607.7     280.4    2688.    10.15    0.
  16.057
2
'Queue WBL'    'AG'    627.4     283.5    703.7     317.6    0.    3.3526    1
105   61   4   336   56.345   1900   2   3
2
'Queue WBT4'    'AG'    624.8     288.9    703.7     317.6    0.    3.3526    4
105   61   4   2091   56.345   5447   2   3
2
'Queue WBR'    'AG'    623.7     292.0    703.7     317.6    0.    3.3526    1
105   4   4   261   56.345   1900   2   3
1
'Departure WB'    'AG'    607.7     280.4    524.7     243.2    2691.    12.574
0.    16.057
1
'Approach NB'    'AG'    617.0     210.4    607.7     280.4    999.    10.15    0.
 12.705
2
'Queue NBL'    'AG'    611.4     269.6    617.0     210.4    0.    3.3526    1
105   85   4   417   56.345   203   2   3
2
'Queue NBT2'    'AG'    614.7     270.7    617.0     210.4    0.    3.3526    2
105   53   5   582   56.345   3079   2   3
1
'Departure NB'    'AG'    607.7     280.4    600.9     35.1    843.    10.15    0.
 12.705
1
'Approach SB'    'AG'    600.9     35.1    607.7     280.4    871.    10.15    0.
12.705
2
'Queue SBT2'    'AG'    604.6     293.6    600.9     35.1    0.    3.3526    2
105   77   5   688   56.345   3002   2   3
2
'Queue SBR'    'AG'    600.2     290.9    600.9     35.1    0.    3.3526    1
105   5   5   183   56.345   1900   2   3
1
'Departure SB'    'AG'    607.7     280.4    617.0     210.4    1024.    10.15    0.
   12.705
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    9700.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	703.7	317.6	607.7	280.4	*	103.	249.	AG	2688.	10.1	0.0	16.1		
2. Queue WBL	*	627.4	283.5	658.6	297.4	*	34.	66.	AG	88.	100.0	0.0	3.4	0.49	5.7
3. Queue WBT4	*	624.8	288.9	674.7	307.0	*	53.	70.	AG	351.	100.0	0.0	3.4	0.26	8.8
4. Queue WBR	*	623.7	292.0	625.4	292.5	*	2.	72.	AG	6.	100.0	0.0	3.4	0.15	0.3
5. Departure WB	*	607.7	280.4	524.7	243.2	*	91.	246.	AG	2691.	12.6	0.0	16.1		
6. Approach NB	*	617.0	210.4	607.7	280.4	*	71.	352.	AG	999.	10.1	0.0	12.7		
7. Queue NBL	*	611.4	269.6	736.3	-1051.1	*	1327.	175.	AG	122.	100.0	0.0	3.4	****	221.1
8. Queue NBT2	*	614.7	270.7	615.7	245.0	*	26.	178.	AG	153.	100.0	0.0	3.4	0.22	4.3
9. Departure NB	*	607.7	280.4	600.9	35.1	*	245.	182.	AG	843.	10.1	0.0	12.7		
10. Approach SB	*	600.9	35.1	607.7	280.4	*	245.	2.	AG	871.	10.1	0.0	12.7		
11. Queue SBT2	*	604.6	293.6	604.0	249.5	*	44.	181.	AG	222.	100.0	0.0	3.4	0.57	7.4
12. Queue SBR	*	600.2	290.9	600.2	289.4	*	2.	180.	AG	7.	100.0	0.0	3.4	0.11	0.3
13. Departure SB	*	607.7	280.4	617.0	210.4	*	71.	172.	AG	1024.	10.1	0.0	12.7		
14. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	9700.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	61	4.0	336	1900	56.35	2	3
3. Queue WBT4	*	105	61	4.0	2091	5447	56.35	2	3
4. Queue WBR	*	105	4	4.0	261	1900	56.35	2	3
7. Queue NBL	*	105	85	4.0	417	203	56.35	2	3
8. Queue NBT2	*	105	53	5.0	582	3079	56.35	2	3
11. Queue SBT2	*	105	77	5.0	688	3002	56.35	2	3
12. Queue SBR	*	105	5	5.0	183	1900	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 10 ID 1	*	591.3	286.6	1.8	*
2. REC INT 10 ID 2	*	618.6	296.8	1.8	*
3. REC INT 10 ID 3	*	621.7	276.1	1.8	*
4. REC INT 10 ID 4	*	593.3	262.4	1.8	*
5. REC INT 10 ID 5	*	651.2	307.1	1.8	*
6. REC INT 10 ID 6	*	562.2	271.9	1.8	*
7. REC INT 10 ID 7	*	618.3	329.8	1.8	*
8. REC INT 10 ID 8	*	590.3	325.1	1.8	*
9. REC INT 10 ID 9	*	562.8	250.2	1.8	*
10. REC INT 10 ID 10	*	656.3	290.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.1	0.1	1.1	1.3	0.1	0.1	0.0	0.0	1.2	1.8
10.	* 0.1	0.1	1.3	1.4	0.0	0.1	0.0	0.0	1.3	1.8
20.	* 0.2	0.1	1.7	1.5	0.2	0.2	0.0	0.0	1.4	1.9
30.	* 0.2	0.2	2.0	2.4	0.2	0.2	0.0	0.0	1.6	2.0
40.	* 0.3	0.3	2.4	2.6	0.3	0.4	0.0	0.0	2.1	1.9
50.	* 0.6	0.5	2.7	3.4	0.5	0.7	0.0	0.0	2.5	1.9
60.	* 1.2	1.0	2.4	3.3	0.8	1.5	0.1	0.0	2.9	1.7
70.	* 1.8	1.6	2.0	3.1	1.2	2.1	0.2	0.2	2.7	1.4
80.	* 2.4	2.1	1.4	2.6	1.7	2.6	0.3	0.4	2.3	1.0
90.	* 2.6	2.5	1.0	2.5	2.0	2.9	0.5	0.8	2.0	0.7
100.	* 2.8	2.5	1.0	2.3	2.2	3.0	0.8	0.9	1.6	0.7
110.	* 2.7	2.6	0.9	2.1	2.4	2.7	1.0	1.2	1.4	0.8
120.	* 2.6	2.3	0.7	2.2	2.4	2.5	1.2	1.3	1.3	0.8
130.	* 3.0	2.2	0.7	2.1	2.2	2.3	1.3	1.3	1.1	0.6
140.	* 3.0	1.9	0.7	1.9	2.4	2.2	1.3	1.2	1.0	0.6
150.	* 3.1	1.7	0.7	1.9	2.4	2.0	1.3	1.7	1.0	0.6
160.	* 2.9	1.7	0.8	1.7	2.4	2.0	1.5	1.8	0.9	0.7
170.	* 2.6	2.2	1.4	1.4	2.5	2.0	1.7	2.0	0.9	0.8
180.	* 2.2	2.9	1.8	1.2	2.5	1.6	2.0	1.7	0.6	0.8
190.	* 1.9	3.1	2.0	0.9	2.8	1.8	1.9	1.4	0.7	1.2
200.	* 1.9	2.9	2.7	0.8	3.1	1.8	1.7	1.1	0.7	1.2
210.	* 1.9	3.1	2.6	0.8	3.3	1.7	1.3	0.9	0.6	1.5
220.	* 1.8	2.8	2.7	0.8	3.6	1.6	1.0	0.7	0.5	1.7
230.	* 1.7	2.5	2.5	0.8	3.5	1.4	0.8	0.5	0.6	2.1
240.	* 1.3	2.1	2.8	1.1	2.8	1.1	0.5	0.2	0.8	2.6
250.	* 1.0	1.5	3.2	1.5	2.1	0.7	0.2	0.1	1.1	3.1
260.	* 0.5	0.8	3.2	1.8	1.3	0.4	0.1	0.0	1.3	2.9
270.	* 0.3	0.5	3.0	1.7	0.7	0.2	0.0	0.0	1.4	2.7
280.	* 0.1	0.2	2.5	1.6	0.3	0.1	0.0	0.0	1.3	2.4
290.	* 0.1	0.2	2.0	1.4	0.3	0.0	0.0	0.0	1.3	2.2
300.	* 0.1	0.1	1.8	1.2	0.1	0.0	0.0	0.0	1.2	2.0
310.	* 0.1	0.1	1.3	1.1	0.1	0.0	0.0	0.0	1.1	1.9
320.	* 0.0	0.0	1.2	1.1	0.1	0.0	0.0	0.0	1.1	1.8
330.	* 0.0	0.0	1.1	1.2	0.0	0.0	0.0	0.0	1.2	1.8
340.	* 0.0	0.0	1.0	1.2	0.0	0.0	0.0	0.0	1.2	1.9
350.	* 0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	1.2	1.8
360.	* 0.1	0.1	1.1	1.3	0.1	0.1	0.0	0.0	1.2	1.8
MAX	* 3.1	3.1	3.2	3.4	3.6	3.0	2.0	2.0	2.9	3.1
DEGR.	* 150	190	250	50	220	100	180	170	60	250

THE HIGHEST CONCENTRATION OF 3.60 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 Build

DATE : 1/22/10
TIME : 14:52:19

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 150	REC2 190	REC3 250	REC4 50	REC5 220	REC6 100	REC7 180	REC8 170	REC9 60	REC10 250
1	*	0.0	0.7	0.2	0.6	1.0	0.1	0.3	0.1	0.3	0.9
2	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
3	*	0.0	0.0	0.0	0.2	0.7	0.0	0.1	0.0	0.1	0.2
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.9	0.1	0.9	0.6	0.1	1.1	0.1	0.3	1.0	0.4
6	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
7	*	0.2	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.0	0.0
8	*	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
9	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
10	*	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
11	*	0.3	0.2	0.3	0.4	0.1	0.1	0.1	0.2	0.1	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
14	*	0.8	0.9	0.8	0.8	1.0	1.1	0.8	0.8	1.0	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 10 ID 1'    591.3    286.6    1.8
'REC INT 10 ID 2'    618.6    296.8    1.8
'REC INT 10 ID 3'    621.7    276.1    1.8
'REC INT 10 ID 4'    593.3    262.4    1.8
'REC INT 10 ID 5'    651.2    307.1    1.8
'REC INT 10 ID 6'    562.2    271.9    1.8
'REC INT 10 ID 7'    618.3    329.8    1.8
'REC INT 10 ID 8'    590.3    325.1    1.8
'REC INT 10 ID 9'    562.8    250.2    1.8
'REC INT 10 ID 10'    656.3    290.6    1.8
'INT 10: Canal & N.State 2012 No-Build'   14   1  1  'C'
1
'Approach WB'    'AG'    703.7     317.6    607.7     280.4    2678.    10.15    0.
  16.057
2
'Queue WBL'    'AG'    627.4     283.5    703.7     317.6    0.    3.3526    1
105   61   4   331   56.345   1900   2   3
2
'Queue WBT4'    'AG'    624.8     288.9    703.7     317.6    0.    3.3526    4
105   61   4   2086   56.345   5447   2   3
2
'Queue WBR'    'AG'    623.7     292.0    703.7     317.6    0.    3.3526    1
105   4   4   261   56.345   1900   2   3
1
'Departure WB'    'AG'    607.7     280.4    524.7     243.2    2686.    12.574
0.    16.057
1
'Approach NB'    'AG'    617.0     210.4    607.7     280.4    997.    10.15    0.
 12.705
2
'Queue NBL'    'AG'    611.4     269.6    617.0     210.4    0.    3.3526    1
105   85   4   417   56.345   203   2   3
2
'Queue NBT2'    'AG'    614.7     270.7    617.0     210.4    0.    3.3526    2
105   53   5   580   56.345   3079   2   3
1
'Departure NB'    'AG'    607.7     280.4    600.9     35.1    841.    10.15    0.
 12.705
1
'Approach SB'    'AG'    600.9     35.1    607.7     280.4    852.    10.15    0.
12.705
2
'Queue SBT2'    'AG'    604.6     293.6    600.9     35.1    0.    3.3526    2
105   77   5   669   56.345   3002   2   3
2
'Queue SBR'    'AG'    600.2     290.9    600.9     35.1    0.    3.3526    1
105   5   5   183   56.345   1900   2   3
1
'Departure SB'    'AG'    607.7     280.4    617.0     210.4    1000.    10.15    0.
   12.705
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    9700.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	703.7	317.6	607.7	280.4	*	103.	249.	AG	2678.	10.1	0.0	16.1		
2. Queue WBL	*	627.4	283.5	658.1	297.2	*	34.	66.	AG	88.	100.0	0.0	3.4	0.48	5.6
3. Queue WBT4	*	624.8	288.9	674.6	307.0	*	53.	70.	AG	351.	100.0	0.0	3.4	0.26	8.8
4. Queue WBR	*	623.7	292.0	625.4	292.5	*	2.	72.	AG	6.	100.0	0.0	3.4	0.15	0.3
5. Departure WB	*	607.7	280.4	524.7	243.2	*	91.	246.	AG	2686.	12.6	0.0	16.1		
6. Approach NB	*	617.0	210.4	607.7	280.4	*	71.	352.	AG	997.	10.1	0.0	12.7		
7. Queue NBL	*	611.4	269.6	736.3	-1051.1	*	1327.	175.	AG	122.	100.0	0.0	3.4	****	221.1
8. Queue NBT2	*	614.7	270.7	615.7	245.1	*	26.	178.	AG	153.	100.0	0.0	3.4	0.22	4.3
9. Departure NB	*	607.7	280.4	600.9	35.1	*	245.	182.	AG	841.	10.1	0.0	12.7		
10. Approach SB	*	600.9	35.1	607.7	280.4	*	245.	2.	AG	852.	10.1	0.0	12.7		
11. Queue SBT2	*	604.6	293.6	604.0	250.7	*	43.	181.	AG	222.	100.0	0.0	3.4	0.56	7.1
12. Queue SBR	*	600.2	290.9	600.2	289.4	*	2.	180.	AG	7.	100.0	0.0	3.4	0.11	0.3
13. Departure SB	*	607.7	280.4	617.0	210.4	*	71.	172.	AG	1000.	10.1	0.0	12.7		
14. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	9700.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	61	4.0	331	1900	56.35	2	3
3. Queue WBT4	*	105	61	4.0	2086	5447	56.35	2	3
4. Queue WBR	*	105	4	4.0	261	1900	56.35	2	3
7. Queue NBL	*	105	85	4.0	417	203	56.35	2	3
8. Queue NBT2	*	105	53	5.0	580	3079	56.35	2	3
11. Queue SBT2	*	105	77	5.0	669	3002	56.35	2	3
12. Queue SBR	*	105	5	5.0	183	1900	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 10 ID 1	*	591.3	286.6	1.8	*
2. REC INT 10 ID 2	*	618.6	296.8	1.8	*
3. REC INT 10 ID 3	*	621.7	276.1	1.8	*
4. REC INT 10 ID 4	*	593.3	262.4	1.8	*
5. REC INT 10 ID 5	*	651.2	307.1	1.8	*
6. REC INT 10 ID 6	*	562.2	271.9	1.8	*
7. REC INT 10 ID 7	*	618.3	329.8	1.8	*
8. REC INT 10 ID 8	*	590.3	325.1	1.8	*
9. REC INT 10 ID 9	*	562.8	250.2	1.8	*
10. REC INT 10 ID 10	*	656.3	290.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	0.1	0.1	1.1	1.3	0.1	0.1	0.0	0.0	1.2	1.8
10.	0.1	0.1	1.3	1.4	0.0	0.1	0.0	0.0	1.3	1.8
20.	0.2	0.1	1.7	1.5	0.2	0.2	0.0	0.0	1.4	1.9
30.	0.2	0.2	2.0	2.4	0.2	0.2	0.0	0.0	1.6	2.0
40.	0.3	0.3	2.4	2.6	0.3	0.4	0.0	0.0	2.1	1.9
50.	0.6	0.5	2.7	3.4	0.5	0.7	0.0	0.0	2.5	1.9
60.	1.2	1.0	2.4	3.3	0.8	1.5	0.1	0.0	2.9	1.6
70.	1.8	1.6	2.0	3.1	1.2	2.1	0.2	0.2	2.7	1.4
80.	2.3	2.1	1.4	2.6	1.7	2.6	0.3	0.4	2.3	1.0
90.	2.6	2.5	1.0	2.5	2.0	2.9	0.5	0.7	2.0	0.7
100.	2.8	2.5	1.0	2.3	2.2	3.0	0.8	0.9	1.6	0.7
110.	2.6	2.6	0.9	2.1	2.4	2.7	1.0	1.2	1.4	0.8
120.	2.6	2.3	0.7	2.2	2.4	2.5	1.2	1.3	1.3	0.8
130.	2.9	2.1	0.7	2.1	2.2	2.3	1.3	1.3	1.1	0.6
140.	3.0	1.9	0.7	1.9	2.4	2.2	1.3	1.2	1.0	0.6
150.	3.1	1.7	0.7	1.8	2.4	2.0	1.3	1.7	1.0	0.6
160.	2.9	1.7	0.8	1.6	2.4	2.0	1.5	1.8	0.9	0.7
170.	2.6	2.2	1.4	1.4	2.5	2.0	1.7	2.0	0.9	0.8
180.	2.2	2.9	1.7	1.2	2.5	1.6	2.0	1.7	0.6	0.8
190.	1.9	3.0	2.0	0.9	2.8	1.8	1.9	1.4	0.7	1.2
200.	1.9	2.9	2.7	0.8	3.1	1.8	1.7	1.1	0.7	1.2
210.	1.9	3.0	2.5	0.8	3.3	1.7	1.3	0.9	0.6	1.5
220.	1.8	2.8	2.7	0.8	3.6	1.6	1.0	0.7	0.5	1.6
230.	1.7	2.5	2.4	0.8	3.5	1.4	0.8	0.5	0.6	2.1
240.	1.3	2.1	2.8	1.1	2.8	1.1	0.5	0.2	0.8	2.6
250.	1.0	1.5	3.2	1.5	2.1	0.7	0.2	0.1	1.1	3.0
260.	0.5	0.8	3.1	1.8	1.3	0.4	0.1	0.0	1.3	2.9
270.	0.3	0.5	3.0	1.7	0.6	0.2	0.0	0.0	1.4	2.7
280.	0.1	0.2	2.5	1.6	0.3	0.1	0.0	0.0	1.3	2.4
290.	0.1	0.2	2.0	1.4	0.3	0.0	0.0	0.0	1.3	2.2
300.	0.1	0.1	1.8	1.2	0.1	0.0	0.0	0.0	1.2	2.0
310.	0.1	0.1	1.3	1.1	0.1	0.0	0.0	0.0	1.1	1.9
320.	0.0	0.0	1.2	1.1	0.1	0.0	0.0	0.0	1.1	1.8
330.	0.0	0.0	1.1	1.2	0.0	0.0	0.0	0.0	1.2	1.8
340.	0.0	0.0	1.0	1.2	0.0	0.0	0.0	0.0	1.2	1.9
350.	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	1.2	1.8
360.	0.1	0.1	1.1	1.3	0.1	0.1	0.0	0.0	1.2	1.8
MAX	3.1	3.0	3.2	3.4	3.6	3.0	2.0	2.0	2.9	3.0
DEGR.	150	190	250	50	220	100	180	170	60	250

THE HIGHEST CONCENTRATION OF 3.60 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 150	REC2 190	REC3 250	REC4 50	REC5 220	REC6 100	REC7 180	REC8 170	REC9 60	REC10 250
1	*	0.0	0.7	0.2	0.6	1.0	0.1	0.3	0.1	0.3	0.8
2	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
3	*	0.0	0.0	0.0	0.2	0.7	0.0	0.1	0.0	0.1	0.2
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.9	0.1	0.9	0.6	0.1	1.1	0.1	0.3	1.0	0.4
6	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
7	*	0.2	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.0	0.0
8	*	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
9	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
10	*	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
11	*	0.3	0.1	0.3	0.4	0.1	0.1	0.1	0.2	0.1	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
14	*	0.8	0.9	0.8	0.8	1.0	1.1	0.8	0.8	1.0	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 10 ID 1'    591.3    286.6    1.8
'REC INT 10 ID 2'    618.6    296.8    1.8
'REC INT 10 ID 3'    621.7    276.1    1.8
'REC INT 10 ID 4'    593.3    262.4    1.8
'REC INT 10 ID 5'    651.2    307.1    1.8
'REC INT 10 ID 6'    562.2    271.9    1.8
'REC INT 10 ID 7'    618.3    329.8    1.8
'REC INT 10 ID 8'    590.3    325.1    1.8
'REC INT 10 ID 9'    562.8    250.2    1.8
'REC INT 10 ID 10'    656.3    290.6    1.8
'INT 10: Canal & N.State 2029 Build'   14   1  1  'C'
1
'Approach WB'    'AG'    703.7     317.6    607.7     280.4    3090.    8.189    0.
  16.057
2
'Queue WBL'    'AG'    627.4     283.5    703.7     317.6    0.    3.3526    1
105   61   4   385   44.4925   1900   2   3
2
'Queue WBT4'    'AG'    624.8     288.9    703.7     317.6    0.    3.3526    4
105   61   4   2405   44.4925   5447   2   3
2
'Queue WBR'    'AG'    623.7     292.0    703.7     317.6    0.    3.3526    1
105   4   4   300   44.4925   1900   2   3
1
'Departure WB'    'AG'    607.7     280.4    524.7     243.2    3095.    9.784    0.
   16.057
1
'Approach NB'    'AG'    617.0     210.4    607.7     280.4    1152.    8.189    0.
  12.705
2
'Queue NBL'    'AG'    611.4     269.6    617.0     210.4    0.    3.3526    1
105   85   4   480   44.4925   203   2   3
2
'Queue NBT2'    'AG'    614.7     270.7    617.0     210.4    0.    3.3526    2
105   53   5   672   44.4925   3079   2   3
1
'Departure NB'    'AG'    607.7     280.4    600.9     35.1    972.    8.189    0.
 12.705
1
'Approach SB'    'AG'    600.9     35.1    607.7     280.4    1049.    8.189    0.
 12.705
2
'Queue SBT2'    'AG'    604.6     293.6    600.9     35.1    0.    3.3526    2
105   77   5   839   44.4925   3002   2   3
2
'Queue SBR'    'AG'    600.2     290.9    600.9     35.1    0.    3.3526    1
105   5   5   210   44.4925   1900   2   3
1
'Departure SB'    'AG'    607.7     280.4    617.0     210.4    1224.    8.189    0.
   12.705
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    9700.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	703.7	317.6	607.7	280.4	*	103.	249.	AG	3090.	8.2	0.0	16.1		
2. Queue WBL	*	627.4	283.5	663.1	299.5	*	39.	66.	AG	69.	100.0	0.0	3.4	0.56	6.5
3. Queue WBT4	*	624.8	288.9	682.2	309.8	*	61.	70.	AG	277.	100.0	0.0	3.4	0.30	10.2
4. Queue WBR	*	623.7	292.0	625.6	292.6	*	2.	72.	AG	5.	100.0	0.0	3.4	0.17	0.3
5. Departure WB	*	607.7	280.4	524.7	243.2	*	91.	246.	AG	3095.	9.8	0.0	16.1		
6. Approach NB	*	617.0	210.4	607.7	280.4	*	71.	352.	AG	1152.	8.2	0.0	12.7		
7. Queue NBL	*	611.4	269.6	756.4	-1262.8	*	1539.	175.	AG	97.	100.0	0.0	3.4	****	256.5
8. Queue NBT2	*	614.7	270.7	615.8	241.0	*	30.	178.	AG	120.	100.0	0.0	3.4	0.25	4.9
9. Departure NB	*	607.7	280.4	600.9	35.1	*	245.	182.	AG	972.	8.2	0.0	12.7		
10. Approach SB	*	600.9	35.1	607.7	280.4	*	245.	2.	AG	1049.	8.2	0.0	12.7		
11. Queue SBT2	*	604.6	293.6	603.8	239.8	*	54.	181.	AG	175.	100.0	0.0	3.4	0.70	9.0
12. Queue SBR	*	600.2	290.9	600.2	289.1	*	2.	180.	AG	6.	100.0	0.0	3.4	0.12	0.3
13. Departure SB	*	607.7	280.4	617.0	210.4	*	71.	172.	AG	1224.	8.2	0.0	12.7		
14. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	9700.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	105	61	4.0	385	1900	44.49	2	3
3. Queue WBT4	105	61	4.0	2405	5447	44.49	2	3
4. Queue WBR	105	4	4.0	300	1900	44.49	2	3
7. Queue NBL	105	85	4.0	480	203	44.49	2	3
8. Queue NBT2	105	53	5.0	672	3079	44.49	2	3
11. Queue SBT2	105	77	5.0	839	3002	44.49	2	3
12. Queue SBR	105	5	5.0	210	1900	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC INT 10 ID 1	591.3	286.6	1.8
2. REC INT 10 ID 2	618.6	296.8	1.8
3. REC INT 10 ID 3	621.7	276.1	1.8
4. REC INT 10 ID 4	593.3	262.4	1.8
5. REC INT 10 ID 5	651.2	307.1	1.8
6. REC INT 10 ID 6	562.2	271.9	1.8
7. REC INT 10 ID 7	618.3	329.8	1.8
8. REC INT 10 ID 8	590.3	325.1	1.8
9. REC INT 10 ID 9	562.8	250.2	1.8
10. REC INT 10 ID 10	656.3	290.6	1.8

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.1	0.1	1.0	1.0	0.0	0.1	0.0	0.0	1.1	1.5
10.	* 0.1	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.1	1.6
20.	* 0.1	0.1	1.3	1.3	0.0	0.1	0.0	0.0	1.2	1.8
30.	* 0.1	0.1	1.7	2.0	0.2	0.2	0.0	0.0	1.4	1.8
40.	* 0.2	0.2	2.0	2.3	0.2	0.2	0.0	0.0	1.9	1.9
50.	* 0.5	0.4	2.3	3.0	0.4	0.6	0.0	0.0	2.2	1.9
60.	* 1.0	0.9	2.1	3.0	0.8	1.3	0.0	0.0	2.6	1.6
70.	* 1.6	1.4	1.6	2.7	1.3	1.9	0.2	0.1	2.2	1.3
80.	* 2.1	1.8	1.2	2.5	1.6	2.2	0.3	0.4	1.9	0.8
90.	* 2.0	2.2	0.9	2.2	1.9	2.6	0.4	0.6	1.7	0.6
100.	* 2.3	2.3	0.8	2.0	2.1	2.5	0.7	0.8	1.5	0.6
110.	* 2.2	2.2	0.8	1.9	2.1	2.4	0.9	1.1	1.2	0.7
120.	* 2.3	2.0	0.6	1.9	2.1	2.2	1.1	1.1	1.1	0.7
130.	* 2.6	1.9	0.6	1.9	2.0	2.1	1.1	1.0	0.9	0.5
140.	* 2.8	1.7	0.5	1.9	1.9	2.0	1.2	0.9	0.9	0.5
150.	* 2.8	1.5	0.5	1.7	1.9	1.7	1.2	1.5	0.8	0.5
160.	* 2.6	1.5	0.6	1.5	2.0	1.7	1.2	1.6	0.8	0.5
170.	* 2.3	2.1	1.2	1.4	2.1	1.7	1.5	1.5	0.8	0.6
180.	* 1.9	2.5	1.4	1.0	2.1	1.4	1.7	1.5	0.5	0.7
190.	* 1.7	2.7	1.8	0.7	2.4	1.6	1.7	1.1	0.5	1.0
200.	* 1.6	2.7	2.2	0.6	2.7	1.5	1.6	0.9	0.6	1.0
210.	* 1.7	2.5	2.3	0.6	3.0	1.5	1.0	0.8	0.5	1.3
220.	* 1.6	2.4	2.2	0.7	3.1	1.4	0.8	0.6	0.4	1.4
230.	* 1.4	2.1	2.2	0.7	3.1	1.3	0.7	0.4	0.5	1.9
240.	* 1.2	1.7	2.5	0.9	2.4	0.9	0.4	0.2	0.7	2.1
250.	* 0.8	1.4	2.7	1.3	1.9	0.6	0.1	0.0	0.9	2.7
260.	* 0.4	0.7	2.8	1.6	1.1	0.3	0.1	0.0	1.2	2.6
270.	* 0.2	0.4	2.6	1.5	0.4	0.2	0.0	0.0	1.2	2.4
280.	* 0.1	0.2	2.1	1.4	0.3	0.1	0.0	0.0	1.2	2.1
290.	* 0.1	0.1	1.8	1.3	0.3	0.0	0.0	0.0	1.1	1.8
300.	* 0.1	0.1	1.6	1.1	0.1	0.0	0.0	0.0	1.1	1.8
310.	* 0.1	0.1	1.1	0.9	0.1	0.0	0.0	0.0	1.0	1.7
320.	* 0.0	0.0	1.1	0.9	0.1	0.0	0.0	0.0	1.0	1.6
330.	* 0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	1.7
340.	* 0.0	0.0	1.0	1.1	0.0	0.0	0.0	0.0	1.1	1.6
350.	* 0.0	0.0	0.8	1.0	0.0	0.0	0.0	0.0	1.1	1.6
360.	* 0.1	0.1	1.0	1.0	0.0	0.1	0.0	0.0	1.1	1.5
MAX	* 2.8	2.7	2.8	3.0	3.1	2.6	1.7	1.6	2.6	2.7
DEGR.	* 140	200	260	60	220	90	180	160	60	250

THE HIGHEST CONCENTRATION OF 3.10 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 Build

DATE : 1/22/10
TIME : 15:50:25

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
	*	140	200	260	60	220	90	180	160	60	250
1	*	0.1	0.6	0.3	0.6	0.9	0.2	0.2	0.1	0.3	0.8
2	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
3	*	0.0	0.0	0.0	0.2	0.6	0.1	0.1	0.0	0.1	0.1
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.7	0.2	0.9	0.4	0.1	1.0	0.1	0.2	0.9	0.4
6	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
8	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
10	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
11	*	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
14	*	0.7	0.7	0.6	0.7	0.8	0.8	0.7	0.7	0.8	0.8

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 10 ID 1'    591.3    286.6    1.8
'REC INT 10 ID 2'    618.6    296.8    1.8
'REC INT 10 ID 3'    621.7    276.1    1.8
'REC INT 10 ID 4'    593.3    262.4    1.8
'REC INT 10 ID 5'    651.2    307.1    1.8
'REC INT 10 ID 6'    562.2    271.9    1.8
'REC INT 10 ID 7'    618.3    329.8    1.8
'REC INT 10 ID 8'    590.3    325.1    1.8
'REC INT 10 ID 9'    562.8    250.2    1.8
'REC INT 10 ID 10'    656.3    290.6    1.8
'INT 10: Canal & N.State 2029 No-Build'   14   1  1  'C'
1
'Approach WB'    'AG'    703.7     317.6    607.7     280.4    3080.    8.189    0.
  16.057
2
'Queue WBL'    'AG'    627.4     283.5    703.7     317.6    0.    3.3526    1
105   61   4   380   44.4925   1900   2   3
2
'Queue WBT4'    'AG'    624.8     288.9    703.7     317.6    0.    3.3526    4
105   61   4   2400   44.4925   5447   2   3
2
'Queue WBR'    'AG'    623.7     292.0    703.7     317.6    0.    3.3526    1
105   4   4   300   44.4925   1900   2   3
1
'Departure WB'    'AG'    607.7     280.4    524.7     243.2    3090.    9.784    0.
   16.057
1
'Approach NB'    'AG'    617.0     210.4    607.7     280.4    1150.    8.189    0.
  12.705
2
'Queue NBL'    'AG'    611.4     269.6    617.0     210.4    0.    3.3526    1
105   85   4   480   44.4925   203   2   3
2
'Queue NBT2'    'AG'    614.7     270.7    617.0     210.4    0.    3.3526    2
105   53   5   670   44.4925   3079   2   3
1
'Departure NB'    'AG'    607.7     280.4    600.9     35.1    970.    8.189    0.
 12.705
1
'Approach SB'    'AG'    600.9     35.1    607.7     280.4    1030.    8.189    0.
 12.705
2
'Queue SBT2'    'AG'    604.6     293.6    600.9     35.1    0.    3.3526    2
105   77   5   820   44.4925   3002   2   3
2
'Queue SBR'    'AG'    600.2     290.9    600.9     35.1    0.    3.3526    1
105   5   5   210   44.4925   1900   2   3
1
'Departure SB'    'AG'    607.7     280.4    617.0     210.4    1200.    8.189    0.
   12.705
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    9700.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach WB	*	703.7	317.6	607.7	280.4	*	103.	249.	AG	3080.	8.2	0.0	16.1		
2. Queue WBL	*	627.4	283.5	662.7	299.3	*	39.	66.	AG	69.	100.0	0.0	3.4	0.55	6.4
3. Queue WBT4	*	624.8	288.9	682.1	309.8	*	61.	70.	AG	277.	100.0	0.0	3.4	0.30	10.2
4. Queue WBR	*	623.7	292.0	625.6	292.6	*	2.	72.	AG	5.	100.0	0.0	3.4	0.17	0.3
5. Departure WB	*	607.7	280.4	524.7	243.2	*	91.	246.	AG	3090.	9.8	0.0	16.1		
6. Approach NB	*	617.0	210.4	607.7	280.4	*	71.	352.	AG	1150.	8.2	0.0	12.7		
7. Queue NBL	*	611.4	269.6	756.4	-1262.8	*	1539.	175.	AG	97.	100.0	0.0	3.4	****	256.5
8. Queue NBT2	*	614.7	270.7	615.8	241.1	*	30.	178.	AG	120.	100.0	0.0	3.4	0.25	4.9
9. Departure NB	*	607.7	280.4	600.9	35.1	*	245.	182.	AG	970.	8.2	0.0	12.7		
10. Approach SB	*	600.9	35.1	607.7	280.4	*	245.	2.	AG	1030.	8.2	0.0	12.7		
11. Queue SBT2	*	604.6	293.6	603.8	241.0	*	53.	181.	AG	175.	100.0	0.0	3.4	0.68	8.8
12. Queue SBR	*	600.2	290.9	600.2	289.1	*	2.	180.	AG	6.	100.0	0.0	3.4	0.12	0.3
13. Departure SB	*	607.7	280.4	617.0	210.4	*	71.	172.	AG	1200.	8.2	0.0	12.7		
14. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	9700.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue WBL	*	105	61	4.0	380	1900	44.49	2	3
3. Queue WBT4	*	105	61	4.0	2400	5447	44.49	2	3
4. Queue WBR	*	105	4	4.0	300	1900	44.49	2	3
7. Queue NBL	*	105	85	4.0	480	203	44.49	2	3
8. Queue NBT2	*	105	53	5.0	670	3079	44.49	2	3
11. Queue SBT2	*	105	77	5.0	820	3002	44.49	2	3
12. Queue SBR	*	105	5	5.0	210	1900	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 10 ID 1	*	591.3	286.6	1.8	*
2. REC INT 10 ID 2	*	618.6	296.8	1.8	*
3. REC INT 10 ID 3	*	621.7	276.1	1.8	*
4. REC INT 10 ID 4	*	593.3	262.4	1.8	*
5. REC INT 10 ID 5	*	651.2	307.1	1.8	*
6. REC INT 10 ID 6	*	562.2	271.9	1.8	*
7. REC INT 10 ID 7	*	618.3	329.8	1.8	*
8. REC INT 10 ID 8	*	590.3	325.1	1.8	*
9. REC INT 10 ID 9	*	562.8	250.2	1.8	*
10. REC INT 10 ID 10	*	656.3	290.6	1.8	*

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	0.1	0.1	1.0	1.0	0.0	0.1	0.0	0.0	1.1	1.5
10.	*	0.1	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.1	1.6
20.	*	0.1	0.1	1.3	1.3	0.0	0.1	0.0	0.0	1.2	1.7
30.	*	0.1	0.1	1.7	2.0	0.2	0.2	0.0	0.0	1.4	1.8
40.	*	0.2	0.2	2.0	2.3	0.2	0.2	0.0	0.0	1.9	1.9
50.	*	0.5	0.4	2.3	3.0	0.4	0.6	0.0	0.0	2.2	1.9
60.	*	1.0	0.9	2.1	3.0	0.8	1.3	0.0	0.0	2.6	1.6
70.	*	1.6	1.4	1.6	2.7	1.3	1.9	0.2	0.1	2.2	1.3
80.	*	2.1	1.8	1.1	2.5	1.6	2.2	0.3	0.4	1.9	0.8
90.	*	2.0	2.2	0.9	2.2	1.9	2.6	0.4	0.6	1.7	0.6
100.	*	2.3	2.3	0.8	2.0	2.0	2.5	0.7	0.8	1.5	0.6
110.	*	2.2	2.2	0.8	1.9	2.1	2.4	0.9	1.1	1.2	0.7
120.	*	2.3	2.0	0.6	1.9	2.1	2.2	1.1	1.1	1.1	0.7
130.	*	2.6	1.9	0.6	1.9	2.0	2.1	1.1	1.0	0.9	0.5
140.	*	2.8	1.7	0.5	1.9	1.9	2.0	1.2	0.9	0.9	0.5
150.	*	2.8	1.5	0.5	1.7	1.9	1.7	1.2	1.5	0.8	0.5
160.	*	2.6	1.5	0.6	1.5	2.0	1.7	1.2	1.6	0.8	0.5
170.	*	2.3	2.1	1.2	1.4	2.1	1.7	1.5	1.5	0.8	0.6
180.	*	1.9	2.5	1.4	1.0	2.1	1.4	1.7	1.5	0.5	0.7
190.	*	1.7	2.6	1.8	0.7	2.4	1.6	1.7	1.1	0.5	1.0
200.	*	1.6	2.7	2.2	0.6	2.7	1.5	1.6	0.9	0.6	1.0
210.	*	1.7	2.5	2.3	0.6	2.9	1.5	1.0	0.8	0.5	1.3
220.	*	1.6	2.4	2.2	0.7	3.1	1.4	0.8	0.6	0.4	1.4
230.	*	1.4	2.0	2.2	0.7	3.1	1.3	0.7	0.4	0.5	1.8
240.	*	1.2	1.7	2.5	0.9	2.4	0.9	0.4	0.2	0.7	2.1
250.	*	0.8	1.4	2.7	1.3	1.9	0.6	0.1	0.0	0.9	2.7
260.	*	0.4	0.7	2.8	1.5	1.1	0.3	0.1	0.0	1.1	2.6
270.	*	0.2	0.4	2.6	1.5	0.4	0.2	0.0	0.0	1.2	2.4
280.	*	0.1	0.2	2.0	1.4	0.3	0.1	0.0	0.0	1.2	2.1
290.	*	0.1	0.1	1.8	1.3	0.3	0.0	0.0	0.0	1.1	1.8
300.	*	0.1	0.1	1.5	1.1	0.1	0.0	0.0	0.0	1.1	1.8
310.	*	0.1	0.1	1.1	0.9	0.1	0.0	0.0	0.0	1.0	1.7
320.	*	0.0	0.0	1.1	0.9	0.1	0.0	0.0	0.0	1.0	1.6
330.	*	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	1.7
340.	*	0.0	0.0	1.0	1.1	0.0	0.0	0.0	0.0	1.1	1.6
350.	*	0.0	0.0	0.8	1.0	0.0	0.0	0.0	0.0	1.1	1.6
360.	*	0.1	0.1	1.0	1.0	0.0	0.1	0.0	0.0	1.1	1.5
MAX	*	2.8	2.7	2.8	3.0	3.1	2.6	1.7	1.6	2.6	2.7
DEGR.	*	140	200	260	60	220	90	180	160	60	250

THE HIGHEST CONCENTRATION OF 3.10 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 10: Canal & N.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:11

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
	*	140	200	260	60	220	90	180	160	60	250
1	*	0.1	0.6	0.3	0.6	0.9	0.2	0.2	0.1	0.3	0.8
2	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
3	*	0.0	0.0	0.0	0.2	0.6	0.1	0.1	0.0	0.1	0.1
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.7	0.2	0.9	0.4	0.1	1.0	0.1	0.2	0.9	0.4
6	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
7	*	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
8	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
10	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
11	*	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
14	*	0.7	0.7	0.6	0.7	0.8	0.8	0.7	0.7	0.8	0.8

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 11 ID 1'    603    217.4    1.8
'REC INT 11 ID 2'    590.4    213.6    1.8
'REC INT 11 ID 3'    626.3    223.3    1.8
'REC INT 11 ID 4'    645.6    232.9    1.8
'REC INT 11 ID 5'    606.1    199.9    1.8
'REC INT 11 ID 6'    629.6    207.1    1.8
'REC INT 11 ID 7'    656.6    215.8    1.8
'REC INT 11 ID 8'    614.9    177.2    1.8
'REC INT 11 ID 9'    638.4    185.1    1.8
'REC INT 11 ID 10'    569    202.7    1.8
'INT 11: Canal & South State 2009'   15   1  1  'C'
1
'Approach EB'    'AG'    525.0     169.1    622.2     211.1    2220.    11.73    0.
  16.972
2
'Queue EBL'    'AG'    598.0     211.5    525.0     169.1    0.    3.6574    1
115   66   4   250   66.945   1593   2   3
2
'Queue EBT3'    'AG'    598.9     208.5    525.0     169.1    0.    3.6574    3
115   66   4   1570   66.945   4439   2   3
2
'Queue EBR'    'AG'    599.8     202.5    525.0     169.1    0.    3.6574    1
115   4   4   400   66.945   1900   2   3
1
'Departure EB'    'AG'    622.2     211.1    709.7     253.5    910.    11.73    0.
  16.972
1
'Approach NB'    'AG'    661.1     116.2    622.2     211.1    900.    11.73    0.
 13.010
2
'Queue NBT2'    'AG'    611.4     169.6    661.1     116.2    0.    3.3526    2
115   65   4   650   66.945   2848   2   3
2
'Queue NBR'    'AG'    617.6     272.0    661.1     116.2    0.    3.6574    1
115   4   4   250   66.945   1900   2   3
1
'Departure NB'    'AG'    622.2     211.1    612.9     283.0    900.    11.73    0.
  13.010
1
'Approach SB'    'AG'    612.9     283.0    622.2     211.1    800.    11.73    0.
 13.010
2
'Queue SBL'    'AG'    604.6     293.6    612.9     283.0    0.    3.6574    1
115   111   4   300   66.945   1900   2   3
2
'Queue SBT2'    'AG'    600.2     290.9    612.9     283.0    0.    3.3526    2
115   57   4   500   66.945   1580   2   3
1
'Departure SB'    'AG'    622.2     211.1    661.1     116.2    900.    11.73    0.
  13.010
1
'Exit 7 On-Ramp'    'AG'    622.2     211.1    709.7     253.5    1210.    14.972
0.    9.1496
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    10200.    12.524
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 11: Canal & South State 2009

DATE : 1/21/10
TIME : 16:57:20

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
		X1	Y1	X2	Y2										
1. Approach EB	*	525.0	169.1	622.2	211.1	*	106.	67.	AG	2220.	11.7	0.0	17.0		
2. Queue EBL	*	598.0	211.5	574.2	197.7	*	28.	240.	AG	103.	100.0	0.0	3.7	0.42	4.6
3. Queue EBT3	*	598.9	208.5	548.1	181.4	*	58.	242.	AG	309.	100.0	0.0	3.7	0.32	9.6
4. Queue EBR	*	599.8	202.5	597.4	201.4	*	3.	246.	AG	6.	100.0	0.0	3.7	0.23	0.4
5. Departure EB	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	910.	11.7	0.0	17.0		
6. Approach NB	*	661.1	116.2	622.2	211.1	*	103.	338.	AG	900.	11.7	0.0	13.0		
7. Queue NBT2	*	611.4	169.6	635.4	143.8	*	35.	137.	AG	203.	100.0	0.0	3.4	0.30	5.9
8. Queue NBR	*	617.6	272.0	618.0	270.4	*	2.	164.	AG	6.	100.0	0.0	3.7	0.14	0.3
9. Departure NB	*	622.2	211.1	612.9	283.0	*	72.	353.	AG	900.	11.7	0.0	13.0		
10. Approach SB	*	612.9	283.0	622.2	211.1	*	72.	173.	AG	800.	11.7	0.0	13.0		
11. Queue SBL	*	604.6	293.6	1684.6	-1085.7	*	1752.	142.	AG	173.	100.0	0.0	3.7	****	292.0
12. Queue SBT2	*	600.2	290.9	620.4	278.4	*	24.	122.	AG	178.	100.0	0.0	3.4	0.35	4.0
13. Departure SB	*	622.2	211.1	661.1	116.2	*	103.	158.	AG	900.	11.7	0.0	13.0		
14. Exit 7 On-Ramp	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1210.	15.0	0.0	9.1		
15. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	10200.	12.5	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 11: Canal & South State 2009

DATE : 1/21/10
TIME : 16:57:20

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	66	4.0	250	1593	66.94	2	3
3. Queue EBT3	*	115	66	4.0	1570	4439	66.94	2	3
4. Queue EBR	*	115	4	4.0	400	1900	66.94	2	3
7. Queue NBT2	*	115	65	4.0	650	2848	66.94	2	3
8. Queue NBR	*	115	4	4.0	250	1900	66.94	2	3
11. Queue SBL	*	115	111	4.0	300	1900	66.94	2	3
12. Queue SBT2	*	115	57	4.0	500	1580	66.94	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 11 ID 1	*	603.0	217.4	1.8	*
2. REC INT 11 ID 2	*	590.4	213.6	1.8	*
3. REC INT 11 ID 3	*	626.3	223.3	1.8	*
4. REC INT 11 ID 4	*	645.6	232.9	1.8	*
5. REC INT 11 ID 5	*	606.1	199.9	1.8	*
6. REC INT 11 ID 6	*	629.6	207.1	1.8	*
7. REC INT 11 ID 7	*	656.6	215.8	1.8	*
8. REC INT 11 ID 8	*	614.9	177.2	1.8	*
9. REC INT 11 ID 9	*	638.4	185.1	1.8	*
10. REC INT 11 ID 10	*	569.0	202.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 11: Canal & South State 2009

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	1.2	0.9	1.7	1.3	2.0	2.8	2.1	1.9	1.9	0.9
10.	*	1.3	1.1	1.5	1.4	2.3	2.5	2.2	2.0	1.8	0.9
20.	*	1.5	1.2	1.4	1.5	2.4	2.2	2.3	2.3	1.8	0.9
30.	*	1.6	1.4	1.5	1.5	2.8	2.5	2.3	2.1	1.5	1.4
40.	*	1.7	1.5	1.4	1.5	3.1	2.5	2.2	1.9	1.3	1.6
50.	*	1.7	1.6	1.5	1.5	3.2	2.4	2.0	1.7	1.1	1.7
60.	*	2.0	1.7	1.8	1.7	3.2	2.2	1.8	1.5	0.8	2.1
70.	*	2.2	2.0	2.0	2.1	2.9	1.8	1.3	1.0	0.5	2.7
80.	*	2.3	2.1	2.2	2.2	2.3	1.2	1.0	0.7	0.3	2.8
90.	*	2.2	2.2	1.9	2.1	1.7	0.8	0.7	0.6	0.2	2.8
100.	*	1.9	1.8	1.7	2.0	1.1	0.6	0.6	0.6	0.3	2.4
110.	*	1.7	1.9	1.4	1.8	1.0	0.7	0.6	0.6	0.5	2.2
120.	*	1.8	1.9	1.3	1.7	0.9	0.6	0.6	0.6	0.5	2.2
130.	*	1.6	2.2	1.4	1.7	1.0	0.5	0.7	0.6	0.4	2.0
140.	*	1.4	2.0	1.6	1.7	0.9	0.7	0.5	0.7	0.6	1.8
150.	*	1.6	2.0	1.7	1.4	0.6	0.9	0.3	0.5	0.9	1.6
160.	*	1.2	1.9	1.8	1.1	0.6	1.2	0.1	0.4	1.0	1.5
170.	*	0.9	1.7	2.1	1.2	0.3	1.3	0.2	0.4	1.2	1.4
180.	*	1.0	1.7	2.2	1.3	0.4	1.4	0.3	0.4	1.1	1.4
190.	*	1.1	1.7	2.0	1.6	0.3	1.2	0.3	0.3	1.1	1.4
200.	*	1.6	2.0	2.2	1.8	0.4	1.1	0.5	0.2	1.0	1.4
210.	*	1.8	2.0	2.2	1.6	0.6	1.2	0.5	0.1	1.1	1.5
220.	*	2.2	2.0	2.4	2.1	0.9	1.3	0.6	0.1	1.1	1.3
230.	*	2.3	1.8	2.7	2.4	1.4	1.8	0.8	0.1	0.8	1.0
240.	*	2.0	1.3	2.7	2.3	2.0	2.3	1.6	0.2	0.9	0.7
250.	*	1.4	0.9	2.6	2.0	2.4	2.7	2.1	0.5	1.2	0.5
260.	*	1.0	0.6	2.0	1.7	2.6	3.1	2.6	0.8	1.6	0.3
270.	*	0.7	0.6	1.8	1.4	2.7	3.0	2.4	0.9	1.9	0.3
280.	*	0.9	0.7	1.7	1.4	2.6	3.3	2.3	1.2	2.2	0.4
290.	*	0.9	0.8	1.7	1.3	2.5	3.0	2.1	1.4	2.3	0.5
300.	*	0.9	0.8	1.6	1.3	2.4	2.8	2.0	1.6	2.3	0.6
310.	*	0.8	0.7	1.7	1.4	2.1	2.9	2.1	1.7	2.4	0.7
320.	*	0.8	0.7	1.7	1.5	1.9	3.0	2.2	1.7	2.7	0.7
330.	*	0.8	0.8	1.8	1.6	1.9	2.9	2.3	1.6	2.5	0.8
340.	*	0.8	0.8	2.0	1.4	1.7	3.1	2.2	1.6	2.7	0.8
350.	*	0.8	0.8	2.0	1.4	1.9	2.7	2.2	1.6	2.0	0.8
360.	*	1.2	0.9	1.7	1.3	2.0	2.8	2.1	1.9	1.9	0.9
MAX	*	2.3	2.2	2.7	2.4	3.2	3.3	2.6	2.3	2.7	2.8
DEGR.	*	80	130	230	230	50	280	260	20	320	80

THE HIGHEST CONCENTRATION OF 3.30 PPM OCCURRED AT RECEPTOR REC6 .

JOB: Stamford Microscale EIE RUN: INT 11: Canal & South State 2009

DATE : 1/21/10
TIME : 16:57:20

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
	*	80	130	230	230	50	280	260	20	320	80
1	*	0.1	0.6	0.9	0.4	0.9	0.8	0.4	0.2	0.3	0.6
2	*	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2
3	*	0.0	0.4	0.2	0.1	0.0	0.2	0.2	0.0	0.0	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.3	0.0	0.1	0.3	0.2	0.2	0.3	0.1	0.1	0.1
6	*	0.0	0.2	0.0	0.1	0.1	0.3	0.1	0.2	0.5	0.0
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.0	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	*	0.2	0.0	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0
11	*	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.2	0.0	0.1	0.1	0.3	0.1	0.2	0.5	0.0
14	*	0.4	0.0	0.1	0.3	0.4	0.2	0.3	0.2	0.1	0.2
15	*	1.0	0.4	0.8	0.9	1.2	1.0	1.0	1.1	1.0	1.1

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 11 ID 1'    603    217.4    1.8
'REC INT 11 ID 2'    590.4    213.6    1.8
'REC INT 11 ID 3'    626.3    223.3    1.8
'REC INT 11 ID 4'    645.6    232.9    1.8
'REC INT 11 ID 5'    606.1    199.9    1.8
'REC INT 11 ID 6'    629.6    207.1    1.8
'REC INT 11 ID 7'    656.6    215.8    1.8
'REC INT 11 ID 8'    614.9    177.2    1.8
'REC INT 11 ID 9'    638.4    185.1    1.8
'REC INT 11 ID 10'    569    202.7    1.8
'INT 11: Canal & S.State 2012 Build'   15   1  1  'C'
1
'Approach EB'    'AG'    525.0     169.1    622.2     211.1    2667.    10.15    0.
  16.972
2
'Queue EBL'    'AG'    598.0     211.5    525.0     169.1    0.    3.6574    1
115   66   4   298   56.345   1593   2   3
2
'Queue EBT3'    'AG'    598.9     208.5    525.0     169.1    0.    3.6574    3
115   66   4   1934   56.345   4439   2   3
2
'Queue EBR'    'AG'    599.8     202.5    525.0     169.1    0.    3.6574    1
115   4   4   433   56.345   1900   2   3
1
'Departure EB'    'AG'    622.2     211.1    709.7     253.5    964.    10.15    0.
  16.972
1
'Approach NB'    'AG'    661.1     116.2    622.2     211.1    1175.    10.15    0.
  13.010
2
'Queue NBT2'    'AG'    611.4     169.6    661.1     116.2    0.    3.3526    2
115   65   4   836   56.345   2848   2   3
2
'Queue NBR'    'AG'    617.6     272.0    661.1     116.2    0.    3.6574    1
115   4   4   339   56.345   1900   2   3
1
'Departure NB'    'AG'    622.2     211.1    612.9     283.0    1134.    10.15    0.
   13.010
1
'Approach SB'    'AG'    612.9     283.0    622.2     211.1    1023.    10.15    0.
  13.010
2
'Queue SBL'    'AG'    604.6     293.6    612.9     283.0    0.    3.6574    1
115   111   4   314   56.345   1900   2   3
2
'Queue SBT2'    'AG'    600.2     290.9    612.9     283.0    0.    3.3526    2
115   57   4   709   56.345   1580   2   3
1
'Departure SB'    'AG'    622.2     211.1    661.1     116.2    1142.    10.15    0.
   13.010
1
'Exit 7 On-Ramp'    'AG'    622.2     211.1    709.7     253.5    1625.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 Build

DATE : 1/22/10
TIME : 14:52:20

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
		X1	Y1	X2	Y2										
1. Approach EB	*	525.0	169.1	622.2	211.1	*	106.	67.	AG	2667.	10.1	0.0	17.0		
2. Queue EBL	*	598.0	211.5	569.7	195.0	*	33.	240.	AG	87.	100.0	0.0	3.7	0.50	5.5
3. Queue EBT3	*	598.9	208.5	536.4	175.2	*	71.	242.	AG	260.	100.0	0.0	3.7	0.39	11.8
4. Queue EBR	*	599.8	202.5	597.2	201.3	*	3.	246.	AG	5.	100.0	0.0	3.7	0.25	0.5
5. Departure EB	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	964.	10.1	0.0	17.0		
6. Approach NB	*	661.1	116.2	622.2	211.1	*	103.	338.	AG	1175.	10.1	0.0	13.0		
7. Queue NBT2	*	611.4	169.6	642.3	136.5	*	45.	137.	AG	171.	100.0	0.0	3.4	0.38	7.5
8. Queue NBR	*	617.6	272.0	618.2	269.8	*	2.	164.	AG	5.	100.0	0.0	3.7	0.20	0.4
9. Departure NB	*	622.2	211.1	612.9	283.0	*	72.	353.	AG	1134.	10.1	0.0	13.0		
10. Approach SB	*	612.9	283.0	622.2	211.1	*	72.	173.	AG	1023.	10.1	0.0	13.0		
11. Queue SBL	*	604.6	293.6	1845.9	-1291.7	*	2013.	142.	AG	146.	100.0	0.0	3.7	****	335.6
12. Queue SBT2	*	600.2	290.9	628.8	273.1	*	34.	122.	AG	150.	100.0	0.0	3.4	0.50	5.6
13. Departure SB	*	622.2	211.1	661.1	116.2	*	103.	158.	AG	1142.	10.1	0.0	13.0		
14. Exit 7 On-Ramp	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1625.	12.6	0.0	9.1		
15. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 Build

DATE : 1/22/10
TIME : 14:52:20

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	66	4.0	298	1593	56.35	2	3
3. Queue EBT3	*	115	66	4.0	1934	4439	56.35	2	3
4. Queue EBR	*	115	4	4.0	433	1900	56.35	2	3
7. Queue NBT2	*	115	65	4.0	836	2848	56.35	2	3
8. Queue NBR	*	115	4	4.0	339	1900	56.35	2	3
11. Queue SBL	*	115	111	4.0	314	1900	56.35	2	3
12. Queue SBT2	*	115	57	4.0	709	1580	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 11 ID 1	*	603.0	217.4	1.8	*
2. REC INT 11 ID 2	*	590.4	213.6	1.8	*
3. REC INT 11 ID 3	*	626.3	223.3	1.8	*
4. REC INT 11 ID 4	*	645.6	232.9	1.8	*
5. REC INT 11 ID 5	*	606.1	199.9	1.8	*
6. REC INT 11 ID 6	*	629.6	207.1	1.8	*
7. REC INT 11 ID 7	*	656.6	215.8	1.8	*
8. REC INT 11 ID 8	*	614.9	177.2	1.8	*
9. REC INT 11 ID 9	*	638.4	185.1	1.8	*
10. REC INT 11 ID 10	*	569.0	202.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 1.1	0.8	1.7	1.2	2.0	2.6	2.1	1.9	2.0	0.8
10.	* 1.4	1.0	1.4	1.2	2.2	2.3	2.0	2.1	1.6	0.8
20.	* 1.3	1.1	1.1	1.2	2.2	2.1	2.1	2.2	1.7	0.8
30.	* 1.4	1.2	1.3	1.3	2.7	2.3	2.1	2.0	1.7	1.2
40.	* 1.5	1.5	1.3	1.4	2.9	2.5	2.1	1.9	1.2	1.4
50.	* 1.6	1.5	1.2	1.4	3.0	2.4	1.8	1.6	1.0	1.5
60.	* 1.8	1.7	1.6	1.6	3.2	2.2	1.5	1.4	0.8	2.0
70.	* 2.1	1.9	1.9	1.8	3.0	1.7	1.2	0.9	0.4	2.3
80.	* 2.2	2.0	1.9	2.1	2.2	1.1	0.9	0.7	0.3	2.9
90.	* 2.1	2.1	1.9	2.0	1.6	0.7	0.6	0.6	0.2	2.6
100.	* 1.9	2.1	1.6	1.8	1.2	0.4	0.6	0.6	0.2	2.3
110.	* 1.6	1.7	1.4	1.7	1.0	0.7	0.5	0.6	0.4	2.1
120.	* 1.8	2.0	1.4	1.5	1.1	0.6	0.5	0.6	0.5	2.1
130.	* 1.7	1.9	1.3	1.6	0.9	0.5	0.6	0.6	0.4	2.0
140.	* 1.6	1.9	1.6	1.6	0.9	0.9	0.5	0.7	0.7	1.9
150.	* 1.4	1.9	1.7	1.3	0.6	1.0	0.3	0.5	0.9	1.7
160.	* 1.2	1.6	1.8	1.1	0.5	1.2	0.1	0.4	1.2	1.5
170.	* 1.0	1.5	2.4	1.2	0.3	1.4	0.2	0.4	1.3	1.5
180.	* 1.0	1.5	2.2	1.4	0.4	1.4	0.3	0.3	1.3	1.4
190.	* 1.1	1.6	2.4	1.6	0.3	1.3	0.4	0.3	1.2	1.3
200.	* 1.5	1.8	2.3	1.8	0.4	1.2	0.7	0.2	1.1	1.4
210.	* 1.7	1.9	2.3	1.7	0.5	1.1	0.7	0.1	0.9	1.4
220.	* 2.1	1.9	2.5	2.1	0.8	1.3	0.8	0.1	1.0	1.4
230.	* 2.2	1.8	2.7	2.4	1.4	1.8	0.8	0.1	1.0	1.2
240.	* 1.8	1.3	2.7	2.2	2.0	2.4	1.5	0.2	1.1	0.7
250.	* 1.3	0.8	2.5	2.0	2.4	2.9	2.0	0.4	1.3	0.5
260.	* 0.9	0.6	1.9	1.7	2.7	3.2	2.5	0.7	1.7	0.3
270.	* 0.6	0.5	1.7	1.4	2.5	2.9	2.3	1.0	2.0	0.3
280.	* 0.8	0.6	1.6	1.4	2.4	3.0	2.1	1.2	2.1	0.4
290.	* 0.8	0.7	1.6	1.3	2.3	3.1	2.0	1.4	2.2	0.5
300.	* 0.7	0.7	1.6	1.2	2.2	3.0	2.0	1.4	2.4	0.5
310.	* 0.7	0.6	1.6	1.3	2.0	2.8	2.0	1.5	2.3	0.6
320.	* 0.7	0.6	1.7	1.3	1.8	2.8	2.1	1.6	2.5	0.6
330.	* 0.7	0.7	1.8	1.4	1.6	3.0	2.1	1.4	2.6	0.7
340.	* 0.7	0.7	2.0	1.3	1.6	3.0	2.0	1.4	2.6	0.7
350.	* 0.7	0.7	1.9	1.2	1.7	2.7	2.0	1.5	2.1	0.7
360.	* 1.1	0.8	1.7	1.2	2.0	2.6	2.1	1.9	2.0	0.8
MAX	* 2.2	2.1	2.7	2.4	3.2	3.2	2.5	2.2	2.6	2.9
DEGR.	* 80	100	230	230	60	260	260	20	330	80

THE HIGHEST CONCENTRATION OF 3.20 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 Build

DATE : 1/22/10
TIME : 14:52:20

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 100	REC3 230	REC4 230	REC5 60	REC6 260	REC7 260	REC8 20	REC9 330	REC10 80
1	*	0.2	0.6	0.9	0.5	0.9	1.1	0.5	0.2	0.2	0.6
2	*	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2
3	*	0.0	0.1	0.2	0.1	0.0	0.3	0.2	0.0	0.0	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.2	0.1	0.1	0.3	0.3	0.1	0.2	0.1	0.1	0.1
6	*	0.0	0.1	0.0	0.1	0.1	0.4	0.1	0.2	0.5	0.1
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.1	0.4	0.1	0.1	0.0	0.1	0.1	0.2	0.1
10	*	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.1
11	*	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.1	0.0	0.1	0.1	0.4	0.1	0.2	0.5	0.0
14	*	0.4	0.2	0.1	0.4	0.5	0.1	0.3	0.2	0.1	0.2
15	*	0.9	0.5	0.7	0.7	1.0	0.7	0.9	1.0	0.9	1.0

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 11 ID 1'    603    217.4    1.8
'REC INT 11 ID 2'    590.4    213.6    1.8
'REC INT 11 ID 3'    626.3    223.3    1.8
'REC INT 11 ID 4'    645.6    232.9    1.8
'REC INT 11 ID 5'    606.1    199.9    1.8
'REC INT 11 ID 6'    629.6    207.1    1.8
'REC INT 11 ID 7'    656.6    215.8    1.8
'REC INT 11 ID 8'    614.9    177.2    1.8
'REC INT 11 ID 9'    638.4    185.1    1.8
'REC INT 11 ID 10'    569    202.7    1.8
'INT 11: Canal & S.State 2012 No-Build'   15   1  1  'C'
1
'Approach EB'    'AG'    525.0     169.1    622.2     211.1    2665.    10.15    0.
  16.972
2
'Queue EBL'    'AG'    598.0     211.5    525.0     169.1    0.    3.6574    1
115   66   4   298   56.345   1593   2   3
2
'Queue EBT3'    'AG'    598.9     208.5    525.0     169.1    0.    3.6574    3
115   66   4   1934   56.345   4439   2   3
2
'Queue EBR'    'AG'    599.8     202.5    525.0     169.1    0.    3.6574    1
115   4   4   433   56.345   1900   2   3
1
'Departure EB'    'AG'    622.2     211.1    709.7     253.5    964.    10.15    0.
  16.972
1
'Approach NB'    'AG'    661.1     116.2    622.2     211.1    1167.    10.15    0.
  13.010
2
'Queue NBT2'    'AG'    611.4     169.6    661.1     116.2    0.    3.3526    2
115   65   4   830   56.345   2848   2   3
2
'Queue NBR'    'AG'    617.6     272.0    661.1     116.2    0.    3.6574    1
115   4   4   337   56.345   1900   2   3
1
'Departure NB'    'AG'    622.2     211.1    612.9     283.0    1228.    10.15    0.
   13.010
1
'Approach SB'    'AG'    612.9     283.0    622.2     211.1    1019.    10.15    0.
  13.010
2
'Queue SBL'    'AG'    604.6     293.6    612.9     283.0    0.    3.6574    1
115   111   4   314   56.345   1900   2   3
2
'Queue SBT2'    'AG'    600.2     290.9    612.9     283.0    0.    3.3526    2
115   57   4   705   56.345   1580   2   3
1
'Departure SB'    'AG'    622.2     211.1    661.1     116.2    1138.    10.15    0.
   13.010
1
'Exit 7 On-Ramp'    'AG'    622.2     211.1    709.7     253.5    1621.    12.574
0.    9.1496
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    10200.    10.832
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:26

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
		X1	Y1	X2	Y2										
1. Approach EB	*	525.0	169.1	622.2	211.1	*	106.	67.	AG	2665.	10.1	0.0	17.0		
2. Queue EBL	*	598.0	211.5	569.7	195.0	*	33.	240.	AG	87.	100.0	0.0	3.7	0.50	5.5
3. Queue EBT3	*	598.9	208.5	536.4	175.2	*	71.	242.	AG	260.	100.0	0.0	3.7	0.39	11.8
4. Queue EBR	*	599.8	202.5	597.2	201.3	*	3.	246.	AG	5.	100.0	0.0	3.7	0.25	0.5
5. Departure EB	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	964.	10.1	0.0	17.0		
6. Approach NB	*	661.1	116.2	622.2	211.1	*	103.	338.	AG	1167.	10.1	0.0	13.0		
7. Queue NBT2	*	611.4	169.6	642.0	136.7	*	45.	137.	AG	171.	100.0	0.0	3.4	0.38	7.5
8. Queue NBR	*	617.6	272.0	618.2	269.8	*	2.	164.	AG	5.	100.0	0.0	3.7	0.19	0.4
9. Departure NB	*	622.2	211.1	612.9	283.0	*	72.	353.	AG	1228.	10.1	0.0	13.0		
10. Approach SB	*	612.9	283.0	622.2	211.1	*	72.	173.	AG	1019.	10.1	0.0	13.0		
11. Queue SBL	*	604.6	293.6	1845.9	-1291.7	*	2013.	142.	AG	146.	100.0	0.0	3.7	****	335.6
12. Queue SBT2	*	600.2	290.9	628.6	273.2	*	33.	122.	AG	150.	100.0	0.0	3.4	0.49	5.6
13. Departure SB	*	622.2	211.1	661.1	116.2	*	103.	158.	AG	1138.	10.1	0.0	13.0		
14. Exit 7 On-Ramp	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1621.	12.6	0.0	9.1		
15. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	10200.	10.8	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:26

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	66	4.0	298	1593	56.35	2	3
3. Queue EBT3	*	115	66	4.0	1934	4439	56.35	2	3
4. Queue EBR	*	115	4	4.0	433	1900	56.35	2	3
7. Queue NBT2	*	115	65	4.0	830	2848	56.35	2	3
8. Queue NBR	*	115	4	4.0	337	1900	56.35	2	3
11. Queue SBL	*	115	111	4.0	314	1900	56.35	2	3
12. Queue SBT2	*	115	57	4.0	705	1580	56.35	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 11 ID 1	*	603.0	217.4	1.8	*
2. REC INT 11 ID 2	*	590.4	213.6	1.8	*
3. REC INT 11 ID 3	*	626.3	223.3	1.8	*
4. REC INT 11 ID 4	*	645.6	232.9	1.8	*
5. REC INT 11 ID 5	*	606.1	199.9	1.8	*
6. REC INT 11 ID 6	*	629.6	207.1	1.8	*
7. REC INT 11 ID 7	*	656.6	215.8	1.8	*
8. REC INT 11 ID 8	*	614.9	177.2	1.8	*
9. REC INT 11 ID 9	*	638.4	185.1	1.8	*
10. REC INT 11 ID 10	*	569.0	202.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	1.1	0.8	1.7	1.2	2.1	2.6	2.1	1.9	2.0	0.8
10.	*	1.4	1.0	1.4	1.2	2.2	2.3	2.0	2.1	1.6	0.8
20.	*	1.3	1.1	1.1	1.2	2.3	2.1	2.1	2.2	1.7	0.8
30.	*	1.5	1.3	1.3	1.3	2.7	2.3	2.1	2.1	1.7	1.2
40.	*	1.6	1.5	1.3	1.4	2.9	2.5	2.1	1.9	1.2	1.4
50.	*	1.6	1.5	1.2	1.4	3.0	2.4	1.8	1.6	1.0	1.5
60.	*	1.8	1.7	1.6	1.6	3.2	2.2	1.5	1.4	0.8	2.0
70.	*	2.1	2.0	1.9	1.8	3.0	1.7	1.2	0.9	0.4	2.3
80.	*	2.2	2.0	1.9	2.1	2.2	1.1	0.9	0.7	0.3	2.9
90.	*	2.1	2.1	1.9	2.0	1.6	0.7	0.6	0.6	0.2	2.6
100.	*	1.9	2.1	1.6	1.8	1.2	0.4	0.6	0.6	0.2	2.3
110.	*	1.6	1.6	1.4	1.7	1.0	0.7	0.5	0.6	0.4	2.1
120.	*	1.8	2.0	1.4	1.5	1.1	0.6	0.5	0.6	0.5	2.1
130.	*	1.7	1.9	1.3	1.6	0.9	0.5	0.6	0.6	0.4	2.0
140.	*	1.6	1.9	1.6	1.6	0.9	0.9	0.5	0.7	0.7	1.9
150.	*	1.4	1.9	1.7	1.3	0.6	1.0	0.3	0.5	0.9	1.7
160.	*	1.2	1.6	1.9	1.1	0.5	1.2	0.1	0.4	1.2	1.5
170.	*	1.0	1.5	2.4	1.2	0.3	1.4	0.2	0.4	1.3	1.5
180.	*	1.0	1.5	2.2	1.4	0.4	1.4	0.3	0.3	1.3	1.4
190.	*	1.1	1.6	2.4	1.6	0.3	1.3	0.4	0.3	1.2	1.3
200.	*	1.5	1.8	2.4	1.8	0.4	1.2	0.7	0.2	1.1	1.4
210.	*	1.7	1.9	2.3	1.7	0.5	1.1	0.7	0.1	0.9	1.4
220.	*	2.1	1.9	2.5	2.1	0.8	1.3	0.8	0.1	1.0	1.4
230.	*	2.2	1.8	2.7	2.4	1.4	1.8	0.8	0.1	1.0	1.2
240.	*	1.8	1.3	2.7	2.3	2.0	2.4	1.5	0.2	1.1	0.7
250.	*	1.3	0.8	2.5	2.0	2.4	2.9	2.0	0.4	1.3	0.5
260.	*	0.9	0.6	1.9	1.7	2.7	3.2	2.4	0.7	1.7	0.3
270.	*	0.6	0.5	1.7	1.4	2.5	2.9	2.2	1.0	2.0	0.3
280.	*	0.8	0.6	1.6	1.4	2.4	3.0	2.1	1.2	2.1	0.4
290.	*	0.8	0.7	1.6	1.3	2.3	3.1	2.1	1.4	2.2	0.5
300.	*	0.7	0.7	1.7	1.2	2.2	3.0	2.1	1.4	2.4	0.5
310.	*	0.7	0.6	1.6	1.3	2.0	2.8	2.1	1.5	2.4	0.6
320.	*	0.7	0.6	1.8	1.4	1.8	2.8	2.1	1.6	2.5	0.6
330.	*	0.7	0.7	1.8	1.4	1.6	3.0	2.1	1.4	2.6	0.7
340.	*	0.7	0.7	2.0	1.4	1.6	3.1	2.0	1.5	2.6	0.7
350.	*	0.7	0.7	2.0	1.2	1.7	2.7	2.0	1.5	2.2	0.7
360.	*	1.1	0.8	1.7	1.2	2.1	2.6	2.1	1.9	2.0	0.8
MAX	*	2.2	2.1	2.7	2.4	3.2	3.2	2.4	2.2	2.6	2.9
DEGR.	*	80	100	230	230	60	260	260	20	330	80

THE HIGHEST CONCENTRATION OF 3.20 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2012 No-Build

DATE : 1/22/10
TIME : 14:24:26

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 80	REC2 100	REC3 230	REC4 230	REC5 60	REC6 260	REC7 260	REC8 20	REC9 330	REC10 80
1	*	0.2	0.6	0.9	0.5	0.9	1.1	0.4	0.2	0.2	0.6
2	*	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2
3	*	0.0	0.1	0.2	0.1	0.0	0.3	0.2	0.0	0.0	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.2	0.1	0.1	0.3	0.3	0.1	0.2	0.1	0.1	0.1
6	*	0.0	0.1	0.0	0.1	0.1	0.4	0.1	0.2	0.5	0.1
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.1	0.4	0.1	0.1	0.0	0.1	0.1	0.2	0.1
10	*	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.1
11	*	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.1	0.0	0.1	0.1	0.4	0.1	0.2	0.5	0.0
14	*	0.4	0.2	0.1	0.4	0.5	0.1	0.3	0.2	0.1	0.2
15	*	0.9	0.5	0.7	0.7	1.0	0.7	0.9	1.0	0.9	1.0

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'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 11 ID 1'    603    217.4    1.8
'REC INT 11 ID 2'    590.4    213.6    1.8
'REC INT 11 ID 3'    626.3    223.3    1.8
'REC INT 11 ID 4'    645.6    232.9    1.8
'REC INT 11 ID 5'    606.1    199.9    1.8
'REC INT 11 ID 6'    629.6    207.1    1.8
'REC INT 11 ID 7'    656.6    215.8    1.8
'REC INT 11 ID 8'    614.9    177.2    1.8
'REC INT 11 ID 9'    638.4    185.1    1.8
'REC INT 11 ID 10'    569    202.7    1.8
'INT 11: Canal & S.State 2029 Build'   15   1  1  'C'
1
'Approach EB'    'AG'    525.0     169.1    622.2     211.1    3072.    8.189    0.
  16.972
2
'Queue EBL'    'AG'    598.0     211.5    525.0     169.1    0.    3.6574    1
115   66   4   340   44.4925   1593   2   3
2
'Queue EBT3'    'AG'    598.9     208.5    525.0     169.1    0.    3.6574    3
115   66   4   2232   44.4925   4439   2   3
2
'Queue EBR'    'AG'    599.8     202.5    525.0     169.1    0.    3.6574    1
115   4   4   500   44.4925   1900   2   3
1
'Departure EB'    'AG'    622.2     211.1    709.7     253.5    1110.    8.189    0.
   16.972
1
'Approach NB'    'AG'    661.1     116.2    622.2     211.1    1358.    8.189    0.
  13.010
2
'Queue NBT2'    'AG'    611.4     169.6    661.1     116.2    0.    3.3526    2
115   65   4   966   44.4925   2848   2   3
2
'Queue NBR'    'AG'    617.6     272.0    661.1     116.2    0.    3.6574    1
115   4   4   392   44.4925   1900   2   3
1
'Departure NB'    'AG'    622.2     211.1    612.9     283.0    1306.    8.189    0.
   13.010
1
'Approach SB'    'AG'    612.9     283.0    622.2     211.1    1184.    8.189    0.
  13.010
2
'Queue SBL'    'AG'    604.6     293.6    612.9     283.0    0.    3.6574    1
115   111   4   360   44.4925   1900   2   3
2
'Queue SBT2'    'AG'    600.2     290.9    612.9     283.0    0.    3.3526    2
115   57   4   824   44.4925   1580   2   3
1
'Departure SB'    'AG'    622.2     211.1    661.1     116.2    1324.    8.189    0.
   13.010
1
'Exit 7 On-Ramp'    'AG'    622.2     211.1    709.7     253.5    1874.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 Build

DATE : 1/22/10
TIME : 15:50:26

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach EB	*	525.0	169.1	622.2	211.1	*	106.	67.	AG	3072.	8.2	0.0	17.0		
2. Queue EBL	*	598.0	211.5	565.7	192.7	*	37.	240.	AG	68.	100.0	0.0	3.7	0.57	6.2
3. Queue EBT3	*	598.9	208.5	526.7	170.0	*	82.	242.	AG	205.	100.0	0.0	3.7	0.45	13.6
4. Queue EBR	*	599.8	202.5	596.8	201.1	*	3.	246.	AG	4.	100.0	0.0	3.7	0.29	0.6
5. Departure EB	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1110.	8.2	0.0	17.0		
6. Approach NB	*	661.1	116.2	622.2	211.1	*	103.	338.	AG	1358.	8.2	0.0	13.0		
7. Queue NBT2	*	611.4	169.6	647.0	131.3	*	52.	137.	AG	135.	100.0	0.0	3.4	0.44	8.7
8. Queue NBR	*	617.6	272.0	618.3	269.5	*	3.	164.	AG	4.	100.0	0.0	3.7	0.23	0.4
9. Departure NB	*	622.2	211.1	612.9	283.0	*	72.	353.	AG	1306.	8.2	0.0	13.0		
10. Approach SB	*	612.9	283.0	622.2	211.1	*	72.	173.	AG	1184.	8.2	0.0	13.0		
11. Queue SBL	*	604.6	293.6	2488.9	-2112.8	*	3056.	142.	AG	115.	100.0	0.0	3.7	****	509.4
12. Queue SBT2	*	600.2	290.9	633.4	270.2	*	39.	122.	AG	118.	100.0	0.0	3.4	0.58	6.5
13. Departure SB	*	622.2	211.1	661.1	116.2	*	103.	158.	AG	1324.	8.2	0.0	13.0		
14. Exit 7 On-Ramp	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1874.	9.8	0.0	9.1		
15. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 Build

DATE : 1/22/10
TIME : 15:50:26

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	66	4.0	340	1593	44.49	2	3
3. Queue EBT3	*	115	66	4.0	2232	4439	44.49	2	3
4. Queue EBR	*	115	4	4.0	500	1900	44.49	2	3
7. Queue NBT2	*	115	65	4.0	966	2848	44.49	2	3
8. Queue NBR	*	115	4	4.0	392	1900	44.49	2	3
11. Queue SBL	*	115	111	4.0	360	1900	44.49	2	3
12. Queue SBT2	*	115	57	4.0	824	1580	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 11 ID 1	*	603.0	217.4	1.8	*
2. REC INT 11 ID 2	*	590.4	213.6	1.8	*
3. REC INT 11 ID 3	*	626.3	223.3	1.8	*
4. REC INT 11 ID 4	*	645.6	232.9	1.8	*
5. REC INT 11 ID 5	*	606.1	199.9	1.8	*
6. REC INT 11 ID 6	*	629.6	207.1	1.8	*
7. REC INT 11 ID 7	*	656.6	215.8	1.8	*
8. REC INT 11 ID 8	*	614.9	177.2	1.8	*
9. REC INT 11 ID 9	*	638.4	185.1	1.8	*
10. REC INT 11 ID 10	*	569.0	202.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	* 0.8	0.6	1.5	1.0	1.6	2.3	1.7	1.5	1.7	0.6
10.	* 1.0	0.8	1.2	0.9	1.9	2.0	1.8	1.7	1.4	0.6
20.	* 1.2	0.9	1.0	1.0	2.0	1.7	1.9	2.0	1.3	0.6
30.	* 1.2	1.0	1.1	1.0	2.5	2.0	1.8	1.7	1.3	1.0
40.	* 1.3	1.2	1.0	1.0	2.6	2.1	1.6	1.5	1.0	1.1
50.	* 1.3	1.2	1.0	1.1	2.8	2.1	1.5	1.5	0.8	1.3
60.	* 1.6	1.4	1.3	1.3	2.7	1.8	1.3	1.3	0.7	1.7
70.	* 1.9	1.5	1.5	1.6	2.6	1.4	0.9	0.9	0.4	2.1
80.	* 1.9	1.8	1.7	1.8	2.0	1.0	0.8	0.7	0.2	2.2
90.	* 1.8	1.8	1.6	1.7	1.5	0.6	0.5	0.6	0.2	2.4
100.	* 1.7	1.7	1.3	1.5	1.0	0.4	0.4	0.6	0.2	2.0
110.	* 1.4	1.5	1.1	1.4	1.0	0.4	0.4	0.6	0.4	1.8
120.	* 1.6	1.6	1.2	1.4	0.8	0.4	0.5	0.6	0.3	1.9
130.	* 1.4	1.9	1.2	1.5	0.8	0.5	0.5	0.6	0.3	1.7
140.	* 1.5	1.7	1.6	1.3	0.9	0.5	0.4	0.7	0.5	1.5
150.	* 1.3	1.7	1.6	1.2	0.5	0.9	0.2	0.5	0.9	1.3
160.	* 1.1	1.5	1.7	1.1	0.5	1.2	0.1	0.3	1.1	1.3
170.	* 0.8	1.4	2.2	1.2	0.3	1.3	0.2	0.3	1.3	1.2
180.	* 0.9	1.4	2.0	1.2	0.4	1.4	0.3	0.3	1.3	1.2
190.	* 1.0	1.4	2.0	1.5	0.3	1.2	0.3	0.2	1.1	1.2
200.	* 1.3	1.6	2.1	1.5	0.4	1.1	0.5	0.2	0.9	1.3
210.	* 1.6	1.6	2.0	1.4	0.4	1.0	0.5	0.1	0.9	1.3
220.	* 1.9	1.7	2.2	1.8	0.7	1.2	0.4	0.1	0.9	1.2
230.	* 1.9	1.4	2.3	2.1	1.3	1.6	0.7	0.1	1.0	1.0
240.	* 1.6	1.1	2.4	1.9	1.8	2.3	1.4	0.1	1.0	0.7
250.	* 1.2	0.7	2.1	1.6	2.1	2.6	1.8	0.4	1.1	0.4
260.	* 0.8	0.5	1.7	1.4	2.3	2.7	2.1	0.6	1.4	0.3
270.	* 0.5	0.4	1.5	1.1	2.3	2.6	2.0	0.8	1.8	0.2
280.	* 0.6	0.5	1.3	1.1	2.2	2.6	1.9	1.0	2.0	0.3
290.	* 0.6	0.6	1.4	1.0	2.0	2.7	1.8	1.1	2.0	0.4
300.	* 0.6	0.6	1.4	1.0	1.9	2.7	1.7	1.2	2.2	0.4
310.	* 0.5	0.5	1.4	1.0	1.6	2.5	1.6	1.3	2.0	0.5
320.	* 0.5	0.5	1.5	1.1	1.6	2.6	1.7	1.2	2.3	0.5
330.	* 0.5	0.5	1.6	1.2	1.4	2.7	1.9	1.2	2.2	0.5
340.	* 0.6	0.5	1.7	1.1	1.4	2.8	1.7	1.3	2.3	0.6
350.	* 0.6	0.6	1.7	1.0	1.6	2.6	1.6	1.3	1.9	0.6
360.	* 0.8	0.6	1.5	1.0	1.6	2.3	1.7	1.5	1.7	0.6
MAX	* 1.9	1.9	2.4	2.1	2.8	2.8	2.1	2.0	2.3	2.4
DEGR.	* 70	130	240	230	50	340	260	20	320	90

THE HIGHEST CONCENTRATION OF 2.80 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 Build

DATE : 1/22/10
TIME : 15:50:26

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 70	REC2 130	REC3 240	REC4 230	REC5 50	REC6 340	REC7 260	REC8 20	REC9 320	REC10 90
1	*	0.1	0.6	0.8	0.4	0.9	0.0	0.4	0.2	0.3	0.7
2	*	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
3	*	0.0	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.2	0.0	0.1	0.3	0.2	0.3	0.2	0.1	0.0	0.1
6	*	0.0	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.0	0.3	0.1	0.1	0.4	0.1	0.1	0.1	0.0
10	*	0.2	0.0	0.3	0.1	0.1	0.4	0.1	0.1	0.1	0.0
11	*	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1
14	*	0.3	0.0	0.0	0.3	0.4	0.5	0.3	0.2	0.1	0.1
15	*	0.8	0.3	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.6

```
'Stamford Microscale EIE' 60. 321.  0. 0.  10  1.0  0  1
'REC INT 11 ID 1'    603    217.4    1.8
'REC INT 11 ID 2'    590.4    213.6    1.8
'REC INT 11 ID 3'    626.3    223.3    1.8
'REC INT 11 ID 4'    645.6    232.9    1.8
'REC INT 11 ID 5'    606.1    199.9    1.8
'REC INT 11 ID 6'    629.6    207.1    1.8
'REC INT 11 ID 7'    656.6    215.8    1.8
'REC INT 11 ID 8'    614.9    177.2    1.8
'REC INT 11 ID 9'    638.4    185.1    1.8
'REC INT 11 ID 10'    569    202.7    1.8
'INT 11: Canal & S.State 2029 No-Build'   15   1  1  'C'
1
'Approach EB'    'AG'    525.0     169.1    622.2     211.1    3070.    8.189    0.
  16.972
2
'Queue EBL'    'AG'    598.0     211.5    525.0     169.1    0.    3.6574    1
115   66   4   340   44.4925   1593   2   3
2
'Queue EBT3'    'AG'    598.9     208.5    525.0     169.1    0.    3.6574    3
115   66   4   2230   44.4925   4439   2   3
2
'Queue EBR'    'AG'    599.8     202.5    525.0     169.1    0.    3.6574    1
115   4   4   500   44.4925   1900   2   3
1
'Departure EB'    'AG'    622.2     211.1    709.7     253.5    1110.    8.189    0.
   16.972
1
'Approach NB'    'AG'    661.1     116.2    622.2     211.1    1350.    8.189    0.
  13.010
2
'Queue NBT2'    'AG'    611.4     169.6    661.1     116.2    0.    3.3526    2
115   65   4   960   44.4925   2848   2   3
2
'Queue NBR'    'AG'    617.6     272.0    661.1     116.2    0.    3.6574    1
115   4   4   390   44.4925   1900   2   3
1
'Departure NB'    'AG'    622.2     211.1    612.9     283.0    1300.    8.189    0.
   13.010
1
'Approach SB'    'AG'    612.9     283.0    622.2     211.1    1180.    8.189    0.
  13.010
2
'Queue SBL'    'AG'    604.6     293.6    612.9     283.0    0.    3.6574    1
115   111   4   360   44.4925   1900   2   3
2
'Queue SBT2'    'AG'    600.2     290.9    612.9     283.0    0.    3.3526    2
115   57   4   820   44.4925   1580   2   3
1
'Departure SB'    'AG'    622.2     211.1    661.1     116.2    1320.    8.189    0.
   13.010
1
'Exit 7 On-Ramp'    'AG'    622.2     211.1    709.7     253.5    1870.    9.784
0.    9.1496
1
'I-95 Overpass'    'BR'    526.6     207.8    725.4     295.7    10200.    8.738
8.    130
 1.0 00. 4 1000. 0.0 'Y' 10  0 36
```

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:12

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH (G/MI)	EF	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Approach EB	*	525.0	169.1	622.2	211.1	*	106.	67.	AG	3070.	8.2	0.0	17.0		
2. Queue EBL	*	598.0	211.5	565.7	192.7	*	37.	240.	AG	68.	100.0	0.0	3.7	0.57	6.2
3. Queue EBT3	*	598.9	208.5	526.8	170.0	*	82.	242.	AG	205.	100.0	0.0	3.7	0.45	13.6
4. Queue EBR	*	599.8	202.5	596.8	201.1	*	3.	246.	AG	4.	100.0	0.0	3.7	0.29	0.6
5. Departure EB	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1110.	8.2	0.0	17.0		
6. Approach NB	*	661.1	116.2	622.2	211.1	*	103.	338.	AG	1350.	8.2	0.0	13.0		
7. Queue NBT2	*	611.4	169.6	646.8	131.5	*	52.	137.	AG	135.	100.0	0.0	3.4	0.44	8.7
8. Queue NBR	*	617.6	272.0	618.3	269.5	*	3.	164.	AG	4.	100.0	0.0	3.7	0.22	0.4
9. Departure NB	*	622.2	211.1	612.9	283.0	*	72.	353.	AG	1300.	8.2	0.0	13.0		
10. Approach SB	*	612.9	283.0	622.2	211.1	*	72.	173.	AG	1180.	8.2	0.0	13.0		
11. Queue SBL	*	604.6	293.6	2488.9	-2112.8	*	3056.	142.	AG	115.	100.0	0.0	3.7	****	509.4
12. Queue SBT2	*	600.2	290.9	633.3	270.3	*	39.	122.	AG	118.	100.0	0.0	3.4	0.57	6.5
13. Departure SB	*	622.2	211.1	661.1	116.2	*	103.	158.	AG	1320.	8.2	0.0	13.0		
14. Exit 7 On-Ramp	*	622.2	211.1	709.7	253.5	*	97.	64.	AG	1870.	9.8	0.0	9.1		
15. I-95 Overpass	*	526.6	207.8	725.4	295.7	*	217.	66.	BR	10200.	8.7	8.0	****		

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:12

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Queue EBL	*	115	66	4.0	340	1593	44.49	2	3
3. Queue EBT3	*	115	66	4.0	2230	4439	44.49	2	3
4. Queue EBR	*	115	4	4.0	500	1900	44.49	2	3
7. Queue NBT2	*	115	65	4.0	960	2848	44.49	2	3
8. Queue NBR	*	115	4	4.0	390	1900	44.49	2	3
11. Queue SBL	*	115	111	4.0	360	1900	44.49	2	3
12. Queue SBT2	*	115	57	4.0	820	1580	44.49	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. REC INT 11 ID 1	*	603.0	217.4	1.8	*
2. REC INT 11 ID 2	*	590.4	213.6	1.8	*
3. REC INT 11 ID 3	*	626.3	223.3	1.8	*
4. REC INT 11 ID 4	*	645.6	232.9	1.8	*
5. REC INT 11 ID 5	*	606.1	199.9	1.8	*
6. REC INT 11 ID 6	*	629.6	207.1	1.8	*
7. REC INT 11 ID 7	*	656.6	215.8	1.8	*
8. REC INT 11 ID 8	*	614.9	177.2	1.8	*
9. REC INT 11 ID 9	*	638.4	185.1	1.8	*
10. REC INT 11 ID 10	*	569.0	202.7	1.8	*

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 No-Build

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
0.	*	0.8	0.6	1.4	1.0	1.6	2.3	1.7	1.5	1.7	0.6
10.	*	1.0	0.8	1.2	0.9	1.9	2.0	1.8	1.7	1.4	0.6
20.	*	1.2	0.9	1.0	1.0	2.0	1.7	1.9	2.0	1.3	0.6
30.	*	1.2	1.0	1.1	1.0	2.5	2.0	1.8	1.7	1.3	1.0
40.	*	1.3	1.2	1.0	1.0	2.6	2.1	1.6	1.5	1.0	1.1
50.	*	1.3	1.2	1.0	1.1	2.8	2.1	1.5	1.5	0.8	1.3
60.	*	1.6	1.4	1.3	1.3	2.7	1.8	1.3	1.3	0.7	1.7
70.	*	1.9	1.5	1.5	1.6	2.6	1.4	0.9	0.9	0.4	2.1
80.	*	1.9	1.8	1.7	1.8	2.0	1.0	0.8	0.7	0.2	2.2
90.	*	1.8	1.8	1.6	1.7	1.5	0.6	0.5	0.6	0.2	2.4
100.	*	1.7	1.7	1.3	1.5	1.0	0.4	0.4	0.6	0.2	2.0
110.	*	1.4	1.5	1.1	1.4	1.0	0.4	0.4	0.6	0.4	1.8
120.	*	1.6	1.6	1.2	1.4	0.8	0.4	0.5	0.6	0.3	1.9
130.	*	1.4	1.9	1.2	1.5	0.8	0.5	0.5	0.6	0.3	1.7
140.	*	1.5	1.7	1.6	1.3	0.9	0.5	0.4	0.7	0.5	1.5
150.	*	1.3	1.7	1.6	1.2	0.5	0.9	0.2	0.5	0.9	1.3
160.	*	1.1	1.5	1.7	1.1	0.5	1.2	0.1	0.3	1.1	1.3
170.	*	0.8	1.4	2.2	1.2	0.3	1.3	0.2	0.3	1.3	1.2
180.	*	0.9	1.4	2.0	1.2	0.4	1.4	0.3	0.3	1.3	1.2
190.	*	1.0	1.4	2.0	1.5	0.3	1.2	0.3	0.2	1.1	1.2
200.	*	1.3	1.6	2.1	1.5	0.4	1.0	0.5	0.2	0.9	1.3
210.	*	1.6	1.6	2.0	1.4	0.4	1.0	0.5	0.1	0.9	1.3
220.	*	1.9	1.7	2.2	1.8	0.7	1.2	0.4	0.1	0.9	1.2
230.	*	1.9	1.4	2.3	2.1	1.3	1.6	0.7	0.1	1.0	1.0
240.	*	1.6	1.1	2.4	1.9	1.8	2.3	1.4	0.1	1.0	0.7
250.	*	1.2	0.7	2.1	1.6	2.1	2.6	1.8	0.4	1.1	0.4
260.	*	0.8	0.5	1.7	1.4	2.3	2.7	2.1	0.6	1.4	0.3
270.	*	0.5	0.4	1.5	1.1	2.3	2.6	2.0	0.8	1.8	0.2
280.	*	0.6	0.5	1.3	1.1	2.2	2.6	1.9	1.0	2.0	0.3
290.	*	0.6	0.6	1.4	1.0	2.0	2.7	1.8	1.1	2.0	0.4
300.	*	0.6	0.6	1.4	1.0	1.9	2.6	1.7	1.2	2.2	0.4
310.	*	0.5	0.5	1.4	1.0	1.6	2.5	1.6	1.3	2.0	0.5
320.	*	0.5	0.5	1.5	1.1	1.6	2.6	1.7	1.2	2.3	0.5
330.	*	0.5	0.5	1.6	1.2	1.4	2.7	1.9	1.2	2.2	0.5
340.	*	0.6	0.5	1.7	1.1	1.4	2.8	1.7	1.3	2.3	0.6
350.	*	0.6	0.6	1.7	1.0	1.6	2.6	1.6	1.3	1.9	0.6
360.	*	0.8	0.6	1.4	1.0	1.6	2.3	1.7	1.5	1.7	0.6
MAX	*	1.9	1.9	2.4	2.1	2.8	2.8	2.1	2.0	2.3	2.4
DEGR.	*	70	130	240	230	50	340	260	20	320	90

THE HIGHEST CONCENTRATION OF 2.80 PPM OCCURRED AT RECEPTOR REC5 .

JOB: Stamford Microscale EIE RUN: INT 11: Canal & S.State 2029 No-Build

DATE : 1/22/10
TIME : 15:24:12

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK #	*	REC1 70	REC2 130	REC3 240	REC4 230	REC5 50	REC6 340	REC7 260	REC8 20	REC9 320	REC10 90
1	*	0.1	0.6	0.8	0.4	0.9	0.0	0.4	0.2	0.3	0.7
2	*	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
3	*	0.0	0.3	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.4
4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	*	0.2	0.0	0.1	0.3	0.2	0.3	0.2	0.1	0.0	0.1
6	*	0.0	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1
7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	*	0.2	0.0	0.3	0.1	0.1	0.4	0.1	0.1	0.1	0.0
10	*	0.2	0.0	0.3	0.1	0.1	0.4	0.1	0.1	0.1	0.0
11	*	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	*	0.0	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1
14	*	0.3	0.0	0.0	0.3	0.4	0.5	0.3	0.2	0.1	0.1
15	*	0.8	0.3	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.6

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

Information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of transportation alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/ncea/iris/index.html). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model

performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis (FHWA, 2009).

This document has not been thoroughly reviewed. It is being provided for convenience, but is not in any way a substitute for each interested Candidate conducting due diligence.

Appendix D

Hazardous Materials Documentation

FirstSearch Technology Corporation

Environmental FirstSearch™ Report

Target Property: STAMFORD TRANSPORTATION CENTER

43 STATION PL

STAMFORD CT 06902

Job Number: 07-2097.B20

PREPARED FOR:

Fuss And O'Neill

146 Hartford Rd.

Manchester, CT 06040

02-16-10

Tel: (781) 551-0470 *Fax: (781) 551-0471*

Environmental FirstSearch is a registered trademark of FirstSearch Technology Corporation. All rights reserved.

Environmental FirstSearch
Search Summary Report

Target Site: 43 STATION PL
STAMFORD CT 06902

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	11-11-09	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	11-11-09	0.50	0	0	0	0	-	0	0
CERCLIS	Y	01-29-10	0.50	0	0	0	2	-	0	2
NFRAP	Y	01-29-10	0.50	0	0	1	2	-	0	3
RCRA COR ACT	Y	12-11-09	1.00	0	0	0	2	1	0	3
RCRA TSD	Y	12-11-09	0.50	0	0	0	1	-	0	1
RCRA GEN	Y	12-11-09	0.25	0	1	5	-	-	1	7
RCRA NLR	Y	12-11-09	0.25	0	1	8	-	-	1	10
Federal IC / EC	Y	01-19-10	0.50	0	0	2	1	-	0	3
ERNS	Y	02-08-10	0.25	0	10	27	-	-	54	91
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	3	3
State/Tribal Sites	Y	09-11-09	1.00	1	4	5	17	45	3	75
State Spills 90	Y	01-15-10	0.25	0	44	60	-	-	529	633
State/Tribal SWL	Y	12-16-09	0.50	0	0	1	0	-	5	6
State/Tribal LUST	Y	11-04-09	0.50	0	5	12	31	-	32	80
State/Tribal UST/AST	Y	02-03-10	0.25	0	7	12	-	-	7	26
State/Tribal EC	Y	NA	0.50	0	0	0	0	-	0	0
State/Tribal IC	Y	01-01-05	0.25	0	0	1	-	-	0	1
State/Tribal VCP	Y	09-11-09	0.50	1	1	1	6	-	0	9
State/Tribal Brownfields	Y	05-01-08	0.50	0	0	0	0	-	0	0
Receptors	Y	01-01-05	0.50	0	0	0	0	-	0	0
NPDES	Y	08-08-09	0.25	0	0	0	-	-	6	6
Releases	Y	02-08-10	0.25	0	1	7	-	-	42	50
State Permits	Y	12-31-07	0.25	0	0	6	-	-	10	16
State Other	Y	09-11-09	0.25	2	1	1	-	-	2	6
- TOTALS -				4	75	149	62	46	695	1031

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although FirstSearch Technology Corp. uses its best efforts to research the actual location of each site, FirstSearch Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of FirstSearch Technology Corp.'s services proceeding are signifying an understanding of FirstSearch Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	02-16-10	**Search Type:**	COORD
Requestor Name:	Rachel McQuiggan	**Job Number:**	07-2097.B20
Standard:	AAI		

Target Site: 43 STATION PL
STAMFORD CT 06902

Demographics

Sites:	1031	**Non-Geocoded:**	695	**Population:**	NA
Radon:	0 - 6.3 PCI/L				

Site Location

	Degrees (Decimal)	**Degrees (Min/Sec)**		**UTMs**
Longitude:	-73.541024	-73:32:28	**Easting:**	622622.488
Latitude:	41.045696	41:2:45	**Northing:**	4544643.106
Elevation:	30		**Zone:**	18

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
06901	STAMFORD	CT	0.15 NW	Y
06905	STAMFORD	CT	0.92 NW	Y

Services:

	Requested?	Date
Fire Insurance Maps	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
1	*SPILLS*	*200706681/CLOSED*	*STATION PL STAMFORD CT 06902*	*0.01 NE*	*- 0*	*1*
2	*SPILLS*	*200305790/CLOSED*	*STATION PL STAMFORD CT 06902*	*0.03 NE*	*- 2*	*2*
2	*ERNS*	*METRO NORTH COMMUTER RR 558967/RAILROAD*	*N METRO RR STAMFORD RAIL YA STAMFORD CT 06902*	*0.03 NE*	*- 2*	*3*
2	*ERNS*	*METRO NORTH COMMUTER RR 556262/UNKNOWN*	*N METRO RR STAMFORD RAIL YA STAMFORD CT 06902*	*0.03 NE*	*- 2*	*4*
2	*ERNS*	*METRO NORTH RAILROAD 560067/RAILROAD*	*EPA I STAMFORD YARD STAMFORD CT 06902*	*0.03 NE*	*- 2*	*5*
2	*ERNS*	*MILEPOST 34 STAMFORD YARD NRC-621018/RAILROAD*	*STAMFORD CT 06902*	*0.03 NE*	*- 2*	*6*
2	*SPILLS*	*SAME 200104072/CLOSED*	*STAMFORD RR STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*9*
2	*SPILLS*	*SAA 200401136/CLOSED*	*RAILROAD STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*10*
2	*SPILLS*	*SAA 200006518/CLOSED*	*STAMFORD RAILROAD STATION P STAMFORD CT 06902*	*0.03 NE*	*- 2*	*11*
2	*SPILLS*	*9807547/CLOSED*	*RAILROAD STATION WASHINGTON STAMFORD CT 06902*	*0.03 NE*	*- 2*	*12*
2	*SPILLS*	*200003758/CLOSED*	*STAMFORD TRAIN STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*13*
2	*SPILLS*	*200104693/CLOSED*	*SOUTH STAMFORD RAILROAD STA STAMFORD CT 06902*	*0.03 NE*	*- 2*	*14*
2	*ERNS*	*JUST SHORT OF SAMPFORD STATION NRC-612035/RAILROAD NON-RELEASE*	*MILEPOST: CP234 TRACK THREE STAMFORD CT 06902*	*0.03 NE*	*- 2*	*15*
2	*SPILLS*	*200300283/CLOSED*	*NORTH RAIL STATION, STATE A STAMFORD CT 06902*	*0.03 NE*	*- 2*	*18*
2	*SPILLS*	*200300689/CLOSED*	*SOUTH STATE RAILROAD STATIO STAMFORD CT 06902*	*0.03 NE*	*- 2*	*19*
2	*ERNS*	*STANFORD RAILROAD STATION NRC-714298/MOBILE*	*STATE ST STAMFORD CT 06902*	*0.03 NE*	*- 2*	*20*
2	*SPILLS*	*9706164/CLOSED*	*N METRO STAMFORD RAIL YARD STAMFORD CT 06902*	*0.03 NE*	*- 2*	*23*
2	*SPILLS*	*CT TRANSIT 200508624/CLOSED*	*STATE ST STAMFORD CT 06902*	*0.03 NE*	*- 2*	*24*
2	*SPILLS*	*CT TRANSIT 200400845/CLOSED*	*STATE ST STAMFORD CT 06902*	*0.03 NE*	*- 2*	*25*
2	*SPILLS*	*200602625/CLOSED*	*N STATE ST and RAILROAD STA STAMFORD CT 06902*	*0.03 NE*	*- 2*	*26*
2	*SPILLS*	*200403664/CLOSED*	*STAMFORD RAILROAD STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*27*

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
2	*SPILLS*	*200402163/CLOSED*	*STAMFORD RAILD STATION LOT STAMFORD CT 06902*	*0.03 NE*	*- 2*	*28*
2	*SPILLS*	*METRO NORTH RAILROAD 911225/CLOSED*	*STAMFORD RR STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*29*
2	*SPILLS*	*200000708/CLOSED*	*RAILROAD STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*31*
2	*SPILLS*	*200607389/CLOSED*	*STAMFORD RAILROAD STATION STAMFORD CT 06902*	*0.03 NE*	*- 2*	*32*
2	*SPILLS*	*200103282/CLOSED*	*NORTH STATE ST/ RAILROAD ST STAMFORD CT 06902*	*0.03 NE*	*- 2*	*33*
2	*ERNS*	*103 ENGINE NRC-632843/RAILROAD NON-RELEASE*	*STANFORD YARD STAMFORD CT 06902*	*0.03 NE*	*- 2*	*35*
2	*ERNS*	*STAMFORD YARD NRC-597204/RAILROAD NON-RELEASE*	*STAMFORD CT 06902*	*0.03 NE*	*- 2*	*38*
3	*VCP*	*FORMER DOT COMMUTER LOT 5524/VRP-133XSITES*	*43 STATION PL STAMFORD CT 06902*	*0.03 NE*	*- 0*	*41*
3	*OTHER*	*FORMER DOT COMMUTER LOT 5524/PTP*	*43 STATION PL STAMFORD CT 06902*	*0.03 NE*	*- 0*	*43*
3	*STATE*	*FORMER DOT COMMUTER LOT 5524/SUSPECTED*	*43 STATION PL STAMFORD CT 06902*	*0.03 NE*	*- 0*	*45*
3	*OTHER*	*DOT COMMUTER LOT-STATION PLACE PRO CTOT-1004-36*	*43 STATION PL STAMFORD CT 06902*	*0.03 NE*	*- 0*	*46*
4	*SPILLS*	*UNKNOWN POLLUTER 200002514/CLOSED*	*ROCKLAND PL STAMFORD CT 06902*	*0.06 SE*	*- 3*	*47*
5	*SPILLS*	*200607993/CLOSED*	*N STATE ST STAMFORD CT 06902*	*0.07 NW*	*- 2*	*48*
5	*SPILLS*	*SAA 200203429/CLOSED*	*STATE AT THE RR STATION ST STAMFORD CT 06902*	*0.07 NW*	*- 2*	*49*
6	SPILLS	9702541/CLOSED	SOUTH STATE AND WASHINGTON STAMFORD CT 06902	0.08 NW	- 4	N/A
7	SPILLS	INFANTIS SERVICE 94953/CLOSED	613 ATLANTIC ST STAMFORD CT 06902	0.09 NE	- 7	N/A
7	*STATE*	*INFANTI SERVICE CENTER 2906/SUSPECTED*	*613 ATLANTIC ST STAMFORD CT 06902*	*0.09 NE*	*- 7*	*50*
7	*UST*	*INFANTI PROPERTY 08768/PERMANENTLY CLOSED*	*613 ATLANTIC ST STAMFORD CT 06902*	*0.09 NE*	*- 7*	*52*
8	*UST*	*HERTZ CAR WASH FACILITY 11446/PERMANENTLY CLOSED*	*641 ATLANTIC ST STAMFORD CT 06902*	*0.09 SE*	*- 7*	*54*
9	*UST*	*AVIS RENT A CAR SYSTEM INC. 11940/CURRENTLY IN USE*	*72 HENRY ST STAMFORD CT 06902*	*0.09 SE*	*- 3*	*54*

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
9	SPILLS	200800020/CLOSED	72 HENRY ST STAMFORD CT 06902	0.09 SE	- 3	N/A
10	***RCRANLR***	***ROYAL METALS CORP CTD093616894/NLR***	***669 ATLANTIC ST STAMFORD CT 06902***	***0.09 SE***	***- 7***	***55***
10	***UST***	***669 ATLANTIC STREET ASSC. 04248/CURRENTLY IN USE***	***669 ATLANTIC ST STAMFORD CT 06902***	***0.09 SE***	***- 7***	***57***
11	***RCRAGN***	***RAPHAELS FURNITURE RESTORATION CTD981890585/VGN***	***655 ATLANTIC ST STAMFORD CT 06902***	***0.09 SE***	***- 6***	***58***
12	SPILLS	CLEAN HARBORS 200306636/CLOSED	S STATE ST NEAR WASHINGTON STAMFORD CT 06902	0.09 NW	- 8	N/A
13	SPILLS	LOUREIRO ENGINERING 200805955/CLOSED	424 WASHINGTON BLVD STAMFORD CT 06902	0.09 SW	- 3	N/A
13	***LUST***	***LOUREIRO ENGINERING 200805955/CLOSED***	***424 WASHINGTON BLVD STAMFORD CT 06902***	***0.09 SW***	***- 3***	***59***
14	SPILLS	PITNEY BOWES 200503960/CLOSED	650 ATLANTIC ST STAMFORD CT 06902	0.10 SE	- 9	N/A
14	OTHER	PITNEY BOWES, INC. 5065/TRANSFER ACT	664 , 650, AND 710 ATLANTIC STAMFORD CT 06902	0.10 SE	- 9	N/A
14	***LUST***	***PITNEY BOWES 200503960/CLOSED***	***650 ATLANTIC ST STAMFORD CT 06902***	***0.10 SE***	***- 9***	***60***
14	***STATE***	***PITNEY BOWES, INC. 5065/SUSPECTED***	***664 , 650, AND 710 ATLANTIC STAMFORD CT 06902***	***0.10 SE***	***- 9***	***61***
14	***UST***	***PITNEY BOWES 12090/PERMANENTLY CLOSED***	***650 ATLANTIC ST STAMFORD CT 06902***	***0.10 SE***	***- 9***	***62***
15	***STATE***	***ATLANTIC STREET SITE 1841/SUSPECTED***	***599 ATLANTIC ST STAMFORD CT 06902***	***0.10 NE***	***- 10***	***63***
16	SPILLS	CITY OF STAMFORD 911158/CLOSED	I-95 and EX 7 BLVD STAMFORD CT 06902	0.10 NW	- 8	N/A
16	SPILLS	UNKNOWN AT THIS TIME 9902909/CLOSED	I-95 SOUTHBOUND BY EXIT 7 O STAMFORD CT 06902	0.10 NW	- 8	N/A
16	SPILLS	956474/CLOSED	I-95 S EXIT STAMFORD CT 06902	0.10 NW	- 8	N/A
16	ERNS	I-95 SB SOUTH OF EXIT 7 NRC-656428/MOBILE	UNKNOWN STAMFORD CT 06902	0.10 NW	- 8	N/A
17	SPILLS	9803533/CLOSED	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A
17	VCP	PITNEY BOWES 5476/VRP- 133YSITES	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A
17	LUST	PITNEY BOWES, DAVID PATTEE 200002744/CLOSED	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
17	STATE	PITNEY BOWES 5476/SUSPECTED	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A
17	SPILLS	PITNEY BOWES, DAVID PATTEE 200002744/CLOSED	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A
17	UST	PITNEY BOWES INC. 09246/CURRENTLY IN USE	624 ATLANTIC ST STAMFORD CT 06902	0.10 NE	- 15	N/A
18	SPILLS	U E S TRANSPORTATION 96394/CLOSED	I-95 N EXIT 8 and EXIT 7 STAMFORD CT 06902	0.10 NW	- 4	N/A
18	SPILLS	200102935/CLOSED	NORTH I95 BOUND EXIT 7-8 STAMFORD CT 06902	0.10 NW	- 4	N/A
18	SPILLS	961516/CLOSED	I-95 S EXIT 7 and EXIT 8 STAMFORD CT 06902	0.10 NW	- 4	N/A
18	ERNS	PAMS TRUCKING 485297/HIGHWAY RELATED	I-95 EX 7,8 STAMFORD CT 06902	0.10 NW	- 4	N/A
19	RELEASES	NRC-621867/MOBILE	NORTH INTERSTATE 95 EXIT STAMFORD CT 06902	0.10 NW	- 8	N/A
20	SPILLS	UNK 200803739/CLOSED	660 ATLANTIC ST STAMFORD CT 06902	0.10 SE	- 8	N/A
21	UST	HERTZ RENT A CAR 10257/PERMANENTLY CLOSED	74 N STATE ST STAMFORD CT 06902	0.12 NW	- 10	N/A
21	LUST	HERTZ RENT-A-CAR 28842/CLEANUP INITIATED	74 N STATE ST STAMFORD CT 06902	0.12 NW	- 10	N/A
21	LUST	HERTZ RENT-A-CAR 2576/NO	74 N STATE ST STAMFORD CT 06902	0.12 NW	- 10	N/A
22	SPILLS	200109973/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
22	SPILLS	200602020/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
22	SPILLS	CT TRANSIT 200201174/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
22	SPILLS	200701789/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
22	SPILLS	200606606/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
22	SPILLS	9706305/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT 06902	0.12 NW	- 8	N/A
23	RCRANLR	MOBIL OIL CORP SERV STA EH7 CTD983877853/NLR	600 WASHINGTON BLVD STAMFORD CT 06902	0.14 NW	- 10	N/A
23	RCRAGN	MOBIL OIL CORP SERV STA EH7 CTD983877853/SGN	600 WASHINGTON BLVD STAMFORD CT 06902	0.14 NW	- 10	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
23	UST	MOBIL OIL SERVICE STATION 06-EH7 08819/PERMANENTLY CLOSED	600 WASHINGTON BLVD STAMFORD CT 06902	0.14 NW	- 10	N/A
24	UST	AVIS RENT-A-CAR 08814/PERMANENTLY CLOSED	10 GUERNSEY ST STAMFORD CT 06902	0.14 NE	- 13	N/A
24	INSTCONTROL	SWISS BANK IC-1728/ELUR	10 GUERNSEY ST STAMFORD CT 06902	0.14 NE	- 13	N/A
24	STATE	SWISS BANK CORP. 1728/SUSPECTED	10 GUERNSEY ST STAMFORD CT 06902	0.14 NE	- 13	N/A
25	UST	RICE SCHOOL 04208/PERMANENTLY CLOSED	584 WASHINGTON BLVD STAMFORD CT 06902	0.14 NW	- 11	N/A
26	PERMITS	BUDGET RENT A CAR GVS000623/MINOR	197 N STATE ST STAMFORD CT 06902	0.14 NE	- 16	N/A
27	SPILLS	FENTON HUBERT 200404933/CLOSED	120 HENRY ST STAMFORD CT 06902	0.15 SE	- 3	N/A
27	SPILLS	200606561/CLOSED	120 HENRY ST STAMFORD CT 06902	0.15 SE	- 3	N/A
27	LUST	FENTON HUBERT 200404933/CLOSED	120 HENRY ST STAMFORD CT 06902	0.15 SE	- 3	N/A
28	SPILLS	200201145/CLOSED	MANNHATAN AND ATLANTIC ST STAMFORD CT 06902	0.15 NE	- 16	N/A
29	SPILLS	96250/CLOSED	568 ATLANTIC ST STAMFORD CT 06902	0.15 NE	- 16	N/A
30	SPILLS	UNKNOWN 9804890/CLOSED	WASHINGTON BLVD STAMFORD CT 06902	0.15 SW	- 2	N/A
31	SPILLS	PETRO 9906848/CLOSED	15 LIPTON PL STAMFORD CT 06902	0.15 SE	- 14	N/A
32	SPILLS	CT TRANSIT 200504292/CLOSED	RICHMOND HILL AVE and WASHI STAMFORD CT 06901	0.15 NW	- 10	N/A
33	SPILLS	EXXON 956336/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	SPILLS	200405833/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	SPILLS	935109/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	SPILLS	ALLIANCE ENERGY 200001412/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	SPILLS	ALLIANCE ENERGY 200305770/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	UST	RICHMOND HILL EXXON 7052 08658/PERMANENTLY CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
33	RCRANLR	EXXON CO USA 37052 CTD983876988/NLR	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	LUST	GAS STATION 37052 45691/CLEANUP INITIATED	STAMFORD CT 06901	0.16 NW	- 10	N/A
33	LUST	ALLIANCE ENERGY 200001412/CLOSED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	RCRAGN	RICHMOND HILL EXXON CTD983876988/VGN	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
33	STATE	EXXON 3-7052 2181/SUSPECTED	636 WASHINGTON BLVD STAMFORD CT 06901	0.16 NW	- 10	N/A
34	UST	CITY OF STAMFORD 12790/PERMANENTLY CLOSED	13 MANHATTAN ST STAMFORD CT 06902	0.16 NE	- 16	N/A
35	RCRAGN	PITNEY BOWES INC CTD991288671/LGN	55 GARDEN ST STAMFORD CT 06902	0.16 SE	- 5	N/A
35	RCRANLR	(FORMER) PITNEY BOWES INC. (ATLANT CTD991288671/NLR	55 GARDEN ST STAMFORD CT 06902	0.16 SE	- 5	N/A
36	SPILLS	NORTHEAST UTILITIES 96979/CLOSED	ATLANTIC ST STAMFORD CT 06902	0.17 SE	- 20	N/A
36	SPILLS	NORTHEAST UTILITIES 947189/CLOSED	ATLANTIC ST STAMFORD CT 06902	0.17 SE	- 20	N/A
37	SPILLS	JERRY WALDEN 200704889/CLOSED	775 ATLANTIC ST STAMFORD CT 06902	0.17 SE	- 19	N/A
37	LUST	JERRY WALDEN 200704889/CLOSED	775 ATLANTIC ST STAMFORD CT 06902	0.17 SE	- 19	N/A
38	RCRANLR	MANGER ELECTRIC CO INC THE CTD001184381/NLR	WEST HENRY ST STAMFORD CT 06902	0.17 SW	+ 1	N/A
38	RCRAGN	MANGER ELECTRIC CO INC THE CTD001184381/VGN	WEST HENRY ST STAMFORD CT 06902	0.17 SW	+ 1	N/A
39	SPILLS	RELIABLE OIL 200408651/CLOSED	18 GARDEN ST STAMFORD CT 06902	0.17 NE	- 11	N/A
40	SPILLS	CLEAN VENTURES 912720/CLOSED	STAMFORD CT 06901	0.18 NW	- 10	N/A
41	PERMITS	STATION PLAZA SP0000585/MINOR	655 WASHINGTON BLVD STAMFORD CT 06901	0.18 NW	- 10	N/A
41	PERMITS	SWISS BANK CORP GDS000095/MINOR	655 WASHINGTON BLVD STAMFORD CT 06901	0.18 NW	- 10	N/A
41	SPILLS	CLEAN VENTURES 91459/CLOSED	655 WASHINGTON BLVD STAMFORD CT 06901	0.18 NW	- 10	N/A
41	UST	SWISS BANK 10485/PERMANENTLY CLOSED	655 WASHINGTON BLVD STAMFORD CT 06901	0.18 NW	- 10	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
42	UST	BUDGET RENT A CAR OF WESTCHESTER, 09853/PERMANENTLY CLOSED	33 GUERNSEY ST STAMFORD CT 06901	0.18 NE	- 3	N/A
43	SPILLS	200005695/CLOSED	24 RICHMOND HILL RD STAMFORD CT 06902	0.18 NW	- 15	N/A
43	SPILLS	R.B.S GREENWICH CAPITOL 200605277/CLOSED	24 RICHMOND HILL AVE STAMFORD CT 06902	0.18 NW	- 15	N/A
43	LUST	R.B.S GREENWICH CAPITOL 200605277/CLOSED	24 RICHMOND HILL AVE STAMFORD CT 06902	0.18 NW	- 15	N/A
43	LUST	LOUIS DREYFUS CO./FRANK GAYZUR 9606372/CLOSED	24 RICHMOND HILL AVE STAMFORD CT 06902	0.18 NW	- 15	N/A
43	SPILLS	LOUIS DREYFUS CO./FRANK GAYZUR 9606372/CLOSED	24 RICHMOND HILL AVE STAMFORD CT 06902	0.18 NW	- 15	N/A
44	SPILLS	200305789/CLOSED	N STATE ST and ATLANTIC AVE STAMFORD CT 06902	0.18 NE	- 12	N/A
44	SPILLS	SAA 200503912/CLOSED	ATLANTIC ST and N STATE ST STAMFORD CT 06902	0.18 NE	- 12	N/A
45	SPILLS	STATELINE TIRES 911532/CLOSED	21 RICHMOND HILL AVE STAMFORD CT 06901	0.19 NW	- 13	N/A
45	SPILLS	STATE LINE TIRES 911549/CLOSED	21 RICHMOND HILL AVE STAMFORD CT 06901	0.19 NW	- 13	N/A
46	SPILLS	953417/OPEN	6 LIPTON PL STAMFORD CT 06902	0.19 SW	- 27	N/A
47	SPILLS	AMERICAN ENVIRONMENTAL SEVRICES 200001161/CLOSED	1 LIPTON PL STAMFORD CT 06902	0.20 SE	- 27	N/A
47	SPILLS	MRS. ZAREMSKI-AMERICAN SANITARY EN 9806720/CLOSED	1 LIPTON PL STAMFORD CT 06902	0.20 SE	- 27	N/A
48	SPILLS	ALLEGED - JOE RUDDY AES 200000944/CLOSED	2 LIPTON PL STAMFORD CT 06902	0.20 SE	- 28	N/A
48	SPILLS	UNKNOWN 9802873/CLOSED	2 LIPTON STAMFORD CT 06902	0.20 SE	- 28	N/A
48	SPILLS	JOE RUDDY 9806887/CLOSED	2 LIPTON PL STAMFORD CT 06902	0.20 SE	- 28	N/A
48	RCRAGN	AMERICAN ENVIRONMENTAL SERVICES CTR000005066/TRANSPORTER	2 LIPTON PL STAMFORD CT 06902	0.20 SE	- 28	N/A
49	SPILLS	STAMFORD HEALTH CENTER 200000404/CLOSED	137 HENRY ST STAMFORD CT 06902	0.20 SE	- 20	N/A
50	SPILLS	SAME OIL 200206343/CLOSED	24 PULASKI ST STAMFORD CT 06902	0.20 SW	- 12	N/A
51	SPILLS	HOFFMAN FUEL 9901895/CLOSED	680 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 8	N/A

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51	SPILLS	THE CARE OF TREES 200502909/CLOSED	680 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 8	N/A
52	UST	UBS 11643/CURRENTLY IN USE	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
52	SPILLS	SAME 200102960/CLOSED	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
52	LUST	USB 200705920/CLOSED	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
52	SPILLS	SHRED-IT 200203189/CLOSED	677 WASHINGTON BLVD UBS SWI STAMFORD CT 06901	0.21 NW	- 7	N/A
52	ERNS	 NRC-848638/STORAGE TANK	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
52	LUST	SWISS BANK CORP. 32198/PENDING	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
52	SPILLS	USB 200705920/CLOSED	677 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
53	SPILLS	 200503454/CLOSED	575 PACIFIC ST STAMFORD CT 06902	0.21 SE	- 10	N/A
54	RCRANLR	SUNOCO SERVICE STA EASTMAN MOTORS CTD018817064/NLR	683 WASHINGTON BLVD STAMFORD CT 06901	0.21 NW	- 7	N/A
55	FED IC / EC	HARLEY DAVIDSON 36583044-1/EPA BROWNFIELD	 STAMFORD CT 06902	0.21 SE	- 10	N/A
56	OTHER	NATIONAL CAR RENTAL 5062/TRANSFER ACT	26 FEDERAL ST STAMFORD CT 06901	0.21 NE	+ 5	N/A
56	UST	NATIONAL CAR RENTAL 08712/PERMANENTLY CLOSED	26 FEDERAL ST STAMFORD CT 06901	0.21 NE	+ 5	N/A
56	UST	NATIONAL CAR RENTAL SYSTEM, INC 04240	26 FEDERAL ST STAMFORD CT 06901	0.21 NE	+ 5	N/A
56	LUST	NATIONAL CAR RENTAL 32218/CLEANUP INITIATED	26 FEDERAL ST STAMFORD CT 06901	0.21 NE	+ 5	N/A
56	STATE	NATIONAL CAR RENTAL 5062/SUSPECTED	26 FEDERAL ST STAMFORD CT 06901	0.21 NE	+ 5	N/A
57	LUST	DICK PALMER 9902633/CLOSED	531 PACIFIC ST STAMFORD CT 06902	0.22 NE	- 11	N/A
57	SPILLS	DICK PALMER 9902633/CLOSED	531 PACIFIC ST STAMFORD CT 06902	0.22 NE	- 11	N/A
58	SPILLS	 9801388/CLOSED	484 PACIFIC ST STAMFORD CT 06902	0.22 NE	- 12	N/A
59	ERNS	SPRAGUE ENERGY D51304/FIX FAC	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A

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59	SPILLS	962254/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	SPRAGUE ENERGY 450584/FIXED FACILITY	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	933945/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	SPRAGUE ENERGY 457709/PIPELINE RELATED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	961937/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	SAA 200901191/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	SPRAGUE ENERGY 505821/FIXED FACILITY	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	10 WATER ST NRC-900962/STORAGE TANK	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	200506915/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	10 WATER STREET NRC-899752/MOBILE	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	SPRAGUE ENERGY 955617/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	OPA DRILL FOR SPRAGUE ENERGY 601183/UNKNOWN (NRC)	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	SPRAGUE ENERGY X50816/FIX FAC	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	ERNS	SPRAGUE ENERGY D60050/PIPELINE	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	RELEASES	10 WATER ST. NRC-782199/VESSEL	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	RELEASES	490593/UNKNOWN (NRC)	WEST BRANCH OF STANFORD HB STAMFORD CT 06902	0.23 SW	- 18	N/A
59	SPILLS	POLING AND CUTLER 200508385/CLOSED	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	RELEASES	SPRAGUE ENERGY 584976/UNKNOWN (NRC)	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	RELEASES	NRC-857016/VESSEL	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A
59	RELEASES	SPRAGUE ENERGY 486037/MARINE- RELEASED FRO	10 WATER ST STAMFORD CT 06902	0.23 SW	- 18	N/A

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59	RELEASES	SPRAGUE DOCK WEST BRANCH STAMFORD	10 WATER ST	0.23 SW	- 18	N/A
		NRC-562344/VESSEL	STAMFORD CT 06902			
59	ERNS		WEST BRANCH OF STANFORD HB	0.23 SW	- 18	N/A
		490593/UNKNOWN	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-776012/MOBILE	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-830836/MOBILE	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-819453/STORAGE TANK	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		584976/UNKNOWN	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-811084/STORAGE TANK	STAMFORD CT 06902			
59	RELEASES		10 WATER ST	0.23 SW	- 18	N/A
		382135/UNKNOWN (NRC)	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-557898/PIPELINE	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		X60233/FIX FAC	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		450230/FIXED FACILITY	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		435788/FIXED FACILITY	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		488898/FIXED FACILITY	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		629679/UNKNOWN (NRC)	STAMFORD CT 06902			
59	PERMITS	HERBERT FUEL CORPORATION	10 WATER ST	0.23 SW	- 18	N/A
		GHT010001/MINOR	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		404654/FIXED FACILITY	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		488916/FIXED FACILITY	STAMFORD CT 06902			
59	ERNS	SPRAGUE ENERGY	10 WATER ST	0.23 SW	- 18	N/A
		486037/UNKNOWN	STAMFORD CT 06902			
59	ERNS		10 WATER ST	0.23 SW	- 18	N/A
		NRC-632722/FIXED	STAMFORD CT 06902			
60	SPILLS		60 GUERNSEY ST	0.23 NE	+ 5	N/A
		96341/OPEN	STAMFORD CT 06901			

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61	SWL	SOUTHERN CONNECTICUT RECYCLING INC CTSW-PE-01-141/PERMIT	39 WOODLAND AVE STAMFORD CT 06902	0.23 SE	N/A	N/A
62	SPILLS	SPRAGUE ENERGY 954634/CLOSED	10 WARNER ST STAMFORD CT 06902	0.23 SW	- 22	N/A
63	SPILLS	UNKNOWN MOTORIST 200303415/CLOSED	PACIFIC AT HENRY ST STAMFORD CT 06902	0.23 SE	- 16	N/A
64	SPILLS	CITGO 941091/CLOSED	PULASKI ST STAMFORD CT 06902	0.23 SW	- 12	N/A
65	PERMITS	EXCELSIOR HARDWARE INC. GSW000802/MINOR	39 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
65	NFRAP	EXCELSIOR HARDWARE COMPANY CTD001161595/NFRAP-N	39 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
65	SPILLS	SAA 9703249/CLOSED	39 WOODLAND ST STAMFORD CT 06902	0.24 SE	- 26	N/A
65	LUST	EXCELSIOR 2527/NO	39 WOODLAND ST STAMFORD CT 06902	0.24 SE	- 26	N/A
65	LUST	EXCELSIOR 28830/INVESTIGATION	ATLANTIC ST STAMFORD CT 06902	0.24 SE	- 26	N/A
65	UST	EXCELSIOR HARDWARE COMPANY 08645/CURRENTLY IN USE	39 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
65	RCRANLR	EXCELSIOR ENTERPRISE CTD001161595/NLR	39 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
65	STATE	EXCELSIOR HARDWARE 417/INVENTORY	39 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
66	SPILLS	ROYAL BANK OF SCOTLAND 200901338/CLOSED	101 CLINTON AVE STAMFORD CT 06901	0.24 NW	- 10	N/A
67	SPILLS	9903546/CLOSED	42 WOODLAND AVE STAMFORD CT 06902	0.24 SE	- 26	N/A
68	RCRANLR	STAMFORD WALL PAPER CO INC CTD001161629/NLR	153 GREENWICH AVE STAMFORD CT 06902	0.24 SW	- 30	N/A
69	SPILLS	UNKNOWN 9604743/CLOSED	PULASKI ST STAMFORD CT 06902	0.24 SW	- 18	N/A
70	SPILLS	200108497/CLOSED	151 GREENWICH AVE STAMFORD CT 06902	0.24 SW	- 30	N/A
71	SPILLS	200204746/CLOSED	1 WATER ST STAMFORD CT 06902	0.24 SW	- 13	N/A
72	ERNS	CORNER OF PACIFIC ST AND HENRY ST NRC-644238/MOBILE	UNKNOWN STAMFORD CT 06902	0.24 SE	- 21	N/A
73	VCP	CITY OF STAMFORD CTBF-0506-14/VRP-133XSITES	114 MANHATTAN ST STAMFORD CT 06902	0.25 NE	- 10	N/A

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73	FED IC / EC	TRI CHEM 69598384-75042/EPA BROWNFIELD	114 MANHATTAN ST STAMFORD CT 06902	0.25 NE	- 10	N/A
73	STATE	TRI-CHEM 423/INVENTORY	114 MANHATTAN ST STAMFORD CT 06902	0.25 NE	- 10	N/A
74	UST	STAMFORD INDUSTRIAL PARK 08749/PERMANENTLY CLOSED	13 MARKET ST STAMFORD CT 06902	0.25 SE	- 9	N/A
75	SPILLS	SATURN OF STAMFORD 943016/CLOSED	747 WASHINGTON BLVD STAMFORD CT 06901	0.25 NW	- 6	N/A
75	RCRANLR	DELIA EASTMAN MOTOR CAR CO INC DBA CTD982547093/NLR	747 WASHINGTON BLVD STAMFORD CT 06901	0.25 NW	- 6	N/A
75	PERMITS	SATURN OF STAMFORD GVS000213/MINOR	747 WASHINGTON BLVD STAMFORD CT 06901	0.25 NW	- 6	N/A
76	SPILLS	CLandP 200804503/CLOSED	391 PACIFIC ST STAMFORD CT 06902	0.25 NE	- 28	N/A
77	STATE	LEAHY BUSINESS ARCHIVES, INC. 5055/SUSPECTED	127 MANHATTAN AVE STAMFORD CT 06902	0.26 NE	+ 2	N/A
78	LUST	CITY OF STAMFORD 200601922/CLOSED	670 PACIFIC ST STAMFORD CT 06902	0.26 SE	- 28	N/A
79	LUST	OSCAR PRESSLER 9702794/CLOSED	72 PULASKI ST STAMFORD CT 06902	0.27 SW	- 30	N/A
80	STATE	MIRCRON COATINGS, INC. 5058/SUSPECTED	74 PULASKI ST STAMFORD CT 06902	0.28 SW	- 30	N/A
80	VCP	MIRCRON COATINGS, INC. 5058/VRP-133XSITES	74 PULASKI ST STAMFORD CT 06902	0.28 SW	- 30	N/A
81	RCRACOR	PITNEY BOWES INC CTD001161793/NLR	69 WALTER WHEELER DR STAMFORD CT 06902	0.29 SE	- 11	N/A
81	RCRA	PITNEY BOWES INC CTD001161793/TSD	69 WALTER WHEELER DR STAMFORD CT 06902	0.29 SE	- 11	N/A
81	STATE	PITNEY BOWES, INC. 1234/SUSPECTED	69 WALTER WHEELER DR STAMFORD CT 06902	0.29 SE	- 11	N/A
81	NFRAP	PITNEY BOWES, INC. CTD001161793/NFRAP-N	69 WALTER WHEELER DR STAMFORD CT 06902	0.29 SE	- 11	N/A
82	LUST	WBH AQUISTION 1LLC 200003376/CLOSED	61 RICHMOND HILL AVE STAMFORD CT 06902	0.29 NW	- 27	N/A
82	STATE	BECKLEY CLEANERS 3205/SUSPECTED	61 RICHMOND HILL AVE STAMFORD CT 06902	0.29 NW	- 27	N/A
82	VCP	BECKLEY CLEANERS 3205/VRP-133XSITES	61 RICHMOND HILL AVE STAMFORD CT 06902	0.29 NW	- 27	N/A
83	STATE	CLandP 5037/SUSPECTED	WASHINGTON AND ATLANTIC ST STAMFORD CT 06902	0.29 SW	- 16	N/A

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84	STATE	MARSHALLS EXPRESS 1843/SUSPECTED	177 GREENWICH AVE STAMFORD CT 06902	0.29 SW	- 26	N/A
85	LUST	 200406755/CLOSED	207 GREENWICH AVE STAMFORD CT 06902	0.32 SW	- 26	N/A
86	LUST	STAMFORD ADVOCATE 30477/LUST COMPLETED (PROG	TRESSOR BLVD STAMFORD CT 06901	0.32 NW	- 9	N/A
87	LUST	STAMFORD ADVOCATE 2540/YES	75 TRESSOR BLVD STAMFORD CT 06901	0.33 NW	- 11	N/A
87	LUST	TRIBUNE CO. MARK ANDERSON 200804404/CLOSED	75 TRESSER BLVD STAMFORD CT 06901	0.33 NW	- 11	N/A
88	LUST	WBH ACQUISTION 1 LLC 200003374/CLOSED	32 GREENWICH AVE STAMFORD CT 06901	0.33 NW	- 3	N/A
89	LUST	RAYCLIFF ASSOCIATES 2641-2643/YES	50 JOHN ST STAMFORD CT 06902	0.34 NE	- 24	N/A
89	LUST	RAYCLIFF ASSOCIATES 30277/LUST COMPLETED (PROG	50 JOHN ST STAMFORD CT 06902	0.34 NE	- 24	N/A
90	LUST	ULYSSES ACURA 200505383/CLOSED	130 STAMFORD PL STAMFORD CT 06902	0.34 SW	+ 3	N/A
91	LUST	ARNONE/TUCCI 200406096/CLOSED	734 PACIFIC ST STAMFORD CT 06902	0.34 SE	- 30	N/A
92	VCP	CLEARWATER PLAZA CTBF-0604-245/VRP-133XSITES	2187 ATLANTIC ST STAMFORD CT 06902	0.35 SW	- 6	N/A
93	FED IC / EC	SEABOARD EQUITIES 69598385-75161/EPA BROWNFIELD	1 DOCK ST STAMFORD CT 06902	0.36 NE	- 29	N/A
93	VCP	CITY OF STAMFORD CTBF-0506-13/VRP-133XSITES	1 DOCK ST STAMFORD CT 06902	0.36 NE	- 29	N/A
93	STATE	SEABOARD PROPERTIES 2037/SUSPECTED	1 DOCK ST STAMFORD CT 06902	0.36 NE	- 29	N/A
94	STATE	HIGHTEMP RESINS INC. 5051/SUSPECTED	225 GREENWICH AVE STAMFORD CT 06902	0.36 SW	- 29	N/A
95	VCP	NEW ENGLAND LAMINATES COMPANY, INC 3019/VRP-133XSITES	481 CANAL ST STAMFORD CT 06902	0.37 NE	- 24	N/A
95	STATE	NEW ENGLAND LAMINATES COMPANY, INC 3019/SUSPECTED	481 CANAL ST STAMFORD CT 06902	0.37 NE	- 24	N/A
96	LUST	DENNIS CLAYBURN 200704081/CLOSED	18 TAYLOR ST STAMFORD CT 06902	0.38 NW	- 3	N/A
97	STATE	BAR-WAY MFG. CO. 5030/SUSPECTED	476 CANAL ST STAMFORD CT 06902	0.39 NE	- 25	N/A
98	LUST	OWNER IS THE SAME 9804212/CLOSED	441 , 465 CANEL ST STAMFORD CT 06902	0.39 NE	- 27	N/A

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99	LUST	STAMFORD HOUSING AUTHORITY 200604176/CLOSED	25 TAYLOR ST STAMFORD CT 06902	0.39 NW	- 2	N/A
100	LUST	HEYMAN PROPERTIES 29718/INVESTIGATION	CANAL ST STAMFORD CT 06902	0.41 SE	- 24	N/A
100	LUST	HEYMAN PROPERTIES 2602/NO	CANAL ST STAMFORD CT 06902	0.41 SE	- 24	N/A
101	CERCLIS	ANTARES YALE AND TOWNE BUILDING FI CTN000105097/NOT PROPOSED	732 CANAL ST STAMFORD CT 06902	0.41 SE	- 7	N/A
102	NFRAP	METRO NORTH COMMUTER RAILROAD CTD981214414/NFRAP-N	CHERRY ST STAMFORD CT 06902	0.41 NE	- 27	N/A
102	STATE	METRO NORTH COMMUTER RAILROAD 418/INVENTORY	CHERRY ST STAMFORD CT 06902	0.41 NE	- 27	N/A
102	LUST	DOT RAILROAD 28513/CLEANUP INITIATED	CHERRY STATION ST STAMFORD CT 06902	0.41 NE	- 27	N/A
102	LUST	DOT RAILROAD 2604-2605/YES	CHERRY ST STAMFORD CT 06902	0.41 NE	- 27	N/A
103	STATE	ROBERT CIPOLLA and SON AUTO BODY 5069/SUSPECTED	249 GREENWICH AVE STAMFORD CT 06902	0.41 SW	- 16	N/A
104	LUST	TEMPLE PHARMACY 30541/LUST COMPLETED (PROG	139 W MAIN ST STAMFORD CT 06901	0.41 NW	- 26	N/A
104	LUST	TEMPLE PHARMACY 2577/YES	139 W MAIN ST STAMFORD CT 06901	0.41 NW	- 26	N/A
105	LUST	FRANCINE WHALEY 200401051/CLOSED	35 WOODLAND PL STAMFORD CT 06902	0.41 SE	- 21	N/A
106	RCRACOR	STAMFORD NATURAL GAS STORAGE FACIL CTD000845222/USED OIL	32 WASHINGTON BLVD STAMFORD CT 06902	0.42 SW	- 24	N/A
106	CERCLIS	STAMFORD NATURAL GAS STORAGE FACIL CTD981214281/NOT PROPOSED	32 WASHINGTON AVE STAMFORD CT 06902	0.42 SW	- 24	N/A
106	STATE	STAMFORD NATURAL GAS STORAGE FACIL 420/INVENTORY	32 WASHINGTON BLVD STAMFORD CT 06902	0.42 SW	- 24	N/A
106	STATE	STAMFORD NATURAL GAS STOR 593/SUSPECTED	32 WASHINGTON BLVD STAMFORD CT 06902	0.42 SW	- 24	N/A
107	LUST	JOHN JAMES 200607345/CLOSED	245 HENRY ST STAMFORD CT 06902	0.42 SE	- 28	N/A
108	LUST	PLAZA REALTY 200308047/CLOSED	28 PERRY ST STAMFORD CT 06902	0.42 NW	+ 9	N/A
109	STATE	LABBADIA CLEANERS 5054/SUSPECTED	85 W MAIN ST STAMFORD CT 06901	0.43 NW	- 30	N/A
110	LUST	GISONDI PROPERTIES 200005498/CLOSED	18 ELMCROFT STAMFORD CT 06902	0.45 SE	- 10	N/A

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111	STATE	U-HAUL 2876/SUSPECTED	25 JEFFERSON ST STAMFORD CT 06902	0.46 NE	- 13	N/A
112	LUST	PENN GLASS CO. 32189/CLEANUP INITIATED	60 MAIN ST STAMFORD CT 06901	0.46 NW	- 14	N/A
113	LUST	CT NATIONAL BANK 2632/YES	BELDON RD STAMFORD CT 06902	0.46 SE	- 30	N/A
114	VCP	MUTUAL HOUSING ASSOCIATION CTBF-0604-244/VRP-133XSITES	18 SPRUCE ST STAMFORD CT 06902	0.46 NW	+ 11	N/A
115	STATE	THE GENOVESE BLOCK CO. 898/SUSPECTED	70 DAVENPORT ST STAMFORD CT 06902	0.47 SW	- 30	N/A
116	LUST	SCHMUDGE CO. 28508/LUST COMPLETED (PROG	16 DYKE LN STAMFORD CT 06902	0.48 SE	- 23	N/A
116	LUST	SCHMUDGE CO. 2586-2587/YES	16 DYKE LN STAMFORD CT 06902	0.48 SE	- 23	N/A
117	LUST	VALORE INC 200400455/CLOSED	400 MAIN ST STAMFORD CT 06901	0.49 NE	- 1	N/A
118	LUST	NEW NEIGHBORHOODS - APARTMENT BLD. 200402206/CLOSED	40 STILLWATER AVE STAMFORD CT 06902	0.50 NW	- 8	N/A
119	STATE	STAMFORD REALTY COMPANY 3178/SUSPECTED	777 /845 CANAL ST, 247 and STAMFORD CT 06902	0.52 SE	- 24	N/A
120	STATE	RAZOR AUTOBODY 5068/SUSPECTED	76 STILLWATER AVE STAMFORD CT 06902	0.54 NW	+ 3	N/A
121	STATE	YACHT HAVEN, INC. 5080/SUSPECTED	WASHINGTON BLVD STAMFORD CT 06902	0.54 SW	- 16	N/A
122	STATE	GOTHAM CHEMICAL 784/SUSPECTED	10 RUGBY ST STAMFORD CT 06902	0.55 SE	- 23	N/A
123	STATE	U.S. PROLAM 425/SUSPECTED	369 LUDLOW ST STAMFORD CT 06902	0.58 SE	- 27	N/A
124	STATE	PELLICCI S RESTAURANT 1842/SUSPECTED	96-98 STILLWATER AVE STAMFORD CT 06902	0.58 NW	+ 3	N/A
125	STATE	TAUBMAN COMPANY LTD PTNRSHP 5074/SUSPECTED	100 GREY ROCK PL STAMFORD CT 06901	0.58 NE	- 1	N/A
126	STATE	UNITED ORGANICS 424/INVENTORY	387 LUDLOW ST STAMFORD CT 06902	0.59 SE	- 30	N/A
127	STATE	BROCK PRESS 5034/SUSPECTED	45 ATLANTIC ST STAMFORD CT 06901	0.60 NE	+ 13	N/A
128	STATE	THERMATOOL CORP. 2821/SUSPECTED	280 FAIRFIELD AVE STAMFORD CT 06902	0.61 SW	+ 43	N/A
129	STATE	SNET 5070/SUSPECTED	555 E MAIN ST STAMFORD CT 06901	0.61 NE	- 12	N/A

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130	STATE	MT VERNON DIE CASTING 419/INVENTORY	SOUTHFIELD AVE STAMFORD CT 06902	0.63 SW	- 7	N/A
131	STATE	DandC TRANSPORTATION 5059/SUSPECTED	2 STAMFORD LANDING STAMFORD CT 06902	0.64 SW	+ 4	N/A
132	STATE	BILL ROGERS AUTO SALES 726/SUSPECTED	115-117 JEFFERSON ST STAMFORD CT 06902	0.64 NE	- 8	N/A
133	STATE	POLYCAST DIV OF UNIROYAL TECH CORP 731/SUSPECTED	69 SOUTHFIELD AVE STAMFORD CT 06902	0.67 SW	- 3	N/A
134	STATE	BRENNAN REALTY CO. 3628/SUSPECTED	105 BEDFORD ST STAMFORD CT 06901	0.68 NE	- 16	N/A
135	STATE	BLOOMFIELD REALTY SITE 5033/SUSPECTED	35 MAGEE AND 24-38 HARBOR V STAMFORD CT 06902	0.68 NE	- 20	N/A
136	STATE	CHOCOLATE ASSOCIATES III 5036/SUSPECTED	3 STAMFORD LANDING STAMFORD CT 06902	0.69 SW	- 7	N/A
137	STATE	STAMFORD TYPE 899/SUSPECTED	366 FAIRFIELD AVE STAMFORD CT 06902	0.70 SW	+ 31	N/A
138	STATE	ROBERTS OLDSMOBILE 3176/SUSPECTED	49 W BROAD ST STAMFORD CT 06902	0.71 NW	- 21	N/A
139	STATE	MUSILLI, CESARE 5060/SUSPECTED	105 LIBERTY ST STAMFORD CT 06902	0.72 NW	+ 72	N/A
140	STATE	STAMFORD MUNICICPAL LANDFILL 421/INVENTORY	DYKE LN STAMFORD CT 06902	0.73 SE	- 30	N/A
141	STATE	THERMOSEN, INC. 900/SUSPECTED	375 FAIRFIELD AVE STAMFORD CT 06902	0.74 SW	+ 41	N/A
142	STATE	MY WAY AUTO BODY SHOP 5061/SUSPECTED	36 GLEASON AVE STAMFORD CT 06902	0.75 NE	- 24	N/A
143	STATE	PRAY BODY SHOP 5547/SUSPECTED	336 ELM ST STAMFORD CT 06902	0.75 NE	- 10	N/A
144	STATE	IMPORTED CARS OF STAMFORD 5052/SUSPECTED	377 ELM ST STAMFORD CT 06902	0.76 NE	- 11	N/A
145	STATE	AUTOSPA REALTY 5029/SUSPECTED	310 ELM ST STAMFORD CT 06902	0.76 NE	- 11	N/A
146	STATE	PRO CLEANERS 3105/SUSPECTED	170 SELLECK ST STAMFORD CT 06902	0.77 SW	+ 58	N/A
146	STATE	TOWN LINE MOTORS 5067/SUSPECTED	170 SELLECK ST STAMFORD CT 06902	0.77 SW	+ 58	N/A
147	STATE	ULTRAMAR PETROLEUM, INC. 5077/SUSPECTED	90 SOUTHFIELD AVE STAMFORD CT 06902	0.77 SW	+ 9	N/A
148	STATE	AMERICAN CYANAMID CO. SHIPPAN PLAN 5028/SUSPECTED	205 MAGEE AVE STAMFORD CT 06902	0.78 SE	- 30	N/A

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148	STATE	205 MAGEE 5475/SUSPECTED	205 MAGEE AVE STAMFORD CT 06902	0.78 SE	- 30	N/A
149	STATE	HOFFMAN FUEL COMPANY OF STAMFORD 3183/SUSPECTED	100 SOUTHFIELD AVE STAMFORD CT 06902	0.80 SW	+ 1	N/A
150	STATE	DIMARCO BROTHERS 5045/SUSPECTED	458 W MAIN ST STAMFORD CT 06902	0.81 NW	+ 75	N/A
151	STATE	GEN-POL 5048/SUSPECTED	420 FAIRFIELD AVE STAMFORD CT 06902	0.83 SW	+ 41	N/A
152	STATE	GAISER, E.J., INC. 1235/SUSPECTED	49 LIBERTY PL STAMFORD CT 06902	0.85 SW	+ 11	N/A
152	RCRACOR	GAISSER E J INC CTD049595754/SGN	49 LIBERTY PL STAMFORD CT 06902	0.85 SW	+ 11	N/A
153	STATE	BEE-LINE AUTOMOTIVE CENTER INC 5032/SUSPECTED	197 WEST AVE STAMFORD CT 06902	0.85 NW	+ 65	N/A
154	STATE	OCEAN GROVE VILLAS 3106/SUSPECTED	892 SHIPPAN ST STAMFORD CT 06902	0.87 SE	- 21	N/A
155	STATE	M K PREP CORP 1727/SUSPECTED	17 AMELIA PL STAMFORD CT 06902	0.92 SW	+ 63	N/A
156	STATE	CLARK S HILL PLAZA 5038/SUSPECTED	800 E MAIN ST STAMFORD CT 06902	0.92 NE	- 14	N/A
157	STATE	GLOBE SLICING MACHINE CO. 3189/SUSPECTED	224 SELLECK ST STAMFORD CT 06902	0.95 SW	+ 52	N/A
158	STATE	KARL S AUTO BODY SERVICE 5053/SUSPECTED	20 LAFAYETTE ST STAMFORD CT 06902	0.95 NE	+ 2	N/A
159	STATE	COMMUNICATION MANAGEMENT CORPORATI 5041/SUSPECTED	21 HARVARD AVE STAMFORD CT 06902	0.97 NW	+ 54	N/A
160	STATE	YACHT HAVEN WEST, INC. 2347/SUSPECTED	DYKE ST STAMFORD CT 06902	0.97 SE	- 30	N/A
161	STATE	INTERRAD CORPORATION 3188/SUSPECTED	65 HARVARD AVE STAMFORD CT 06902	0.99 NW	+ 42	N/A

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	SPILLS	DEBRAH SANTORA 200904247/CLOSED	386 VINE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200203000/CLOSED	RIVERSTREET AND HIGH RIDGE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200505598/CLOSED	GLENN BROOK RD and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200301912/CLOSED	SOMERS ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT. TRANSIT 200403677/CLOSED	WASHINGTON BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT. TRANSIT 200506160/CLOSED	ATLANTIC SQ STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT. TRANSIT 200507639/CLOSED	N STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	CT. TRANSIT 200601652/CLOSED	N STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	CLandP 200605290/CLOSED	SOMERS ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	DEB LINOTTI 200504671/CLOSED	38 ASTON LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200807029/CLOSED	MAIN ST, ATLANTIC SQ STAMFORD CT	NON GC	N/A	N/A
	SPILLS	DENNIS RUSHOVICH 200906308/CLOSED	56 GREENS CIRC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	DEREM 201000093/CLOSED	55 REVONAH AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	ELIZABETH YIM 200902969/CLOSED	46 DOGWOOD LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	EXXON MOBILE 200903522/CLOSED	942 OAK ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	FINESSE AUTOBODY 200905548/CLOSED	GLENBROOK ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	FUNOCIO CARTING 200802306/CLOSED	DAVENPORT ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	GARBO LOBSTERS 200808087/CLOSED	I-95 N EXIT 9 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD 957075/CLOSED	S L I STAMFORD CT	NON GC	N/A	N/A
	SPILLS	GEORGE LEYLEGIAN 200906442/CLOSED	432 WEST HILL ROAD STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	CVS PHARMACY 200906363/CLOSED	593 NEWFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CLandP 9806019/CLOSED	OAKLAND AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CASTRO RES. 9808266/CLOSED	11 WEBSTER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CL AND P 200308191/CLOSED	97 HEMMINGTON AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY CARTING 942187/CLOSED	0 BEDFORD ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MOTHER NATURE 913584/CLOSED	17 DURY ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD WPCA 200805886/CLOSED	ALVORD LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CLandP 9900511/CLOSED	HAYWOOD HTS OFF OF HAMILTON STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY CARTING CO. 9902375/CLOSED	COURTLAND BETWEEN MAPLETREE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD - ARNOLD KANITTLE 200604724/CLOSED	WILSON ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200900456/CLOSED	WOOD WAY and HOYT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD 9903828/CLOSED	S CANEL ST. OF MARKET ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	CT TRANSIT 200903046/CLOSED	N STATE ST and WASHINGTON B STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CLandP 9903699/CLOSED	MARKET > CAPACITOR BANK ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	CLandP 200006458/CLOSED	MERRIBROOK RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	COLDWELL BANKER 956118/CLOSED	179 LUCIELLE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CONN. D.O.T 200104568/CLOSED	WESTERN BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CONNECTICUT TRANSIT 200505258/CLOSED	BROAD ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY CARTING 200906535/CLOSED	248 NORTH SELLECK EASTERN L STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CONNECTICUT TRANSIT AUTHORITY 200604197/CLOSED	ATLANTIC BLVD and MAIN ST STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	CORDARO 200907267/CLOSED	70 WEST HILL ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD, LOU CASSOLL 200902545/CLOSED	WEST PARK PL, MILL RIVER PR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	CITY OF STAMFORD 200802555/CLOSED	MISSION ELKS CLUB ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	STAMFORD CHEMICAL H50613/HIGHWAY	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MOBILE OIL 200906242/OPEN	627 NEWFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MICHAEL AMBROSECCHIO 200901356/CLOSED	113 BARCLEY DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MORTON INTERNATIONAL 936961/CLOSED	MAIN ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	MR.TARAPORE 200905344/CLOSED	55 BIRCHWOOD ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MS. TRISTIAN SMITH 200901233/CLOSED	ROXBURRY RD and WESTOVER RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MVA 200502812/CLOSED	COE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 956746/CLOSED	COVE RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 943361/CLOSED	76 MARK DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 933215/CLOSED	LAWN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	METRO NORTH RAILROAD 200708171/CLOSED	N METRO RAILROAD CHERRY STAMFORD CT	NON GC	N/A	N/A
	SPILLS	C.L. and P 200009698/CLOSED	S END SUB STATION LOCATED O STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	METRO NORTH RAILROAD 200204927/CLOSED	SRINGDALE / REEVES CROSSING STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 926653/CLOSED	STILLWATER AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 926044/CLOSED	HILL RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 923226/CLOSED	CULLODEN RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORCON TRANSPORTATION 914162/CLOSED	SELLECK ST STAMFORD CT 06902	NON GC	N/A	N/A

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	SPILLS	NEW CENTURY TRANSPORTATION 200803372/CLOSED	I-95 N AFTER EXIT 11 TRUCK STAMFORD CT	NON GC	N/A	N/A
	SPILLS	N.U. 9802875/CLOSED	WASHINGTON BLVD. STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	N.U. 200304519/CLOSED	WIRE MILL RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 961526/CLOSED	BROAD WEST ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 955182/CLOSED	HARBOR VIEW RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 944215/CLOSED	ORCHARD ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	KEYSTONE FREIGHT 200405461/CLOSED	I-95 N BETWEEN EXIT 8 and E STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	HAYMAN CORP 91455/CLOSED	E BRANCH STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JAMES RABINO 200901148/CLOSED	48 PLESANT ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JAROLD COOPER 200904184/CLOSED	116 WEDGEMERE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOE FERRAJINA 200903103/CLOSED	22 WINDELL PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOERMAN REALTY 92109/CLOSED	PALMERS HILL RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	JOHN KANTZAS 200907266/CLOSED	821 LONG RIDGE ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOHN LEHANEY 200906015/OPEN	939 HIGH RIDGE ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOSEPH DEPLGADO 200904678/CLOSED	145 ACRE VIEW DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOSEPH LOMBARDO - ATTORNEY FOR EST 200904380/CLOSED	187 SILVER HILL LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	METRO NORTH RR 200900043/CLOSED	METRO NORTH RAILROAD ON CHE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	KELLY TRIPLETT 200907275/CLOSED	38 SAGAMORE ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	GUY SOUSA 200906232/CLOSED	73 HARBOR DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	LAND TRANSPORTATION LLC 200801249/CLOSED	S I-95 EXIT STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	LARA COLLINS- KAREN TIMCO 200603247/CLOSED	BETWEEN LOOP AND CAR WASH STAMFORD CT	NON GC	N/A	N/A
	SPILLS	LAURA MAPLE 200904964/CLOSED	26 TOILESOME BROOK RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	LAWN DOCTOR 200402648/CLOSED	SPRINGDALE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	LORINDA SMIRAGLIA 200907018/CLOSED	50 BARHOLM AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	LUCIA RES. 9805733/CLOSED	130 ALLEN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	M.V.A 200101326/CLOSED	I - 95 SOUTHBOUND PRIOR TO STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MARIA BELL 200905095/CLOSED	99 CLOVER DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	MAXWELL 200306140/CLOSED	88 KEILWORTH DR W STAMFORD CT	NON GC	N/A	N/A
	SPILLS	JOSEPH MORABITO 200906102/OPEN	33 HILLANDALE AVE STAMFORD CT	NON GC	N/A	N/A
	ERNS	LOADING RACK 10 WATER STREET NRC-926549/MOBILE	LOADING RACK 10 WATER ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	CONNECTICUT LIGHT AND PWR 233129/FIXED FACILITY	MYRTLE AVE STAMFORD CT	NON GC	N/A	N/A
	ERNS	CONNECTICUT LIGHT AND PWR 229003/FIXED FACILITY	HARBOR DR STAMFORD CT	NON GC	N/A	N/A
	ERNS	CRESCENT STREET NRC-858483/RAILROAD	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	CT NRC-638236/RAILROAD NON-RELEASE	CT STAMFORD CT	NON GC	N/A	N/A
	ERNS	CT LIGHT AND POWER 632400/HIGHWAY RELATED	VINE RD and BRANDYWINE STAMFORD CT	NON GC	N/A	N/A
	ERNS	EAST OF STANFORD STATION / CATENAR NRC-885504/RAILROAD NON-RELEASE	E OF STANFORD STATION / CAT STAMFORD CT	NON GC	N/A	N/A
	ERNS	HARBOR SQUARE MARINA 648688/FIXED FACILITY	E BRANCH OF STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	ERNS	I-95 / NORTHBOUND NRC-723162/MOBILE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	RIVER BEND DR NRC-719124/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	IN THE YARD BETWEEN THE LOOP AND T NRC-799308/RAILROAD	STAMFORD YARD STAMFORD CT	NON GC	N/A	N/A

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	ERNS	ACTION FAMILY MOVING 485294/UNKNOWN (EPA REGIONS	I 95 SOUTHBOUND EXIT 10/9 STAMFORD CT	NON GC	N/A	N/A
	ERNS	METRO NORTH COMMUTER R.R. 209276/RAILROAD	FROM STAMFORD STATION TO FA STAMFORD CT	NON GC	N/A	N/A
	ERNS	METRO NORTH RAILROAD NRC-739438/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	METRO NORTH RAILROAD NRC-855353/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	METRO NORTH RAILROAD YARD CHERRY S NRC-894039/RAILROAD	METRO NORTH RAILROAD YARD C STAMFORD CT	NON GC	N/A	N/A
	ERNS	OFF WASHINGTON BLVD. NEAR A FIRE D NRC-573777/FIXED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	PALMER LANDING. NRC-645499/PIPELINE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	REEVES CROSSING NRC-617334/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	REEVES ROAD NRC-617353/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	STAMFORD YARD / ELM ST. NRC-799319/RAILROAD	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	I-95 SOUTHBOUND BETWEEN EXIT 8 AND NRC-763785/MOBILE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	VESSEL NAME, ANDIAMO 200804177/CLOSED	BREWERS YACHT HAVEN, WEST a STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 934613/CLOSED	CRYSTAL ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200900473/CLOSED	WASHINGTON BLVD, RBS STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200907008/CLOSED	DEN ROD AND BARCLAY DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200101446/CLOSED	CANAL - LONG ISLAND SOUND S STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200005471/CLOSED	SELECK ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNKNOWN CONSTRUCTION CO 200206330/CLOSED	92 TOWNS RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN MOTORIST 200604307/CLOSED	I-95 N STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNKNOWN NAME 200507859/CLOSED	HIGHRIDGE RD STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	UNKNOWN REPAIR GARAGE 9906026/CLOSED	BAXTER NEAREST CROSS HARVAR STAMFORD CT 06902	NON GC	N/A	N/A
	ERNS	CALDOR TRUCKING 290516/HIGHWAY RELATED	I-95 S BETWEEN EXIT 6 and E STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNNAMED HOMEOWNER 200502358/CLOSED	BURGESS ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	BEHIND CANAL STREET IN HARBOR SQUA NRC-835164/FIXED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	WESTMORE FUEL 914640/CLOSED	9 DAWN DR STAMFORD CT	NON GC	N/A	N/A
	RCRAGN	STAMFORD NATURAL GAS STORAGE FACIL CTD000845222/USED OIL	32 WASHINGTON BLVD STAMFORD CT 06902	NON GC	N/A	N/A
	RCRANLR	PITT CONSOL CHEMICAL CO CTD004322277/NLR	HIGH RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	ERNS	10 WATER STREET NRC-922597/MOBILE	10 WATER ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	1285 HIGH RIDGE RD NRC-555215/STORAGE TANK	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	227 CHESTNUT HILL / NEAR ETHAN ALL NRC-790475/MOBILE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	328 SELLECK ST 888 WASHINGTON BLVD NRC-919267/FIXED	328 SELLECK 888 WASHINGTON STAMFORD CT	NON GC	N/A	N/A
	ERNS	97 DYKE LANE NRC-930382/FIXED	97 DYKE LANE STAMFORD CT	NON GC	N/A	N/A
	ERNS	SANCHAR PROPERTIES 548975/UNDERGROUND STORAGE	1 DARRY PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN SOURCE 200408168/CLOSED	145 W HOLILAND LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	AMADEO REYES 200806109/CLOSED	236 WIREMILLL RD STAMFORD CT	NON GC	N/A	N/A
	NPDES	CTR051369/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	NPDES	CTP000053/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	NPDES	CTP000081/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	NPDES	CTP000570/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	NPDES	CT0030279/MINOR	UNKNOWN STAMFORD CT 06901	NON GC	N/A	N/A

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	STATE	LODATO, PHILIP ET AL 5056/SUSPECTED	WARSHAW, HARVARD, ARDMORE STAMFORD CT	NON GC	N/A	N/A
	STATE	PRESUTTO, GAETANO 5066/SUSPECTED	FINNEY AND LIBERTY ST STAMFORD CT 06902	NON GC	N/A	N/A
	STATE	RAYTHEON - SKATE 5516/SUSPECTED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	REINAUER TRANSPORTATION 485730/MARINE- RELEASED FRO	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	ALONZO MARTINEZ 200905781/CLOSED	45 CENTER ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	GENOVESE IND 295946/FIXED FACILITY	WEST HARBOR AT END OF RIPPO STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	AS ABOVE 9705333/CLOSED	0 PACIFIC POLE 129 ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BARBARA SMITH 200904143/CLOSED	91 BARCLAY DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BARBRA GODDARD 200905591/CLOSED	269 WEST TRL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BAXTER, CHARLIE 200904217/CLOSED	144 DAVENPORT DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BONGIORNO INDUSTRIES 200901078/CLOSED	WEST AVE and ARDMORE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BREWER YACHT HAVEN CLUB MARINA 200802486/CLOSED	DYKE LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BRIAN HINES 200404312/CLOSED	133 ECHO DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	BURN RESIDENCE 945884/CLOSED	0 WALLACK SOUTH POINT STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	C LandP 913322/CLOSED	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	ACTION FAMILY MOVING 947320/CLOSED	I-95 S/B EX 10-9 STAMFORD CT 06902	NON GC	N/A	N/A
	ERNS	WITHIN RAILYARD- MILEPOST 33 NRC-715591/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	STAMFORD YARD NRC-562536/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	STANFORD CHEMICAL 421086/HIGHWAY RELATED	0 RTE 287 S/B STAMFORD CT	NON GC	N/A	N/A
	ERNS	STANFORD CHEMICAL 423081/HIGHWAY RELATED	ROUTE 287 SOUTHBOUND / DIST STAMFORD CT	NON GC	N/A	N/A

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	ERNS	STANFORD STATION NRC-832232/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	TOWN OF STAMFORD CT 493394/UNDERGROUND STORAGE	WESTOVER RD STAMFORD CT 06902	NON GC	N/A	N/A
	ERNS	TRACKS NRC-564272/RAILROAD NON-RELEASE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	UNKNOWN 587885/UNKNOWN	0 SPILL ON BORDER OF STAMFO STAMFORD CT	NON GC	N/A	N/A
	ERNS	UNKNOWN 425305/UNKNOWN (EPA REGIONS	STAMFORD RESEARCH PARK STAMFORD CT	NON GC	N/A	N/A
	ERNS	UNKNOWN 639274/FIXED FACILITY	WESTOVER RD STAMFORD CT	NON GC	N/A	N/A
	NPDES	CT LIGHT and POWER - STAMFORD CT0026506/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	WEST MAIN STREET and WEST AVENUE NRC-915725/MOBILE	W MAIN ST and WEST AVE STAMFORD CT	NON GC	N/A	N/A
	ERNS	UNKNOWN 426531/HIGHWAY RELATED	I-95 BETWEEN EXIT 5 and EXI STAMFORD CT 06901	NON GC	N/A	N/A
	ERNS	D31504/HIGHWAY	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	ERNS	NRC-846376/FIXED	5900 HOPE ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	D20015/FIX FAC	383 MAIN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	ERNS	P21178/UNKNOWN	UNKNOWN STAMFORD CT 06902	NON GC	N/A	N/A
	ERNS	NRC-854210/FIXED	106 BOUTON ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	271596/FIXED FACILITY	WATER ST STAMFORD CT	NON GC	N/A	N/A
	ERNS	171542/FIXED FACILITY	WEST BRANCH OF STAMFORD HAR STAMFORD CT	NON GC	N/A	N/A
	ERNS	206880/FIXED FACILITY	IBM PARKING LOT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	C LandP 92173/CLOSED	0 KINGS HWY STAMFORD CT	NON GC	N/A	N/A
	ERNS	UNKNOWN 597072/UNKNOWN	E BRANCH OF STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905460/CLOSED	686 CANAL ST STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200901849/CLOSED	HIGH RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905998/CLOSED	300 WEST FEET OF and BAXTE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905850/CLOSED	124 SELLECK ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905683/CLOSED	9 WEST KENILWORTH DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905579/CLOSED	CUSHING ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906011/OPEN	NORTH METRO RAILROAD BREWER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905534/CLOSED	BROAD VAULT 393 ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906057/CLOSED	999 SUMMER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905333/CLOSED	28 TUPPER DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905128/CLOSED	STATION ST and WASHINGTON B STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905078/CLOSED	HOYTE ST and WOODWARD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902561/CLOSED	ATLANTIC ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902453/CLOSED	SEA BEACH DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200805699/CLOSED	SAW MILL RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200905597/CLOSED	417 ELM - DONUT DELIGHTS ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	932273/CLOSED	NOROTON RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9705859/CLOSED	WESCOTT COVE BY CUMMINGS BE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	952053/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	923199/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	923192/CLOSED	NOROTON RIVER STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	944381/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906016/CLOSED	SOUTH RAILROAD STATION ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	922825/CLOSED	STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901823/CLOSED	555 GREYROCK PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	935102/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200702177/CLOSED	VISTA NEW YORK LUMBER YARD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200702554/CLOSED	ATLANTIC ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200705077/CLOSED	BAXTER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200705139/CLOSED	54 SUTTON DR W STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200705798/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	942104/OPEN	0 HOLLY POND PLAZA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200807625/CLOSED	BUXTON FARMS RD and TURN OF STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902337/CLOSED	LONG RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902794/CLOSED	ATLANTIC and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902732/CLOSED	MAIN and ATLANTIC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200902736/CLOSED	SHIPPAN AVE and OCEAN DR W STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901281/CLOSED	ALPINE ST and JAY RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200903514/CLOSED	BROAD ST BETWEEN SUMMER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901004/CLOSED	HOPE ST and WOODWAY ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200903748/CLOSED	POST RD and SEASIDE AVE STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200807455/CLOSED	45 DENSTONE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200807070/CLOSED	LONG RIDGES RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200806757/CLOSED	SCOFIELDTOWN RD and ROCK RA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200806158/CLOSED	HOPE ST and PINE HILL AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200806156/CLOSED	MAIN ST and ATLANTIC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200505946/CLOSED	CHESHIRE BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901105/CLOSED	MAIN ST SUMMER and ATLANTIC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904271/CLOSED	80 COOLIDGE AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901828/CLOSED	555 GREYROCK PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901485/CLOSED	BROAD ST TRESSER BLVD and A STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901387/CLOSED	MEGAN LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200901277/CLOSED	DUKE DR and CEDAR HEIGHTS STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904961/CLOSED	493 GLENNBROOK RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200903369/CLOSED	348 HIGH RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904550/CLOSED	1 MAY APPLE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9706351/CLOSED	0 HARBOUR LANDING PIER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904276/CLOSED	NEAR 100 COOLIDGE AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904213/CLOSED	ROCK RIDGE LN and NORTHWOOD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904229/CLOSED	226 CULLODEN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904191/CLOSED	8 JEANNE CT STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200904036/CLOSED	17 CLORINDA CT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200903903/CLOSED	103 WALLACKS DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200904882/CLOSED	GREENWICH AVE and DAVENPORT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200302485/CLOSED	N INTERSECTION OF BURWOOD A STAMFORD CT	NON GC	N/A	N/A
	SPILLS	943302/CLOSED	ROWAYTON RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200404197/CLOSED	HIGHRIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200403954/CLOSED	HOPE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200303863/CLOSED	REVONAH RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200303409/CLOSED	I-95 N STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200406050/CLOSED	WEST AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200303335/CLOSED	SWAMPSCOTT RD MEDOW PARK AV STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200407550/CLOSED	SOMMERS ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200302432/CLOSED	HOPE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200302102/CLOSED	S STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200300460/CLOSED	71 STRAWBERRY HILL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200306633/CLOSED	WASHINGTON BOULAVARD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200304260/CLOSED	DAVENPORT RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200205580/CLOSED	I-95 S STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200303384/CLOSED	BOSTON POST RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200502986/CLOSED	ATLANTIC and MAIN/NORTH STA STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	NORTHEAST UTILITIES 954452/CLOSED	CLOVER HILL DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200505798/CLOSED	42 FRARIS RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200505731/CLOSED	W BRANCH OF STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200503596/CLOSED	ATLANTIC SQ and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200503313/CLOSED	MATTHEW ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200405901/CLOSED	NEWFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200503003/CLOSED	SCAOZI PARK BRIDGE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200110558/CLOSED	FAIRFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200502543/CLOSED	N STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200502391/CLOSED	MAPLE TREE AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200501963/CLOSED	S STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200501914/CLOSED	OLD LONG RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200501388/CLOSED	ALTANTIC AVE and CHESHIRE B STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200408307/CLOSED	WASHINGTON BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200503085/CLOSED	NEW FIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200000862/CLOSED	W BRANCH / STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200008590/CLOSED	74 CRISTY HILL RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200002648/CLOSED	UPPER RD / OLD MUSON RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9902785/CLOSED	STAMFORD HARBOR STAMFORD WA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9807002/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	9704836/CLOSED	STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200204262/CLOSED	E BRANCH STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9800434/CLOSED	STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200100034/CLOSED	30 BELLMAIR RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9705308/CLOSED	915 SOUTHFIELD ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9700079/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9604167/CLOSED	800 HEPEST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	955284/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9706697/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200805698/CLOSED	HIGHLINE TRL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9700186/CLOSED	444 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9802526/CLOSED	0 POST RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	944671/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200105446/CLOSED	S MILL RIVER 1/2 OF THE BRI STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200106094/CLOSED	TURN OF RIVER / CITGO STATI STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200106036/CLOSED	BASSER AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9804480/CLOSED	E HOLY POND OFF WEED AVE, O STAMFORD CT	NON GC	N/A	N/A
	SPILLS	945725/CLOSED	45 UPPER RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200101805/CLOSED	BOUDEROL RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9802696/CLOSED	MILL RIVER STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200104662/CLOSED	185 RENSSLAER AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9702821/CLOSED	RUPPOWAN RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9900358/CLOSED	36 PATTEN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9901034/CLOSED	244 TOWN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9125/CLOSED	E BRANCH STAMFORD CT	NON GC	N/A	N/A
	SPILLS	956015/CLOSED	MIANUS RIVER PARK STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200201804/CLOSED	51 PALMS RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9803144/CLOSED	0 BROOKDALE POLE 2162 RD STAMFORD CT	NON GC	N/A	N/A
	LUST	JEFFERY WILPON 200304298/CLOSED	14 BROAD RD STAMFORD CT	NON GC	N/A	N/A
	LUST	PAUL SHERIDAN 200807635/CLOSED	39 HIGHROCK RD STAMFORD CT	NON GC	N/A	N/A
	LUST	CT NATIONAL BANK 29405/LUST COMPLETED (PROG	BELDON RD STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	DEB LINOTTI 200504671/CLOSED	38 ASTON LN STAMFORD CT	NON GC	N/A	N/A
	LUST	ELIZABETH YIM 200902969/CLOSED	46 DOGWOOD LN STAMFORD CT	NON GC	N/A	N/A
	LUST	GETTY OIL 28828/LUST COMPLETED (PROG	LONG RIDGE RD STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	CITY OF STAMFORD - ARNOLD KANITTLE 200604724/CLOSED	WILSON ST STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	JAROLD COOPER 200904184/CLOSED	116 WEDGEMERE RD STAMFORD CT	NON GC	N/A	N/A
	LUST	CASTRO RES. 9808266/CLOSED	11 WEBSTER ST STAMFORD CT	NON GC	N/A	N/A
	LUST	JOE FERRAJINA 200903103/CLOSED	22 WINDELL PL STAMFORD CT	NON GC	N/A	N/A
	LUST	LUCIA RES. 9805733/CLOSED	130 ALLEN ST STAMFORD CT	NON GC	N/A	N/A
	LUST	MAXWELL 200306140/CLOSED	88 KEILWORTH DR W STAMFORD CT	NON GC	N/A	N/A

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	LUST	MICHAEL AMBROSECCHIO 200901356/CLOSED	113 BARCLEY DR STAMFORD CT	NON GC	N/A	N/A
	LUST	NORTHEAST UTILITIES 2524-2525/YES	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	 200806113/CLOSED	RR STATION, PARKING LOT STAMFORD CT	NON GC	N/A	N/A
	LUST	JAMES RABINO 200901148/CLOSED	48 PLESANT ST STAMFORD CT	NON GC	N/A	N/A
	UST	836 BOSTON POST RD. 11876/PERMANENTLY CLOSED	836 BOSTON POST RD STAMFORD CT 06901	NON GC	N/A	N/A
	OTHER	LODATO, PHILIP ET AL 5056/TRANSFER ACT	WARSHAW, HARVARD, ARDMORE STAMFORD CT	NON GC	N/A	N/A
	OTHER	PRESUTTO, GAETANO 5066/TRANSFER ACT	FINNEY AND LIBERTY ST STAMFORD CT 06902	NON GC	N/A	N/A
	UST	DARIEN GREEN 12607/CURRENTLY IN USE	320 BOSTON POST RD STAMFORD CT 06902	NON GC	N/A	N/A
	UST	HYCLIFF PUMPSTATION 12136/PERMANENTLY CLOSED	HALLIWELL DR STAMFORD CT 06902	NON GC	N/A	N/A
	UST	LINDALE STREET 12470/PERMANENTLY CLOSED	LINDALE ST STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	CITY OF STAMFORD WPCA 200805886/CLOSED	ALVORD LN STAMFORD CT	NON GC	N/A	N/A
	UST	STILLMEADOW ELEMENTARY SCHOOL 1B372CDB-23A4-44C/CURRENTLY IN USE	800 STILLWATER ROAD STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	SCHACHT 9902303/CLOSED	6060 ANCHOR VIEW DR STAMFORD CT	NON GC	N/A	N/A
	UST	MORMACSUN MOS0-0841/ACTIVE	C/O MORMAC MARINE TRANSPORT STAMFORD CT 06901	NON GC	N/A	N/A
	LUST	AUTO SHOP 2616-2618/YES	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	AUTO SHOP 29186/LUST COMPLETED (PROG	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	BARBARA SMITH 200904143/CLOSED	91 BARCLAY DR STAMFORD CT	NON GC	N/A	N/A
	LUST	BAXTER, CHARLIE 200904217/CLOSED	144 DAVENPORT DR STAMFORD CT	NON GC	N/A	N/A
	LUST	BRIAN HINES 200404312/CLOSED	133 ECHO DR STAMFORD CT	NON GC	N/A	N/A
	UST	STAMFORD WPCF 17A5BA55-7C73-46B/PERMANENTLY CLOS	1 HARBOR VIEW AVE STAMFORD CT 06902	NON GC	N/A	N/A

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	RELEASES	618885/UNKNOWN (NRC)	LARKIN REAR OF OFFICE COMPL STAMFORD CT	NON GC	N/A	N/A
	LUST	NORTHEAST UTILITIES 30149/LUST COMPLETED (PROG	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	UNKNOWN SHEEN INCIDENT NRC-641960/UNKNOWN SHEEN	UNKNOWN SHEEN INCIDENT STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN SHEEN INCIDENT WEST MAIN A NRC-894822/UNKNOWN SHEEN	UNKNOWN SHEEN INCIDENT WEST STAMFORD CT	NON GC	N/A	N/A
	RELEASES	WEST BRANCH OF THE STAMFORD HARBOR NRC-538880/VESSEL	PONUS YACHT CLUB STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	202116/UNKNOWN (NRC)	STAMFORD INCINERATOR HARBOR STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN SHEEN INCIDENT NRC-519567/UNKNOWN SHEEN	W STAMFORD HARBOR BRANCH UN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	162234/UNKNOWN (NRC)	AT THE END OF SOUTHFIELD PO STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN SHEEN INCIDENT NRC-539262/UNKNOWN SHEEN	E BREWERS YACHT HAVEN PIER STAMFORD CT	NON GC	N/A	N/A
	RELEASES	157845/MARINE- RELEASED FRO	W END OF STAMFORD HARBOR GR STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN 597072/MARINE VESSEL (EPA R	E BRANCH OF STAMFORD HARBOR STAMFORD CT 06901	NON GC	N/A	N/A
	RELEASES	328138/UNKNOWN (NRC)	STAMFORD HARBOR STAMFORD CT 06901	NON GC	N/A	N/A
	RELEASES	601806/UNKNOWN (NRC)	HOLY POND STAMFORD CT 06901	NON GC	N/A	N/A
	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-06902	UNKNOWN CT 06902	NON GC	N/A	N/A
	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-06901	UNKNOWN CT 06901	NON GC	N/A	N/A
	RELEASES	184420/UNKNOWN (NRC)	W PONUS YACHT CLUB YACHT HA STAMFORD CT	NON GC	N/A	N/A
	LUST	200703872/CLOSED	15 VERGIL ST STAMFORD CT	NON GC	N/A	N/A
	LUST	SMITH 200200830/CLOSED	227 REED ST STAMFORD CT	NON GC	N/A	N/A
	LUST	SMURLO RESIDENCE 30440/LUST COMPLETED (PROG	81 HASLEY DR STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	SNET 28517/LUST COMPLETED (PROG	RTE 106 STAMFORD CT 06902	NON GC	N/A	N/A

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	LUST	STAMFORD HEALTH SYSTEMS MIKE SMERI 200903339/CLOSED	41 WRIGHT ST STAMFORD CT	NON GC	N/A	N/A
	LUST	STAMFORD METRO GREEN APTS. CAROL 200806265/CLOSED	HENRY ST and ATLANTIC ST STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN SHEEN INCIDENT NRC-603601/UNKNOWN SHEEN	2100 BATEMAN WAY STAMFORD CT 06902	NON GC	N/A	N/A
	LUST	TERESSA MCKENNA 200806111/CLOSED	27 GERAIK RD STAMFORD CT	NON GC	N/A	N/A
	PERMITS	TENNESSEE GAS PIPELINE GNG010009/MINOR	RIPPOWAM RIVER STAMFORD CT	NON GC	N/A	N/A
	LUST	 9604268/CLOSED	RAY STAMFORD CT	NON GC	N/A	N/A
	RELEASES	STAMFORD HARBOR NRC-723302/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	STAMFORD HARBOR NRC-772027/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	STAMFORD HARBOR ONG INDUSTRIES NRC-825325/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	STAMFORD RIVER / EAST BRANCH NRC-805834/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	UNKNOWN 587885/UNKNOWN (EPA REGIONS	SPILL ON BORDER OF STAMFORD STAMFORD CT	NON GC	N/A	N/A
	LUST	TARATINO 200902919/CLOSED	253 MINIDALE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200802896/CLOSED	N STATE RR STATION ST STAMFORD CT	NON GC	N/A	N/A
	PERMITS	TOOMBS DEVELOPMENT COMPANTY GGR001035/MINOR	TRESSER and BLVD STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	 200707124/CLOSED	I 95 NORTH EXIT 2-3 and WEI STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200706840/CLOSED	STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200706716/CLOSED	WASHINGTON BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200706326/CLOSED	ATANTIC SQ STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200800693/CLOSED	N STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200802997/CLOSED	RT-137 HIGH RIDGE RD STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200800767/CLOSED	S JUST OF CHESTNUT ON LONGR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200802509/CLOSED	POST and LEROY AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200802003/CLOSED	N I-95 NEAR EXIT-5 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200801969/CLOSED	STAMFORD RAIL STATION WASHI STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200801921/CLOSED	WIRE MILL RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200801898/CLOSED	205 BLAKBERRY RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200705460/CLOSED	I-95 SOUTH EXIT 8 and 7 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200803095/CLOSED	ATLANTIC SQUARE MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200803930/CLOSED	HOPE, and WOODWAY ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200805215/CLOSED	HIGH RIDGE RD, NEAR HIGH RI STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200805025/CLOSED	WASHINGTON BLVD and N STATE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200804942/CLOSED	107 BARKLY DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200804579/CLOSED	GREENLEAF DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200806512/CLOSED	GREENWICH AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200708218/CLOSED	WASHINGTON BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200804114/CLOSED	MILL RIVER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200704632/CLOSED	UNKNOWN ADDRESS STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200803797/CLOSED	SCHOFIELD TOWN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200803561/CLOSED	DYKE LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200803454/CLOSED	N I-95, EXIT-8 STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200803338/CLOSED	700 SUMMERS ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200801451/CLOSED	PACIFIC WASHINGTON BOULAVAR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200801112/CLOSED	TURN OFF RIVER HIGH RIDGE R STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200804313/CLOSED	E MAIN ST and LOCKWOOD ST STAMFORD CT	NON GC	N/A	N/A
	PERMITS	CONTINUUM CARE CORP GSW000744/MINOR	LONG RIDGE RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200404875/CLOSED	ATLANTIC BLVD. AND MAIN / P STAMFORD CT 06901	NON GC	N/A	N/A
	SWL	STAMFORD, CITY OF CTSW-PE-01-144/PERMIT	HARBOR VIEW STAMFORD CT	NON GC	N/A	N/A
	SWL	CTSW-CL-01-136/CLOSED	DYKE PARK STAMFORD CT	NON GC	N/A	N/A
	SWL	CTSW-CL-01-137/CLOSED	COVER PARK (2 AREAS) STAMFORD CT	NON GC	N/A	N/A
	SWL	CTSW-CL-01-138/CLOSED	HOMESTEAD RR CUT AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200705391/CLOSED	12 OVERBROOK LN STAMFORD CT	NON GC	N/A	N/A
	PERMITS	CAROL MANAGEMENT COMPANY SP0000559/MINOR	600 MADISON ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200706646/CLOSED	TRESSER BLVD STAMFORD CT 06901	NON GC	N/A	N/A
	PERMITS	CT DEPT OF TRANSPORTATION GSW001665/MINOR	I-95 EXIT 8 TO EXIT STAMFORD CT	NON GC	N/A	N/A
	PERMITS	DOCK STREET ASSOCIATES GGR000110/MINOR	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	PERMITS	EHRENKRANTZ GROUP P.C., THE SP0000234/MINOR	SHIPPAN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	PERMITS	STAMFORD RAIL STATION / CT DOT GSW001664/MINOR	WASHINGTON BLVD STAMFORD CT	NON GC	N/A	N/A
	PERMITS	TENNESSEE GAS PIPELINE GNG010008/MINOR	MIANUS RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200506029/CLOSED	LONG ISLAND SOUND STAMFORD CT	NON GC	N/A	N/A
	SWL	CTSW-CL-01-139/CLOSED	SHIPPAN AVE STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	SAA 200405289/CLOSED	GUERNSEY RD STAMFORD CT 06901	NON GC	N/A	N/A
	PERMITS	TOTAL GRAPHICS WC0003786/MINOR	0 STAMFORD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200703872/CLOSED	15 VERGIL ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200702417/CLOSED	HOYT ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200700433/CLOSED	RICHMOND HILL RD and ROSE P STAMFORD CT	NON GC	N/A	N/A
	SPILLS	N U 91892/CLOSED	0 RICHMOND HILL AVE STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 961358/CLOSED	0 GREYLOCK PL STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	200600860/CLOSED	TRESSER BLVD STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	SAA 200706084/CLOSED	TRESSER BLVD STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	200707169/CLOSED	TRESSER BLVD STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200102203/CLOSED	ATLANTIC ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	UNKNOWN TRUCK 200009233/CLOSED	MAIN ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	9606010/CLOSED	STATE NORTH ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	200600777/CLOSED	BROAD ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	200706193/CLOSED	PROSPECT ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	200705078/CLOSED	N STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200402238/CLOSED	N STATE ST STAMFORD CT 06901	NON GC	N/A	N/A
	SPILLS	SAA 200406276/CLOSED	LONG RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAME 200601493/CLOSED	CONNECTICUT AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200600760/CLOSED	RTE 1 STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	SAA 200600658/CLOSED	I-95 S EXIT 23 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200507672/CLOSED	BRIERBRAE and HIGHRIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200506488/CLOSED	BONNER CROSS AMELIA ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200308378/CLOSED	NORTH ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200501535/CLOSED	N STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200301514/CLOSED	S END SUB STATION STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200308793/CLOSED	DEN POLE 3298 RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200300000/CLOSED	S END SUB STATION STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAME 9901659/CLOSED	SHELTER ROCK RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAME 200504859/CLOSED	LONG RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAME 200203922/CLOSED	BEECHWOOD and HEMLOCK STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200902624/CLOSED	HOPE STREET and HARTFORD AV STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200502184/CLOSED	W AND BOSTON POST AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200803862/CLOSED	TALYOR AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200904984/CLOSED	HIGH RIDGE RD and HIGH RIDG STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200903590/CLOSED	1090 E MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200903033/CLOSED	ALVORD LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200902630/CLOSED	MAIN ST and BLACHEY RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200902145/CLOSED	WASHINGTON ST and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200606252/CLOSED	75 HUCKLEBERRY HILL STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	SAA 200808034/CLOSED	1 ELCROMFT DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SANTA FUEL 200200954/CLOSED	614 SCOFIELD RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200803596/CLOSED	ATLANTIC and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200803178/CLOSED	WILDWOOD RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200802760/CLOSED	STAMFORD RAILROAD STATION STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200705459/CLOSED	SUMMER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 9702953/CLOSED	W POLE 751 ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200206211/CLOSED	KEMP AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200808088/CLOSED	ATLANTIC BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200302785/CLOSED	POPLAR ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAME 9804544/CLOSED	FAIRFIELD POLE 1776 AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNK 200803161/CLOSED	I-95 N BETWEEN EXIT 9 and E STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNK 200907041/OPEN	51 HIGH BRIDGE BULL HEAD DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNK 91649/CLOSED	E BRANCH STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNK 200007296/CLOSED	PALMERS LANDING, STAMFORD H STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNDETERMINED 9807868/CLOSED	HOOLY POND/NOROWTON RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200107347/CLOSED	W STAMFORD BRANCH BETWEEN B STAMFORD CT	NON GC	N/A	N/A
	SPILLS	TT 200007805/CLOSED	N I-95, OF EXIT STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200400753/CLOSED	MILL RIVER and TRESSER BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200501688/CLOSED	E HOLLY POND MAIN/RTE STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	UNKNOWN 200306895/CLOSED	5 SHIPPAN CUMMINGS PARK STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200107923/CLOSED	CHERRY METRONORTH TRAIN STA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 200900196/CLOSED	W MAIN ST and SMITH ST, NEA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	 200505947/CLOSED	RICHMOND HILL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	UNKNOWN 9804487/CLOSED	HOLLY POND WEED AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	STAMFORD METRO GREEN APTS. CAROL 200806265/CLOSED	HENRY ST and ATLANTIC ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SANTA FUEL COMPANY 200804153/CLOSED	1 STRAWBERRY CT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SCHACHT 9902303/CLOSED	6060 ANCHOR VIEW DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SMITH 200200830/CLOSED	227 REED ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SNET 200202371/CLOSED	DEN RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SPRAGUE ENERGY CO 947576/CLOSED	ATLANTIC ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	UNITED RENTALS 200800118/CLOSED	STAMFORD HOSPITAL STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	STAMFORD HEALTH SYSTEMS MIKE SMERI 200903339/CLOSED	41 WRIGHT ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905257/CLOSED	NORTH STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	STANDARD OIL 200201284/CLOSED	14 STANTON PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	STUDENT TRANSPORTATION OF AMERICA 200905561/CLOSED	328 SELLECK ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SUSAN DAILY 200803966/CLOSED	46 KENNELWORTH DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	TARATINO 200902919/CLOSED	253 MINIDALE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	TARUN MEHTA 200905629/CLOSED	24 SWEET BRIER LANE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	THOMAS GOLDWYN SEPTIC 200204644/CLOSED	SOUNDVIEW BY CUMMINGS BEACH STAMFORD CT 06902	NON GC	N/A	N/A

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	SPILLS	STAMFORD AUTO IMPORTS 200400608/CLOSED	379 JEFFERSON ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	RTHEAST UTILITIES 2276NR	SKINE and BRENTWOOD RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905045/CLOSED	86 CLOVER HILL DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	POSSIBLE MARITIME CENTER(?) 200400749/CLOSED	STAMFORD HARBOR/HARBOR DR/M STAMFORD CT	NON GC	N/A	N/A
	SPILLS	RADIOLOGY OFFICE 200906109/CLOSED	1315 WASHINGTON RADIOLOGY O STAMFORD CT	NON GC	N/A	N/A
	SPILLS	RAZOR AUTOBODY 201000099/OPEN	914 EAST MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	RICK 200502939/CLOSED	E BRANCH OF STAMFORD HARBOR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PLAZA REALTY 956128/CLOSED	1042 MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	ROMANS 10X9 TRUCKING 200804070/CLOSED	RESEARCH DR and GLENBROOK R STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PITTMAN LINDA 200904367/CLOSED	436 HOPE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	RYDER TRUCK RENTAL 945744/CLOSED	I-95 S/B EX 9-10 STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200906291/CLOSED	10 WATER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200906569/CLOSED	SUMMER CROSS OF SIXTH ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200603028/CLOSED	HAMILTON AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200408640/CLOSED	OCEAN DR W and SHIPPEN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200406236/CLOSED	GLENBROOK STA. STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	ROBERT GRIFFEN 200708174/CLOSED	390 LUDLOW AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PAULA KROLL 200906275/CLOSED	80 WINDING BROOK LANE STAMFORD CT	NON GC	N/A	N/A
	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-06905	UNKNOWN CT 06905	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 9374/CLOSED	LINCOLN AVE STAMFORD CT 06902	NON GC	N/A	N/A

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	SPILLS	NORTHEAST UTILITIES 912417/CLOSED	WEST AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 96188/CLOSED	319 POST RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NU 200202575/CLOSED	BEDFORD AND FOREST ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PONUS YACHT CLUB 200107947/CLOSED	STAMFORD HARBOR - OFF BATEM STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PARKING GARAGE ACROSS STREET 9907198/CLOSED	HARBOR VIEW DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200105673/CLOSED	ROXBURY RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	PERFORMANCE MOTORS 200902640/CLOSED	ELM ST and JEFFERSON, PERFO STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PETRO 9803878/CLOSED	OLD MILL LN STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	PETRO FUEL 200101869/CLOSED	PETRO FUEL TERMINAL - HARBO STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PETRO FUEL, INC. 9701392/CLOSED	1465 E PUTNAM AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PETROLEUM HEAT and POWER 943354/CLOSED	4 ROLAND AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	PILGRAM TOWER GEORGE 200906730/CLOSED	25 WASHINGTON COURT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	NU 200300371/CLOSED	SOUNDVIEW AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200905628/CLOSED	HOYT AND WOODWAY ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200804731/CLOSED	N STATE and RAILROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200804683/CLOSED	CHESHIRE BLVD and ATLANTIC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200804682/CLOSED	S STATE ST and WASHINGTON A STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200804095/CLOSED	CONNECTICUT AVE and MYANO A STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200803927/CLOSED	GREY ROCK PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200403593/CLOSED	GLENBROOK SUBSTATION STAMFORD CT 06902	NON GC	N/A	N/A

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	SPILLS	SAA 200905663/CLOSED	CORNER OF ATLANTIC AND BROA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200805281/CLOSED	TRESSER BLVD and WASHINGTON STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905582/CLOSED	OLD HIGHRIDGE AND HIGHRIDGE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905488/CLOSED	GLENBROOK AND ARLINGTON ROA STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905420/CLOSED	27 NORTH HILL ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905385/CLOSED	MAIN AND ATLANTIC ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905395/CLOSED	25 BIG OAK WITH CROSS OF RE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	WORLD WRESTLING ENTERTAINMENT 200905239/CLOSED	128 HAMILTON AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200905709/CLOSED	626 PLUM BROOK ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200906841/CLOSED	HOYT AND DARIEN COURT ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200907038/CLOSED	996 HIGH RIDGE ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200003120/CLOSED	1126 MAIN ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 9904396/CLOSED	WILSON ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 9805983/CLOSED	HAMILTON AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200605652/CLOSED	BAXTER AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200604933/CLOSED	N STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 200804787/CLOSED	SCOFIELDTOWN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 201000032/CLOSED	FIRST STAMFORD PLC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200804968/CLOSED	LONG RIDGE RD STATION, YANK STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200906334/CLOSED	1450 NEWFIELD AVE STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	SAA 200701404/CLOSED	191 BERSKIN RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200704970/CLOSED	690 TRESSER BLVD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200803133/CLOSED	WESTON BLVD and STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200806694/CLOSED	555 GREY ROCK PL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	SAA 200308640/CLOSED	LINCOLN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	SAA 9604670/CLOSED	FAIRFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200906856/CLOSED	SPRAGUE ENERGY STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200403881/CLOSED	WEST LN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9604268/CLOSED	0 RAY STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9604675/CLOSED	JEFFERSON ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	952300/CLOSED	CANAL ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	915479/CLOSED	PACIFIC ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9702270/CLOSED	701 HALLOWELL DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200907229/CLOSED	10 WATER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9902402/CLOSED	LOCKWOOD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200906809/CLOSED	2382 SUMMER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906174/CLOSED	JEFFERSON CANAL ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906172/CLOSED	BONNER AMEILA PLC STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906170/CLOSED	427 WEST AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	926498/CLOSED	RTE 156 STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	UNKNOWN 200904748/CLOSED	W MAIN ST and WEST AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200907129/OPEN	116 MIDLAND AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	201000060/CLOSED	624 HOPE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	91489/CLOSED	CANAL ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	91415/CLOSED	JEFFERSON ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	943006/OPEN	SOUTH ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	93749/CLOSED	WEBB ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	922238/CLOSED	SELLECK ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9702264/CLOSED	701 HALLIWELL DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	201000061/CLOSED	624 HOPE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200403541/CLOSED	75 DARIEN FIELD RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200907400/OPEN	I-95 EXIT 8 OFF RAMP STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200704077/CLOSED	W BROAD ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200009032/CLOSED	S FIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200007191/CLOSED	HARBOR DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9803214/CLOSED	ROXBURY POLE 1382 RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9802637/CLOSED	CANAL ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	201000078/CLOSED	35 VAN BUSKIRD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200600292/CLOSED	5 TOKENEKE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	915230/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A

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	SPILLS	200606602/CLOSED	LONG RIDGE RD and ROCKMAN R STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200606360/CLOSED	CAMP AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200605907/CLOSED	HARBOR ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200604123/CLOSED	STAMFORD RAILROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200504134/CLOSED	I- S BETWEEN EXIT and EXIT STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200601334/CLOSED	43 HARBOR RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200504216/CLOSED	NEWFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200507310/CLOSED	RTE 1 and BISHOP GATE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200507177/CLOSED	RICHMOND HILL and PLINTON A STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200507128/CLOSED	HIGH RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200506718/CLOSED	104 WALLACHS POINT RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200506424/CLOSED	S STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200506217/CLOSED	GLENNBROOK RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200601763/CLOSED	ATLANTIC SQ and MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200505438/CLOSED	DOWNS AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200403224/CLOSED	HIGH RIDGE DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200402165/CLOSED	BULLS HEAD RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200402164/CLOSED	KNOWL ST and NEW FIELD AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200308387/CLOSED	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200401130/CLOSED	ATLANTIC SQ STAMFORD CT	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

TOTAL: 1031 **GEOCODED:** 336 **NON GEOCODED:** 695 **SELECTED:** 47

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	200608172/CLOSED	GEURNEZY ST and STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200304021/CLOSED	SELLECK POLE NUMBER 6661 ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9902541/CLOSED	GLENN BROOK RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200505354/CLOSED	URBAN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200505299/CLOSED	LONG RIDGE RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200505132/CLOSED	SELLICK AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200504893/CLOSED	STATE ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200504868/CLOSED	RTE 1 EXIT 15 STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200504286/CLOSED	6900 MAIN ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200401065/CLOSED	S STATE ST/ATLANTIC ST/CONN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9905200/CLOSED	WESTOVER RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9804227/CLOSED	LONGRIDGE RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200207441/CLOSED	CHERRY ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200206668/CLOSED	CROSBY ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200206665/CLOSED	CROSBY and AUSTIN BLVD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200206139/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200306805/CLOSED	SELLECK ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9905722/CLOSED	HALLOWEEN BOULAVARD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200306920/CLOSED	POND RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	9904345/CLOSED	HAMILTON AND GREENWICH RD STAMFORD CT 06902	NON GC	N/A	N/A

Environmental FirstSearch
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	SPILLS	200702693/CLOSED	EAST AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200606975/CLOSED	BLACHEY RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200606532/CLOSED	SHIPPAN AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200606526/CLOSED	CANAL ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200605054/CLOSED	SEASIDE AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200202527/CLOSED	POLE 3276 GLENNBROOK RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200600514/CLOSED	CONNECTICUT AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200906154/CLOSED	SOMMERS AND 2ND AVE STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200906725/CLOSED	77 DELEO DR STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200907086/CLOSED	15 FOWLER ST STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200907348/CLOSED	248 CEDAR HEIGHTS ROAD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200707093/CLOSED	HAMILTON AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200300528/CLOSED	WILLIAMS POLE 2867 ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200602684/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200201162/CLOSED	DEN POLE 7543 RD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200600319/CLOSED	EUCLIDE AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200600107/CLOSED	N STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200404173/CLOSED	I-95 S BETWEEN EXIT 8 and E STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200402118/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200401155/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 43 STATION PL
STAMFORD CT 06902

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Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	200308016/CLOSED	SOUTHFIELD AVE STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200707040/CLOSED	N STATE RAIL RD STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	214820/UNKNOWN (NRC)	STAMFORD HARBOR EASTERN MOS STAMFORD CT	NON GC	N/A	N/A
	RELEASES	WEST BRANCH STAMFORD HARBOR < MILL NRC-582867/UNKNOWN SHEEN	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	YAHT HAVEN WEST CHANNEL OF LONG NRC-844127/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	618885.00/XX	LARKIN REAR OF OFFICE COMPL STAMFORD CT	NON GC	N/A	N/A
	RELEASES	632400.00/H	VINE AND BRANDY WINE RD STAMFORD CT	NON GC	N/A	N/A
	RELEASES	639274.00/F	WESTOVER RD STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200604159/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	202062/UNKNOWN (NRC)	W STAMFORD HARBOR BRANCH STAMFORD CT	NON GC	N/A	N/A
	RELEASES	REINAUER TRANSPORTATION 356239/XO	GENOVESE OIL COMPANY LONG I STAMFORD CT	NON GC	N/A	N/A
	RELEASES	NRC-545097/MOBILE	N I-95 NORTHBOUND OF EXIT STAMFORD CT	NON GC	N/A	N/A
	RELEASES	383321/UNKNOWN (NRC)	SOUTHFIELD AVE STAMFORD CT	NON GC	N/A	N/A
	RELEASES	330578/UNKNOWN (NRC)	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	271514/UNKNOWN (NRC)	NOROTON RIVER STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9902930/CLOSED	N STATE AND GREENWICH ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	NORTHEAST UTILITIES 913753/CLOSED	ROXBURY RD STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	172025/UNKNOWN (NRC)	STAMFORD HARBOR YACHT HAVEN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	EAST BRANCH OF STAMFORD HARBOR NRC-758726/UNKNOWN SHEEN	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	SPILLS	9807377/CLOSED	PALMER HILL RD STAMFORD CT 06902	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

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STAMFORD CT 06902

JOB: 07-2097.B20

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	SPILLS	200110778/CLOSED	S STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200109130/CLOSED	SOUNDVIEW POLE 6973 DR STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200106439/CLOSED	N STATE ST STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	200105445/CLOSED	WASHINGTON BLVD STAMFORD CT 06902	NON GC	N/A	N/A
	SPILLS	956858/CLOSED	VAN BUSKIRK/PARK ST STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	SPRAGUE ENERGY FACILITY UNKNOWN NRC-925069/VESSEL	SPRAGUE ENERGY FACILITY UNK STAMFORD CT	NON GC	N/A	N/A
	RELEASES	BETWEEN STAMFORD STREET AND THE Oa NRC-873002/UNKNOWN SHEEN	BETWEEN STAMFORD ST and THE STAMFORD CT	NON GC	N/A	N/A
	RELEASES	SCOONER COVE MARINA NRC-811707/VESSEL	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	EKLOFF MARINE 161591/MARINE- RELEASED FRO	HERBERY FUEL CO AT THE PIER STAMFORD CT	NON GC	N/A	N/A
	RELEASES	F/V SHAMROCK III 293951/MARINE- RELEASED FRO	LONG ISLAND SOUND OFF OF ST STAMFORD CT	NON GC	N/A	N/A
	RELEASES	HWY 195 BETWEEN EXIT 7 AND 6 NRC-518510/MOBILE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	INTERSATE 95 NRC-566206/MOBILE	UNKNOWN STAMFORD CT	NON GC	N/A	N/A
	RELEASES	REINAUER TRANSPORT CO 332063/MARINE- RELEASED FRO	HERBERT FUEL STAMFORD CT	NON GC	N/A	N/A
	SPILLS	200603789/CLOSED	COVE RD STAMFORD CT 06902	NON GC	N/A	N/A
	RELEASES	10 WATER STREET NRC-925081/VESSEL	10 WATER ST STAMFORD CT	NON GC	N/A	N/A

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 217 **DIST/DIR:** 0.01 NE **ELEVATION:** 30 **MAP ID:** 1

NAME:
ADDRESS: STATION PL
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200706681
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 10/16/2007
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 10/16/2007 10:51:58 AM
REPORTED BY: CAROL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: HYDRAULIC OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES:

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 222 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: STATION PL
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200305790
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 8/6/2003
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 8/6/2003 8:26:50 PM
REPORTED BY: CAL MARTIN
REPORTER S PHONE: 3489144

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: OTHER

EMERGENCY MEASURES: ANTIFREEZE LEAK, FROM OVERHEAT, NO WATER, SPEEDY DRIED

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 31 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: METRO NORTH COMMUTER RR
ADDRESS: N METRO RR STAMFORD RAIL YARD TR
STAMFORD CT 06902
FAIRFIELD
CONTACT:

REV: 10/24/97
ID1: 558967
ID2:
STATUS: RAILROAD
PHONE:

SPILL INFORMATION
DATE OF SPILL: 10/24/97 **TIME OF SPILL:** 1420

PRODUCT RELEASED (1): OIL, MISC: TRANSFORMER (430 PPM
QUANTITY (1): 1
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: BALLAST/SOIL

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: RELEASE WAS SECURED/CONTRACTOR AMERICAN ENV TECH WAS HIRED BY RR TO MITIGATE/APPLIED ABSORBENT PADS/NO ONE RESPONDED FROM CTDEP
RELEASE DETECTION: RAIL CAR TRANSFORMER ELECTRICAL SYSTEM SHORTED CAUSING A RELEASE
MISC. NOTES: WILL NTFY DEP/CALLED MCHALE LEFT MESSAGE TO CALL BACK/VERDONE CALLED CTDEP LEFT MESSAGE

DISCHARGER INFORMATION
DISCHARGER ID: 558967
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: METRO NORTH COMMUTER RR
ADDRESS: 347 MADISON AVE
NEW YORK NY 10017

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 32 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: METRO NORTH COMMUTER RR
ADDRESS: N METRO RR STAMFORD RAIL YARD TR
STAMFORD CT 06902
FAIRFIELD
CONTACT:

REV: 06-23-98
ID1: 556262
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: OIL, MISC: TRANSFORMER (430 PPM **QUANT:** 1 GALLONS

LOCATION: METRO NORTH RR STAMFORD RAIL YARD TRACK 14
CITY: NEW YORK NY 10017 **REPORTED:** 10/24/97

SOURCE: UNKNOWN **MEDIUM:** LAND
RAIL CAR TRANSFORMER / ELECTRICAL SYSTEM SHORTED CAUSING A RELEASE
CAUSE: UNKNOWN

ACT: RELEASE WAS SECURED / A CONTRACTOR WAS HIRED TO MITIGATE
BY:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 33 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: METRO NORTH RAILROAD
ADDRESS: EPA I STAMFORD YARD
STAMFORD CT 06902
FAIRFIELD
CONTACT:

REV: 11/12/97
ID1: 560067
ID2:
STATUS: RAILROAD
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/12/97 **TIME OF SPILL:** 0200

PRODUCT RELEASED (1): OIL, MISC: TRANSFORMER NON PCB
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: LAND

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	YES	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEAN-UP TEAM STANDING BY UNTIL TRACK IS CLEAR WILL START AT 11:00
RELEASE DETECTION: RAIL PASSENGER CAR TRANSFORMER STRUCK OBJECT IN PATH CAUSING PUNCTURE
MISC. NOTES: TRAIN WAS EASTBOUND ON TRACK 10 / SPEED UNKNOWN/ WILL NOTIFY CTDEP 09:50 VERDONE CALL CTDEP and SPOKE WITH RON WOFFORD/RON CHECKED THE LOG AND CTDEP DID RECEIVE A NOTICE OF THE SPILL.

DISCHARGER INFORMATION
DISCHARGER ID: 560067
TYPE OF DISCHARGER: LOCAL GOVERNMENT
NAME OF DISCHARGER: METRO NORTH RAILROAD
ADDRESS: 347 MADISON AVE
NEW YORK NY 10014

DUN and BRADSTREET :

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 34 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	MILEPOST 34 STAMFORD YARD	**REV:**	12/31/02
ADDRESS:		**ID1:**	NRC-621018
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD
CONTACT:	CASEY O CONNOR	**PHONE:**	2123402051

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED:	26-AUG-02	**DATE COMPLETE:**	26-AUG-02
CALL TAKER:	SAB0135	**CALL TYPE:**	INC

RESPONSIBLE PARTY: CASEY O CONNOR
PHONE 1: 2123402051 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: METRO NORTH COMMUTER RR
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: GRAND CENTRAL TERMINAL
NEW YORK NY 10017

INITIALLY REPORTED BY: TELEPHONE
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF:
SOURCE:

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE CALLER REPORTED THAT 2 CARS FROM A PASSENGER TRAIN IN STAMFORD RAILYARD DERAILED DUE TO RAIL SPREAD. BOTH CARS WERE EMPTY AND NO MATERIAL WAS RELEASED.

INCIDENT TYPE:	RAILROAD	**INCIDENT CAUSE:**	OTHER
INCIDENT DATE:	26-AUG-02	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	
POTENTIAL_FLAG:	Y	**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:	N	**LNG FLAG:**	
AIRCRAFT TYPE:	UNKNOWN	**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	UNKNOWN	**POWER GEN FACILITY:**	U
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U

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Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 34 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: MILEPOST 34 STAMFORD YARD
ADDRESS:
STAMFORD CT 06902
FAIRFIELD
CONTACT: CASEY O CONNOR

REV: 12/31/02
ID1: NRC-621018
ID2:
STATUS: RAILROAD
PHONE: 2123402051

PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	NEW HAVEN
RAILROAD MILEPOST:	34	**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			
DESCRIPTION OF TANK:			
OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	RAIL REPORT (N/A)	**ADDTL MEDIUM INFO:**	NO
MATERIAL RELEASED			
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	U
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	NO REPORT	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:		**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	

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Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 34 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	MILEPOST 34 STAMFORD YARD	**REV:**	12/31/02
ADDRESS:		**ID1:**	NRC-621018
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD
CONTACT:	CASEY O CONNOR	**PHONE:**	2123402051

WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: CARS WILL BE RERAILED IN THE MORNING

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	CDOT
FED AGENCY NOTIFIED:		**STRUCTURE NAME:**	
TYPE OF STRUCTURE:		**ALLISION:**	
STRUCTURE OPERATIONAL:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:	N	**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:		**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: CALLER HAD NO ADDITIONAL INFORMATION.

MATERIAL INFORMATION

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

TRAIN NAME/NUMBER:	N/A	**RAILROAD NAME:**	METRO NORTH COMMUTER RR
TRAIN TYPE:	PASSENGER	**TRACK SPEED:**	
TRAIN SPEED:		**TRAIN DIRECTION:**	
NUMBER OF LOCOMOTIVES:		**NUMBER OF CARS:**	
NUMBER DERAILED:		**NON COMPLIANCE WITH HAZMAT:**	N

TRAIN NAME/NUMBER:	N/A	**CAR NUMBER:**	8733
POSITION IN TRAIN:		**DERAILED TYPE:**	CAR
CAR CONTENT:	EMPTY		

TRAIN NAME/NUMBER:	N/A	**CAR NUMBER:**	8732
POSITION IN TRAIN:		**DERAILED TYPE:**	CAR
CAR CONTENT:	EMPTY		

VESSEL INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 175 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: SAME
ADDRESS: STAMFORD RR STATION
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200104072
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 6/8/2001
TIME OF RELEASE: 10:00:00 AM
ACTION: SANDED

DISHCHARGER: SAME

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 6/8/2001 1:42:31 PM
REPORTED BY: CARL JAPLONSKI
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 2 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES: CLEANED

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 171 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: SAA
ADDRESS: RAILROAD STATION
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200401136
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 2/24/2004
TIME OF RELEASE:
ACTION: CLEANED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 2/24/2004
TIME OF RELEASE:
ACTION: REMOVED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 2/24/2004
TIME OF RELEASE:
ACTION: CONTAINED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 2/24/2004 8:44:27 AM
REPORTED BY: CAROL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: MOTOR OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: TRANSFER LINE FAILURE

EMERGENCY MEASURES: CLEANED AND REMOVED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 168 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: SAA
ADDRESS: STAMFORD RAILROAD STATION PARKING LO
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200006518
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 8/31/2000
TIME OF RELEASE:
ACTION: REMOVED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 8/31/2000
TIME OF RELEASE:
ACTION: CONTAINED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 8/31/2000 9:14:15 AM
REPORTED BY: DANIEL KANE
REPORTER S PHONE: 3277433

MATERIAL RELEASED: MOTOR OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: SEEPAGE

EMERGENCY MEASURES: CONTAINED AND REMOVED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 228 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: RAILROAD STATION WASHINGTON BLVD
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 9807547
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 11/3/1998
TIME OF RELEASE: 3:47:00 PM
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 11/3/1998
TIME OF RELEASE: 3:47:00 PM
ACTION: CLEANED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 11/3/1998 6:04:44 PM
REPORTED BY: CT TRANSIT/ PETER HOPWOOD
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 7 GAL

CAUSE OF INCIDENT: OTHER

EMERGENCY MEASURES: SPEEDY DRIED, CLEANED

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 227 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: STAMFORD TRAIN STATION
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200003758
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 5/30/2000
TIME OF RELEASE: 10:21:00 PM
ACTION: OTHER

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 10:21:00 PM
REPORTED BY: MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: GASOLINE
QUANTITY SPILLED: 7 GAL

CAUSE OF INCIDENT: OTHER

EMERGENCY MEASURES: SPEEDY DRYED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 226 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: SOUTH STAMFORD RAILROAD STATION/ STA
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200104693
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 6/26/2001
TIME OF RELEASE:
ACTION: CLEANED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 6/26/2001
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 6/26/2001 7:56:56 PM
REPORTED BY: CARL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 8 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES: ATLANTIC ST AND EAST MAIN ST WERE ALSO AFFECTED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 30 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: JUST SHORT OF SAMPFORD STATION
ADDRESS: MILEPOST: CP234 TRACK THREE NEW HAVE
STAMFORD CT 06902
FAIRFIELD
CONTACT: UNKNOWN

REV: 12/31/02
ID1: NRC-612035
ID2:
STATUS: RAILROAD NON-RELEASE
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED:	19-JUN-02	**DATE COMPLETE:**	19-JUN-02
CALL TAKER:	NGB8826	**CALL TYPE:**	INC

RESPONSIBLE PARTY: UNKNOWN
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY:
ORGANIZATION TYPE: UNKNOWN

ADDRESS:
XX

INITIALLY REPORTED BY: TELEPHONE
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF:
SOURCE:

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE METRO TRAIN STOPPED JUST SHORT OF STAMFORD STATION, WHEN PASSSENGERS STARTED JUMPING OFF THE TRAIN THINKING A FIRE HAD BROKE OUT WHEN IT REALLY WAS JUST AN EXTINGUISHER THAT HAD FELL AND JAMMED UP IN THE OPEN POSITION.

INCIDENT TYPE:	RAILROAD NON-RELEASE		**INCIDENT CAUSE:** UNKNOWN
INCIDENT DATE:	19-JUN-02	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	
POTENTIAL_FLAG:	N	**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:	N	**LNG FLAG:**	
AIRCRAFT TYPE:	UNKNOWN	**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	UNKNOWN	**POWER GEN FACILITY:**	U
GENERATING CAPACITY:		**TYPE OF FUEL:**	

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 30 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: JUST SHORT OF SAMPFORD STATION
ADDRESS: MILEPOST: CP234 TRACK THREE NEW HAVE
STAMFORD CT 06902
FAIRFIELD
CONTACT: UNKNOWN

REV: 12/31/02
ID1: NRC-612035
ID2:
STATUS: RAILROAD NON-RELEASE
PHONE:

NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	NEW HAVEN LINE
RAILROAD MILEPOST:	CP 234	**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			
DESCRIPTION OF TANK:			
OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	RAIL REPORT (N/A)	**ADDTL MEDIUM INFO:**	
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:		**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:		**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 30 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: JUST SHORT OF SAMPFORD STATION
ADDRESS: MILEPOST: CP234 TRACK THREE NEW HAVE
STAMFORD CT 06902
FAIRFIELD
CONTACT: UNKNOWN

REV: 12/31/02
ID1: NRC-612035
ID2:
STATUS: RAILROAD NON-RELEASE
PHONE:

WATER SUPPLY CONTAM: U
SHEEN SIZE:
SHEEN COLOR:
DIR OF SHEEN TRAVEL:
SHEEN ODOR DESCRIPTION:
WAVE CONDITION:
CURRENT SPEED:
CURRENT DIRECTION:
WATER TEMPERATURE:

DESC OF REMEDIAL ACTION: DENERGIZED THE OVERHEAD WIRE FOR FIRE RAIL RIGHT OF WAY

EMPL FATALITY:
PASS FATALITY:
COMMUNITY IMPACT: N
WIND SPEED UNITS:
EMPLOYEE INJURIES:
PASSENGER INJURIES:
OCCUPANT FATALITY:
CURRENT SPEED UNITS:
ROAD CLOSURE UNITS:
TRACK CLOSURE UNITS:
SHEEN SIZE UNITS:
STATE AGENCY NOTIFIED:
FED AGENCY NOTIFIED:
STRUCTURE NAME:
TYPE OF STRUCTURE:
ALLISION:
STRUCTURE OPERATIONAL:
NEAREST RIVER MILE MARK:
SHEEN SIZE LENGTH: N
SHEEN SIZE LENGTH UNITS:
SHEEN SIZE WIDTH:
SHEEN SIZE WIDTH UNITS:
OFFSHORE:
DURATION UNIT:
RELEASE RATE UNIT:
RELEASE RATE RATE:

ADDITIONAL INFO: EIGHT PASSENGERS WERE TREATED AND RELEASED ON SCENE.

MATERIAL INFORMATION

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

TRAIN NAME/NUMBER: 1513
RAILROAD NAME: METRO NORTH RAILROAD
TRAIN TYPE: PASSENGER
TRACK SPEED:
TRAIN SPEED:
TRAIN DIRECTION: W
NUMBER OF LOCOMOTIVES:
NUMBER OF CARS: 9
NUMBER DERAILED:
NON COMPLIANCE WITH HAZMAT: N

VESSEL INFORMATION

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 224 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: NORTH RAIL STATION, STATE ALSO ATLAN ST
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200300283
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 1/16/2003
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 1/16/2003
TIME OF RELEASE:
ACTION: REMOVED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 1/16/2003 10:55:54 PM
REPORTED BY: CAL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: MOTOR OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: OTHER

EMERGENCY MEASURES: APPROXIMATELY 1 GALLON TOTAL AT THE 2 ABOVE LOCATIONS, IT WAS SPEEDY DRIED AND REMOVED, NO WATER

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 223 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: SOUTH STATE RAILROAD STATION ST
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200300689
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 2/4/2003
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 2/4/2003 10:48:18 PM
REPORTED BY: MARTIN CAROL
REPORTER S PHONE: 3277433

MATERIAL RELEASED: MOTOR OIL
QUANTITY SPILLED: 2 GAL

CAUSE OF INCIDENT: MV ACCIDENT

EMERGENCY MEASURES: SANDED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 53 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: STANFORD RAILROAD STATION
ADDRESS: STATE ST
STANFORD CT
FAIRFIELD
CONTACT: CAROL MARTIN

REV: 12/31/04
ID1: NRC-714298
ID2:
STATUS: MOBILE
PHONE: 2033489144

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 2/25/2004 6:47:47 AM **DATE COMPLETE:** 2/25/2004 6:52:57 AM
CALL TAKER: JVT9878 **CALL TYPE:** INC

RESPONSIBLE PARTY: CAROL MARTIN
PHONE 1: 2033489144 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: CT TRANSIT
ORGANIZATION TYPE: OTHER

ADDRESS: 26 ELM CT.
STANFORD CT 06902

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE MATERIAL SPILLED FROM A TRANSIT BUS ENGINE DUE TO AN OIL LINE RUPTURING.

INCIDENT TYPE: MOBILE **INCIDENT CAUSE:** EQUIPMENT FAILURE
INCIDENT DATE: 2/24/2004 9:10:00 PM **INCIDENT DATE DESC:** OCCURRED
DISTANCE FROM CITY: **DISTANCE UNITS:**
DIRECTION FROM CITY: **LOCATION SECTION:**
LOCATION TOWNSHIP: **LOCATION RANGE:**

AIRCRAFT TYPE: **AIRCRAFT MODEL:**
AIRCRAFT ID: **AIRCRAFT FUEL CAPACITY:**
AIRCRAFT FUEL CAPACITY UNITS: **AIRCRAFT FUEL ON BOARD:**
AIRCRAFT FUEL ON BOARD UNITS: **AIRCRAFT SPOT NUMBER:**
AIRCRAFT HANGER: **AIRCRAFT RUNWAY NUM:**
ROAD MILE MARKER: **BUILDING ID:**
TYPE OF FIXED OBJECT: **POWER GEN FACILITY:** UNKNOWN
GENERATING CAPACITY: **TYPE OF FUEL:**
NPDES: **NPDES COMPLIANCE:** UNKNOWN
PIPELINE TYPE: **DOT REGULATED:** UNKNOWN
PIPELINE ABOVE GROUND: ABOVE **EXPOSED UNDERWATER:** NO
PIPELINE COVERED: UNKNOWN **GRADE CROSSING:** NO
LOCATION SUBDIVISION: **RAILROAD MILEPOST:**
TYPE VEHICLE INVOLVED: **CROSSING DEVICE TYPE:**
DEVICE OPERATIONAL: YES

DOT CROSSING NUMBER: **BRAKE FAILURE:** NO
TANK ABOVE GROUND: ABOVE **TRANSPORTABLE CONTAINER:** UNKNOWN

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 53 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	STANFORD RAILROAD STATION	**REV:**	12/31/04
ADDRESS:	STATE ST	**ID1:**	NRC-714298
	STANFORD CT	**ID2:**	
	FAIRFIELD	**STATUS:**	MOBILE
CONTACT:	CAROL MARTIN	**PHONE:**	2033489144

TANK REGULATED:	UNKNOWN	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	NO	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	UNKNOWN
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:	YES	**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	NO	**FIRE EXTINGUISHED:**	UNKNOWN
ANY EVACUATIONS:	NO	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	NO	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	NO
NUMBER FATALITIES:		**ANY DAMAGES:**	NO
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	NO
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	NO	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	NO
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	NO
TRACK CLOSED:	NO	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	WATER	**ADDTL MEDIUM INFO:**	STORM SEWER
BODY OF WATER:	STORM DRAIN	**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	YES
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	NO REPORT	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	UNKNOWN	**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	NO	**SHEEN SIZE:**	
SHEEN COLOR:	UNKNOWN	**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: ABSORBENTS APPLIED TO THE PAVEMENT, THE MATERIAL IN THE STORM DRAIN COULD NOT BE RECOVERED BY CT TRANSIT CREWS, CONTRACTOR CONTACTED (UNITED INDUSTRIAL SERVICES)

EMPL FATALITY: **PASS FATALITY:**

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 53 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	STANFORD RAILROAD STATION	**REV:**	12/31/04
ADDRESS:	STATE ST	**ID1:**	NRC-714298
	STANFORD CT	**ID2:**	
	FAIRFIELD	**STATUS:**	MOBILE
CONTACT:	CAROL MARTIN	**PHONE:**	2033489144

COMMUNITY IMPACT:	NO	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	DEP
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: THE CALLER HAD NO ADDITIONAL INFORMATION.

MATERIAL INFORMATION

CHRIS CODE:	OMT	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	YES

NAME OF MATERIAL: OIL, MISC: MOTOR
AMOUNT OF MATERIAL: 6 GALLON(S)
AMOUNT IN WATER: 0 UNKNOWN AMOUNT

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 214 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: N METRO STAMFORD RAIL YARD
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 9706164
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 10/24/1997
TIME OF RELEASE: 3:34:00 PM
ACTION: CONTAINED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 10/24/1997 5:23:38 PM
REPORTED BY: KEN MCHALE
REPORTER S PHONE: 8407510

MATERIAL RELEASED: TRANSFORMER OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: OTHER

EMERGENCY MEASURES: ABSORBANT PADS, AMERICAN ENVIRONMENTAL TECH. - 430 PPM

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 147 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: CT TRANSIT
ADDRESS: STATE ST
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200508624
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 12/23/2005
TIME OF RELEASE: 6:00:00 PM
ACTION: SANDED

DISHCHARGER: CT TRANSIT

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 12/23/2005
TIME OF RELEASE: 6:00:00 PM
ACTION: OTHER

DISHCHARGER: CT TRANSIT

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 12/23/2005
TIME OF RELEASE: 6:00:00 PM
ACTION: CLEANED

DISHCHARGER: CT TRANSIT

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 12/23/2005 9:47:19 PM
REPORTED BY: DANIEL KANE
REPORTER S PHONE: 3489144

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: CONTAINER FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 146 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: CT TRANSIT
ADDRESS: STATE ST
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200400845
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 2/9/2004
TIME OF RELEASE: 11:30:00 AM
ACTION: CONTAINED

DISHCHARGER: CT TRANSIT
26 ELM CT
STAMFORD CT 06904

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 2/9/2004
TIME OF RELEASE: 11:30:00 AM
ACTION: CLEANED

DISHCHARGER: CT TRANSIT
26 ELM CT
STAMFORD CT 06904

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 2/9/2004
TIME OF RELEASE: 11:30:00 AM
ACTION: REPAIRED LINE

DISHCHARGER: CT TRANSIT
26 ELM CT
STAMFORD CT 06904

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 2/9/2004 2:39:09 PM
REPORTED BY: DAN KANE
REPORTER S PHONE: 3277433

MATERIAL RELEASED: DIESEL FUEL
QUANTITY SPILLED: 2 GAL

CAUSE OF INCIDENT: TRANSFER LINE FAILURE

EMERGENCY MEASURES: BUS FUEL LINE LEAKED

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 219 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: N STATE ST and RAILROAD STATION
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200602625
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 5/5/2006
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 5/5/2006
TIME OF RELEASE:
ACTION: OTHER

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 5/5/2006 4:07:33 PM
REPORTED BY: CAROL MARTIN - EXT. 431
REPORTER S PHONE: 3277433

MATERIAL RELEASED: HYDRAULIC OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 220 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: STAMFORD RAILROAD STATION
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200403664
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 6/4/2004
TIME OF RELEASE: 9:00:00 AM
ACTION: REMOVED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 6/4/2004
TIME OF RELEASE: 9:00:00 AM
ACTION: CONTAINED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 6/4/2004 11:33:41 AM
REPORTED BY: DANIEL KANE
REPORTER S PHONE: 3489144

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES: CONTAINED AND REMOVED

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 221 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: STAMFORD RAILD STATION LOT
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200402163
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 4/9/2004
TIME OF RELEASE:
ACTION: CLEANED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 4/9/2004
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 4/9/2004 1:56:29 PM
REPORTED BY: DANIEL KANE
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ENGINE OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: CONTAINER FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 157 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: METRO NORTH RAILROAD
ADDRESS: STAMFORD RR STATION
STAMFORD CT 06902
FAIRFIELD
CONTACT: METRO NORTH RAILROAD

REV: 3/13/01
ID1: 911225
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

INSPECTOR S BADGE NUMBER: 921
REPORT DATE: 04/03/91 **REPORT TIME:** 17
ACTUAL TIME: 2
REPORTER: KEN MC HALE
METRO NORTH RR

WORK PHONE: 914 271 369
HOME PHONE:
POLE NUMBER:
INCIDENT TYPE: PETROLEUM **DISCHARGED:** TRANSFORMER OIL (PCB) and DIESEL
GALLONS: 140 **YARDS:**
POUNDS: **CON:**
DRUMS: **FEDRAL:**
CERCLA: **ACROSS PROPERTY LINES:**
EMERGENCY CLEANUP: **REP QUAN:**
TOTAL POUNDS:

DESCRIPTION:

DATE: 04/03/91 **DATE UNKNOWN:**
CONTINUOUS SPILL: Y **SPILL TIME:** 160
RELEASE TERMINATED: Y **ONGOING RELEASE:**
UNKNOWN: Y **CONTAINED:** Y

ADDITIONAL INFORMATION: TRANSFORMER OIL STARTS IN STAMFORD GOES TO FAIRFIELDDIESEL STARTS IN BRIDGEPORT UNK OF EXACT AMT and AREAS EFFECTED

WATERBODY: **RIVER:**
LIS: **TRIBUTARY:**
CATCH BASIN: **POND:**
AIR: **SURFACE WATER:** Y
GROUND WATER: **GROUND SURFACE:**
INSIDE BUILDING: **OTHER AREA:**
TOTAL IN WATER: **TOTAL RECOVERED FROM WATER:**
TOTAL RECOVERED:
RESPONSIBLE PARTY: METRO NORTH RAILROAD

PHONE: **ACCEPT RESPONSIBILITY:** Y
POLLUTER UNKNOWN:
CLEANUP ACTION TAKEN: REMOVE OIL SOAKED ROCKS/SOIL APPRX 200 BAGS
DUN BRAD: **NOTIFIED FEDERAL GOVERNMENT:**
NOTIFIED COAST GAURD: **NOTIFIED FIRE MARSHALL:**
NOTIFIED LOCAL FIRE DEPT: **NOTIFIED POLICE:**
NOTIFIED ATTORNEY GENERAL: **NOTIFIED AQUACULTURE:**
NOTIFIED STATE DOHS: **NOTIFIED STATE WATER BUREAU:**

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Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 157 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: METRO NORTH RAILROAD
ADDRESS: STAMFORD RR STATION
STAMFORD CT 06902
FAIRFIELD
CONTACT: METRO NORTH RAILROAD

REV: 3/13/01
ID1: 911225
ID2:
STATUS: CLOSED
PHONE:

NOTIFIED STATE AIR BUREAU:
NOTIFIED WEED HAZ WASTE:
PERMITTING NOTIFIED:
NOTIFIED SOLID WASTE RECOVERY:
NOTIFIED P-F:
NOTIFIED OPS:
NOTIFIED STATE AGENCIES:
NOTIFICATION TIME:
NOTIFIED STATE WASTE BUREAU:
NOTIFIED WEED SOLID WASTE:
NOTIFIED UST UNIT:
NOTIFIED ENVIRONMENTAL CONSERVATION:
NOTIFIED F-W:
NOTIFIED OTHER:
NOTIFICATION DATE:

DISCHARGE CLASS: TRANSPORTATION

CAUSE: OTHER RUPTURED TANKS

CORRECTIVE ACTION TAKEN: SOIL REMOVAL

CONTRACTOR:
DID DEP HIRE CONT:
WHEN CONT REQUESTED:
ARRIVED:
RECEIVED BY: KELLEY
ASSIGNED DATE: 04/03/91
NOT 911 EMERGENCY:
CT EMERGENCY SPILLFUND USED:
CASE NUMBER 2:
PIN:
INC CODE:
OTHER OWNER:
PROP NAME:
CONT NAME:
HIRE DATE:
SECOND REQUEST:
ARRIVED SECOND TIME:
BADGE NUMBER: 921
ASSIGNED TIME: 17 5
NOTIFICATION STATUS:
CASE NUMBER:
FED GOV PAID:
COST RECOVERY EXPENDITURE:
PROPERTY OWNER:

WAS POLLUTER A TRUCK:
OWNER OF TRUCK/TRAILER:
OPERATORS NAME:
VEHICLE MODEL:
TRAILER REGISTRATION:
DATE UPDATED: 04/04/91
QUAN FET:
WAS POLLUTER A TRAILER:
OWNERS NAME:
MAKE OF VEHICLE:
TRUCK REGISTRATION:
UPDATED WITH INSPECTORS REPORT: Y
COPY: P

MISCELLANEOUS INFORMATION: TRAIN RUPTURED TANKS WHICH RESULTED IN LOSS OF DIESEL and PCB OIL AET HIRED TO REMOVE STAINED ROCKS and SOIL ALONG THE ROAD STAMFORD TO BRIDGEPORT

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 237 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: RAILROAD STATION
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200000708
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 2/3/2000
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 2/3/2000 11:51:50 PM
REPORTED BY: CT TRANSIT
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 6 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES: SPEEDY DRY

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 218 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: STAMFORD RAILROAD STATION
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200607389
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 11/20/2006
TIME OF RELEASE:
ACTION: OTHER

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 11/20/2006 5:37:57 AM
REPORTED BY: CT TRANSIT
REPORTER S PHONE: 3277433

MATERIAL RELEASED: TRANSMISSION OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 225 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: NORTH STATE ST/ RAILROAD STATION
STAMFORD CT

CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200103282
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 5/14/2001
TIME OF RELEASE:
ACTION: REMOVED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 5/14/2001
TIME OF RELEASE:
ACTION: CLEANED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 5/14/2001
TIME OF RELEASE:
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 5/14/2001
TIME OF RELEASE:
ACTION: CONTAINED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 225 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:
ADDRESS: NORTH STATE ST/ RAILROAD STATION
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200103282
ID2:
STATUS: CLOSED
PHONE:

REPORT TIME: 5/14/2001 7:32:41 PM
REPORTED BY: CAROL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: ANTIFREEZE
QUANTITY SPILLED: 15 GAL

CAUSE OF INCIDENT: VALVE FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 27 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME: 103 ENGINE
ADDRESS: STANFORD YARD
STAMFORD CT 06902
FAIRFIELD
CONTACT: STEVEN NEVILLE

REV: 12/31/02
ID1: NRC-632843
ID2:
STATUS: RAILROAD NON-RELEASE
PHONE: 2123402050

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 28-DEC-02 **DATE COMPLETE:** 28-DEC-02
CALL TAKER: CGN5642 **CALL TYPE:** INC

RESPONSIBLE PARTY: STEVEN NEVILLE
PHONE 1: 2123402050 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: METRO NORTH RAILROAD
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 89 E 42ND GRAND CENTRAL TERMINAL
NEW YORK NY 10017

INITIALLY REPORTED BY: TELEPHONE
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF:
SOURCE:

INCIDENT INFORMATION

INCIDENT DESCRIPTION: UPRIGHT DERAILMENT OF A LOCOMOTIVE DUE TO UNKNOWN CAUSE

INCIDENT TYPE:	RAILROAD NON-RELEASE	**INCIDENT CAUSE:**	UNKNOWN
INCIDENT DATE:	28-DEC-02	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	
POTENTIAL_FLAG:	N	**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:	N	**LNG FLAG:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:		**POWER GEN FACILITY:**	U
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 27 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	103 ENGINE	**REV:**	12/31/02
ADDRESS:	STANFORD YARD	**ID1:**	NRC-632843
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD NON-RELEASE
CONTACT:	STEVEN NEVILLE	**PHONE:**	2123402050

PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	
RAILROAD MILEPOST:		**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:		**ADDTL MEDIUM INFO:**	
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	NO REPORT	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:		**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	

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Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 27 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	103 ENGINE	**REV:**	12/31/02
ADDRESS:	STANFORD YARD	**ID1:**	NRC-632843
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD NON-RELEASE
CONTACT:	STEVEN NEVILLE	**PHONE:**	2123402050

SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			
DESC OF REMEDIAL ACTION:			
EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	
FED AGENCY NOTIFIED:		**STRUCTURE NAME:**	
TYPE OF STRUCTURE:		**ALLISION:**	
STRUCTURE OPERATIONAL:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:	N	**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:		**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: NO ADDITIONAL INFORMATION

MATERIAL INFORMATION

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

TRAIN NAME/NUMBER:	103	**RAILROAD NAME:**	METRO NORTH RAILROAD
TRAIN TYPE:	LOCOMOTIVE	**TRACK SPEED:**	
TRAIN SPEED:		**TRAIN DIRECTION:**	
NUMBER OF LOCOMOTIVES:	1	**NUMBER OF CARS:**	
NUMBER DERAILED:	1	**NON COMPLIANCE WITH HAZMAT:**	N

VESSEL INFORMATION

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 52 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	STAMFORD YARD	**REV:**	12/31/02
ADDRESS:		**ID1:**	NRC-597204
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD NON-RELEASE
CONTACT:	UNKNOWN	**PHONE:**	

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED:	21-MAR-02	**DATE COMPLETE:**	21-MAR-02
CALL TAKER:	CAV5932	**CALL TYPE:**	INC

RESPONSIBLE PARTY: UNKNOWN
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY:
ORGANIZATION TYPE: UNKNOWN

ADDRESS:
XX

INITIALLY REPORTED BY: TELEPHONE
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF:
SOURCE:

INCIDENT INFORMATION

INCIDENT DESCRIPTION: TRAIN 1317 NUMBER TWO TRUCK ON THE HEAD CAR 8917 DERAILED LINED FROM THE LADDER TO TRACK SIX ON THE HILL. THE CAUSE FOR THE DERAILMENT IS UNKOWN

INCIDENT TYPE:	RAILROAD NON-RELEASE		**INCIDENT CAUSE:** UNKNOWN
INCIDENT DATE:	21-MAR-02	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	
POTENTIAL_FLAG:	Y	**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:	N	**LNG FLAG:**	
AIRCRAFT TYPE:	UNKNOWN	**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	UNKNOWN	**POWER GEN FACILITY:**	U
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 52 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	STAMFORD YARD	**REV:**	12/31/02
ADDRESS:		**ID1:**	NRC-597204
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD NON-RELEASE
CONTACT:	UNKNOWN	**PHONE:**	

PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	
RAILROAD MILEPOST:		**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			
DESCRIPTION OF TANK:			
OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	U
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	NON-RELEASE (N/A)	**ADDTL MEDIUM INFO:**	
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	U
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:		**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:		**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

ERNS

SEARCH ID: 52 **DIST/DIR:** 0.03 NE **ELEVATION:** 28 **MAP ID:** 2

NAME:	STAMFORD YARD	**REV:**	12/31/02
ADDRESS:		**ID1:**	NRC-597204
	STAMFORD CT 06902	**ID2:**	
	FAIRFIELD	**STATUS:**	RAILROAD NON-RELEASE
CONTACT:	UNKNOWN	**PHONE:**	

SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: WRECK CRANE IS EN ROUTE

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	CDOT
FED AGENCY NOTIFIED:		**STRUCTURE NAME:**	
TYPE OF STRUCTURE:		**ALLISION:**	
STRUCTURE OPERATIONAL:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:	N	**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:		**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: CALLER STATED THERE WERE NO CUSTOMERs ON BOARD. CALLER PLANS TO NOTIFY NTSB. CALLER DID NOT KNOW IF THERE WAS ANY DAMAGE TO THE TRAIN.

MATERIAL INFORMATION

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

TRAIN NAME/NUMBER:	1317	**RAILROAD NAME:**	METRO NORTH RAILROAD
TRAIN TYPE:	COMMUTER	**TRACK SPEED:**	
TRAIN SPEED:		**TRAIN DIRECTION:**	E
NUMBER OF LOCOMOTIVES:		**NUMBER OF CARS:**	6
NUMBER DERAILED:	1	**NON COMPLIANCE WITH HAZMAT:**	N

TRAIN NAME/NUMBER:	1317	**CAR NUMBER:**	8917
POSITION IN TRAIN:		**DERAILED TYPE:**	CAR
CAR CONTENT:	EMPTY		

VESSEL INFORMATION

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

VCP

SEARCH ID: 331 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: FORMER DOT COMMUTER LOT
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 9/11/08
ID1: 5524
ID2: 5524
STATUS: VRP-133XSITES
PHONE:

SITE INFORMATION

WASTE TYPE1: CHLR VOC - CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE2: NCHLR VOC - NON CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE3: PCB

DISPOSAL METHOD: SPILL/DUMP

SAMPLE AVAILABLE: YES
LOCATION METHOD:
OTHER DEP:
UPDATED BY: WILCOX, J.
UPDATED PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
UPDATED: 6/29/2000
SW CLASSIFICATION: SB
GW CLASSIFICATION: GB - HIGH YIELD - N.P.P.

COMMENTS:

SITE NAMES
DOT COMMUTER LOT - STATION PLACE PROPERTY

INFORMATION
ESTABLISHMENT: DOT COMMUTER LOT-STATION PLACE PROPERTY
SELLER: CT DEPARTMENT OF TRANSPORTATION
BUYER: BBSF, LLC.

FORM: FORM III **RECEIVED:** 5/8/2000
ACKNOWLEDGED: 5/12/2000 **RETURNED:**
CERTIFIED: **REVISED:**
ECAF RECEIVED: 5/8/2000 **ECAF REVIEWED:** 5/19/2000

STATUS: L

STAFF: WILCOX, J.

CERTIFIER: ARSA ASSOCIATES/MEMBER OF BBSF, LLC, TRANSFEREE
ANTHONY E. MALKIN
ARSA ASSOCIATES
C/O WandM PROPERTIES OF CT
ONE STATION PLACESTAMFORD, CT 06902

FIRST PAYMENT: $2000 **SECOND PAYMENT:** $

COMMENTS:

REFERRAL INFORMATION
SOURCE: PTP - PROPERTY TRANSFER PROGRAM
RECEIVED: 5/8/2000
STAFF: WILCOX, J.

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

VCP

SEARCH ID: 331 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: FORMER DOT COMMUTER LOT
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 9/11/08
ID1: 5524
ID2: 5524
STATUS: VRP-133XSITES
PHONE:

PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
ASSIGNED: 5/9/2000
COMPLETED: 7/12/2000
OUTCOME: PTP

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

OTHER

SEARCH ID: 246 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: FORMER DOT COMMUTER LOT
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 9/11/09
ID1: 5524
ID2:
STATUS: PTP
PHONE:

SITE INFORMATION

WASTE TYPE1: CHLR VOC - CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE2: NCHLR VOC - NON CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE3: PCB

DISPOSAL METHOD: SPILL/DUMP

SAMPLE AVAILABLE: YES
LOCATION METHOD:
OTHER DEP:
UPDATED BY: WILCOX, J.
UPDATED PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
UPDATED: 6/29/2000
SW CLASSIFICATION: SB
GW CLASSIFICATION: GB - HIGH YIELD - N.P.P.

COMMENTS:

SITE NAMES
DOT COMMUTER LOT - STATION PLACE PROPERTY

INFORMATION
ESTABLISHMENT: DOT COMMUTER LOT-STATION PLACE PROPERTY
SELLER: CT DEPARTMENT OF TRANSPORTATION
BUYER: BBSF, LLC.

FORM: FORM III **RECEIVED:** 5/8/2000
ACKNOWLEDGED: 5/12/2000 **RETURNED:**
CERTIFIED: **REVISED:**
ECAF RECEIVED: 5/8/2000 **ECAF REVIEWED:** 5/19/2000

STATUS: L

STAFF: WILCOX, J.

CERTIFIER: ARSA ASSOCIATES/MEMBER OF BBSF, LLC, TRANSFEREE
ANTHONY E. MALKIN
ARSA ASSOCIATES
C/O WandM PROPERTIES OF CT
ONE STATION PLACESTAMFORD, CT 06902

FIRST PAYMENT: $2000 **SECOND PAYMENT:** $

COMMENTS:

REFERRAL INFORMATION
SOURCE: PTP - PROPERTY TRANSFER PROGRAM
RECEIVED: 5/8/2000
STAFF: WILCOX, J.

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

OTHER

SEARCH ID: 246 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: FORMER DOT COMMUTER LOT
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 9/11/09
ID1: 5524
ID2:
STATUS: PTP
PHONE:

PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
ASSIGNED: 5/9/2000
COMPLETED: 7/12/2000
OUTCOME: PTP

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

STATE

SEARCH ID: 81 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: FORMER DOT COMMUTER LOT
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 9/11/09
ID1: 5524
ID2:
STATUS: SUSPECTED
PHONE:

SITE INFORMATION

WASTE TYPE1: CHLR VOC - CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE2: NCHLR VOC - NON CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE3: PCB

DISPOSAL METHOD: SPILL/DUMP

SAMPLE AVAILABLE: YES
LOCATION METHOD:
OTHER DEP:
UPDATED BY: WILCOX, J.
UPDATED PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
UPDATED: 6/29/2000
SW CLASSIFICATION: SB
GW CLASSIFICATION: GB - HIGH YIELD - N.P.P.

COMMENTS:

SITE NAMES
DOT COMMUTER LOT - STATION PLACE PROPERTY

REFERRAL INFORMATION
SOURCE: PTP - PROPERTY TRANSFER PROGRAM
RECEIVED: 5/8/2000
STAFF: WILCOX, J.
PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
ASSIGNED: 5/9/2000
COMPLETED: 7/12/2000
OUTCOME: PTP

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

OTHER

SEARCH ID: 245 **DIST/DIR:** 0.03 NE **ELEVATION:** 30 **MAP ID:** 3

NAME: DOT COMMUTER LOT-STATION PLACE PROPERTY
ADDRESS: 43 STATION PL
STAMFORD CT 06902
CONTACT:

REV: 10/12/04
ID1: CTOT-1004-36
ID2:
STATUS:
PHONE:

SITE INFORMATION

SITE TYPE: PROPERTY TRANSFER FORM III
INVESTIGATION START DATE: 6/26/2000
REMEDIATION START DATE:
REMEDIATION COMPLETED DATE:

COMMENTS: PROJECTS

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 192 **DIST/DIR:** 0.06 SE **ELEVATION:** 27 **MAP ID:** 4

NAME: UNKNOWN POLLUTER
ADDRESS: ROCKLAND PL
STAMFORD CT

CONTACT: WOFFORD, RON

REV: 1/15/10
ID1: 200002514
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 4/18/2000
TIME OF RELEASE:
ACTION: REMOVED

DISHCHARGER: UNKNOWN POLLUTER

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

SITE INFORMATION

DATE OF RELEASE: 4/18/2000
TIME OF RELEASE:
ACTION: CONTAINED

DISHCHARGER: UNKNOWN POLLUTER

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 4/18/2000 12:17:51 PM
REPORTED BY: LIEUTENANT MCCOLL
REPORTER S PHONE: 9774720

MATERIAL RELEASED: UNKNOWN PRODUCT
QUANTITY SPILLED: 1 DRUM

EMERGENCY MEASURES: LEAKING 55 - GALLON DRUM - UNKNOWN CONTENTS - CONTAINED AND OVERPACKED BY FIRE DEPARTMENT

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 205 **DIST/DIR:** 0.07 NW **ELEVATION:** 28 **MAP ID:** 5

NAME:
ADDRESS: N STATE ST
STAMFORD CT
FAIRFIELD
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200607993
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 12/18/2006
TIME OF RELEASE: 2:00:00 PM
ACTION: CLEANED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 12/18/2006
TIME OF RELEASE: 2:00:00 PM
ACTION: OTHER

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

SITE INFORMATION

DATE OF RELEASE: 12/18/2006
TIME OF RELEASE: 2:00:00 PM
ACTION: SANDED

DISHCHARGER:

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

REPORT TIME: 12/19/2006 7:53:37 AM
REPORTED BY: CAROL MARTIN
REPORTER S PHONE: 3277433

MATERIAL RELEASED: HYDRAULIC OIL
QUANTITY SPILLED: 5 GAL

CAUSE OF INCIDENT: HOSE FAILURE

EMERGENCY MEASURES:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

SPILLS

SEARCH ID: 173 **DIST/DIR:** 0.07 NW **ELEVATION:** 28 **MAP ID:** 5

NAME: SAA
ADDRESS: STATE AT THE RR STATION ST
STAMFORD CT
CONTACT: NO RESPONSE

REV: 1/15/10
ID1: 200203429
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 5/24/2002
TIME OF RELEASE: 11:30:00 AM
ACTION: CLEANED

DISHCHARGER: SAA

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

REPORT TIME: 5/24/2002 1:02:37 PM
REPORTED BY: DAN KANE
REPORTER S PHONE: 3277433

MATERIAL RELEASED: MOTOR OIL
QUANTITY SPILLED: 1 GAL

CAUSE OF INCIDENT: CONTAINER FAILURE

EMERGENCY MEASURES: 1 QT OF OIL ONTO RAOD, NO WATER WAYS

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

STATE

SEARCH ID: 89 **DIST/DIR:** 0.09 NE **ELEVATION:** 23 **MAP ID:** 7

NAME: INFANTI SERVICE CENTER
ADDRESS: 613 ATLANTIC ST
STAMFORD CT
FAIRFIELD
CONTACT:

REV: 9/11/09
ID1: 2906
ID2:
STATUS: SUSPECTED
PHONE:

SITE INFORMATION

WASTE TYPE1: CHLR VOC - CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE2: NCHLR VOC - NON CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE3:

DISPOSAL METHOD: SPILL/DUMP FARM

SAMPLE AVAILABLE: NO
LOCATION METHOD:
OTHER DEP:
UPDATED BY: DANYLUK, M.
UPDATED PROGRAM: DandA
UPDATED: 2/27/1998
SW CLASSIFICATION:
GW CLASSIFICATION:

COMMENTS: REFERRAL FROM WEED DISTRICT 3 PETER PLOCH 11/12/97 OF COMPLAINT OF DUMPING CONTAMINATED SOIL. (11/97) PERD STAFF SAMPLED PILES OF MATERIAL ON 11/25/97 BASED ON COMPLAINT THAT THIS WAS SOURCE OF LNFSCAPING MATERIAL. ANALTYES WERE DETECTED BUT NOT ABOVE RSR. THE SITE IS BEING WORK ON BY THE USP. (2/98)

SITE NAMES
DOT GARAGE
DOT GARAGE

COMMENTS:

REMEDIAL INFORMATION
TYPE: USP - DEP WATER BUREAU - URBAN SITES REMEDIAL ACTION PROGRAM
PROGRAM: USP - DEP WATER BUREAU - URBAN SITES REMEDIAL ACTION PROGRAM
ENTERED:
STAFF: HILL, P.
ASSIGNED:
ORDER ISSUED: NO
ORDER DATE:
COMPLETED:
DESIGN DONE:
ACTION DONE:
GW MONITORING: NO

COMPLETE:
PHASE: PII
ORDER NUMBER:
INVESTIGATION START:
DESIGN START:
ACTION START:
OPERATION START:

REFERRAL INFORMATION

REFERRAL INFORMATION
SOURCE: USP - DEP WATER BUREAU - URBAN SITES REMEDIAL ACTION PROGRAM
RECEIVED: 2/15/1995
STAFF:
PROGRAM:

- Continued on next page -

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

STATE

SEARCH ID: 89 **DIST/DIR:** 0.09 NE **ELEVATION:** 23 **MAP ID:** 7

NAME: INFANTI SERVICE CENTER
ADDRESS: 613 ATLANTIC ST
STAMFORD CT
FAIRFIELD
CONTACT:

REV: 9/11/09
ID1: 2906
ID2:
STATUS: SUSPECTED
PHONE:

ASSIGNED:
COMPLETED: 2/21/1997
OUTCOME: USP

SOURCE: RCRA - DEP WASTE BUREAU - WASTE ENGINEERING and ENFORCEMENT DIVISION
RECEIVED: 11/12/1997
STAFF: DANYLUK, M.
PROGRAM: DandA
ASSIGNED: 11/12/1997
COMPLETED: 2/25/1998
OUTCOME: NFA

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

UST

SEARCH ID: 257 **DIST/DIR:** 0.09 NE **ELEVATION:** 23 **MAP ID:** 7

NAME: INFANTI PROPERTY
ADDRESS: 613 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 2/3/10
ID1: 08768
ID2: 135-8768
STATUS: PERMANENTLY CLOSED
PHONE:

TOTAL NUMBER OF TANKS: 6

TANK ID: 8768-1
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 5/1/1973
SUBSTANCE STORED: GASOLINE
TANK MATERIAL: ASPHALT COATED OR BARE STEEL
PIPE MATERIAL: BARE OR GALVONIZED STEEL
DATE LAST USED: 10/1/1988
CAPACITY (GALS): 2000
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 8768-2
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 11/1/1984
SUBSTANCE STORED: GASOLINE
TANK MATERIAL: ASPHALT COATED OR BARE STEEL
PIPE MATERIAL: BARE OR GALVONIZED STEEL
DATE LAST USED: 1/1/1996
CAPACITY (GALS): 3000
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 8768-3
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 6/1/1953
SUBSTANCE STORED: USED OIL
TANK MATERIAL: ASPHALT COATED OR BARE STEEL
PIPE MATERIAL: BARE OR GALVONIZED STEEL
DATE LAST USED: 1/1/1996
CAPACITY (GALS): 550
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 8768-4
TANK STATUS: PERMANENTLY CLOSED-TANK FILLED WITH INERT MATERIAL

DATE INSTALLED: 6/1/1953
SUBSTANCE STORED: GASOLINE
TANK MATERIAL:
PIPE MATERIAL:
DATE LAST USED: 9/1/1968
CAPACITY (GALS): 550
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 8768-5
TANK STATUS: PERMANENTLY CLOSED-TANK FILLED WITH INERT MATERIAL

DATE INSTALLED: 6/1/1953
SUBSTANCE STORED: GASOLINE
TANK MATERIAL:
PIPE MATERIAL:
DATE LAST USED: 10/1/1984
CAPACITY (GALS): 2000
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 8768-6
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 1/1/1950
SUBSTANCE STORED: USED OIL
DATE LAST USED: 1/1/1996
CAPACITY (GALS): 275

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

UST

SEARCH ID: 257 **DIST/DIR:** 0.09 NE **ELEVATION:** 23 **MAP ID:** 7

NAME: INFANTI PROPERTY
ADDRESS: 613 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 2/3/10
ID1: 08768
ID2: 135-8768
STATUS: PERMANENTLY CLOSED
PHONE:

TANK MATERIAL: ASPHALT COATED OR BARE STEEL
PIPE MATERIAL: BARE OR GALVONIZED STEEL

TANK PROTECTION:
PIPE PROTECTION:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

UST

SEARCH ID: 255 **DIST/DIR:** 0.09 SE **ELEVATION:** 23 **MAP ID:** 8

NAME: HERTZ CAR WASH FACILITY
ADDRESS: 641 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 2/3/10
ID1: 11446
ID2: 135-11446
STATUS: PERMANENTLY CLOSED
PHONE:

TOTAL NUMBER OF TANKS: 1

TANK ID: 11446-1
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 4/1/1996
SUBSTANCE STORED: GASOLINE
TANK MATERIAL: FIBERGLASS REINFORCED PLASTIC
PIPE MATERIAL: RIGID FIBERGLASS REINFORCED PLASTIC

DATE LAST USED: 9/2/2009
CAPACITY (GALS): 4000
TANK PROTECTION: DOUBLE-WALLED
PIPE PROTECTION:

UST

SEARCH ID: 250 **DIST/DIR:** 0.09 SE **ELEVATION:** 27 **MAP ID:** 9

NAME: AVIS RENT A CAR SYSTEM INC.
ADDRESS: 72 HENRY ST
STAMFORD CT 06902
FAIRFIELD
CONTACT:

REV: 2/3/10
ID1: 11940
ID2: 135-11940
STATUS: CURRENTLY IN USE
PHONE:

TOTAL NUMBER OF TANKS: 1

TANK ID: 11940-1
TANK STATUS: CURRENTLY IN USE-

DATE INSTALLED: 7/1/1999
SUBSTANCE STORED: GASOLINE
TANK MATERIAL: FIBERGLASS REINFORCED PLASTIC
PIPE MATERIAL: RIGID FIBERGLASS REINFORCED PLASTIC
DOUBLE-WALLED

DATE LAST USED:
CAPACITY (GALS): 12000
TANK PROTECTION: DOUBLE-WALLED
PIPE PROTECTION:

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

RCRANLR

SEARCH ID: 22 **DIST/DIR:** 0.09 SE **ELEVATION:** 23 **MAP ID:** 10

NAME: ROYAL METALS CORP
ADDRESS: 669 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 12/11/09
ID1: CTD093616894
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ANDREW ZIOLKOWSKI
PO BOX 252
STAMFORD CT 06904

PHONE: 2033251386

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 6/1/1990
TYPE: 211 - UNILATERAL ORDER, NO PENALTIES

AGENCY: S - STATE **DATE:** 6/1/1990
TYPE: 211 - UNILATERAL ORDER, NO PENALTIES

AGENCY: S - STATE **DATE:** 7/1/1990
TYPE: 311 - CONSENT ORDER, NO PENALTIES

AGENCY: S - STATE **DATE:** 7/1/1990
TYPE: 311 - CONSENT ORDER, NO PENALTIES

AGENCY: S - STATE **DATE:** 3/4/1991
TYPE: 510 - CIVIL ACTION FOR COMPLIANCE

AGENCY: S - STATE **DATE:** 3/4/1991
TYPE: 510 - CIVIL ACTION FOR COMPLIANCE

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** S - STATE
DETERMINED: 8/26/1986 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 9/16/1992
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0002 **RESPONSIBLE:** S - STATE
DETERMINED: 3/21/1990 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED:
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

RCRANLR

SEARCH ID: 22 **DIST/DIR:** 0.09 SE **ELEVATION:** 23 **MAP ID:** 10

NAME: ROYAL METALS CORP
ADDRESS: 669 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 12/11/09
ID1: CTD093616894
ID2:
STATUS: NLR
PHONE:

HAZARDOUS WASTE INFORMATION:

Corrosive waste

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

UST

SEARCH ID: 249 **DIST/DIR:** 0.09 SE **ELEVATION:** 23 **MAP ID:** 10

NAME: 669 ATLANTIC STREET ASSC.
ADDRESS: 669 ATLANTIC ST
STAMFORD CT 06902
CONTACT:

REV: 2/3/10
ID1: 04248
ID2: 135-4248
STATUS: CURRENTLY IN USE
PHONE:

TOTAL NUMBER OF TANKS: 3

TANK ID: 4248-1
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED:	1/1/1950	**DATE LAST USED:**	11/1/1988
SUBSTANCE STORED:	HEATING OIL	**CAPACITY (GALS):**	2000
TANK MATERIAL:	ASPHALT COATED OR BARE STEEL	**TANK PROTECTION:**	
PIPE MATERIAL:	BARE OR GALVONIZED STEEL	**PIPE PROTECTION:**	

TANK ID: 4248-2
TANK STATUS: CURRENTLY IN USE-

DATE INSTALLED:	11/1/1988	**DATE LAST USED:**	
SUBSTANCE STORED:	HEATING OIL	**CAPACITY (GALS):**	3000
TANK MATERIAL:	ASPHALT COATED OR BARE STEEL	**TANK PROTECTION:**	
PIPE MATERIAL:	BARE OR GALVONIZED STEEL	**PIPE PROTECTION:**	

TANK ID: 4248-3
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED:	1/1/1950	**DATE LAST USED:**	11/1/1988
SUBSTANCE STORED:	HEATING OIL	**CAPACITY (GALS):**	2000
TANK MATERIAL:	ASPHALT COATED OR BARE STEEL	**TANK PROTECTION:**	
PIPE MATERIAL:	BARE OR GALVONIZED STEEL	**PIPE PROTECTION:**	

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

RCRAGN

SEARCH ID: 14 **DIST/DIR:** 0.09 SE **ELEVATION:** 24 **MAP ID:** 11

NAME: RAPHAELS FURNITURE RESTORATION
ADDRESS: 655 ATLANTIC ST
STAMFORD CT 06902
FAIRFIELD
CONTACT:

REV: 12/11/09
ID1: CTD981890585
ID2:
STATUS: VGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA PERMIT: *N - NO*
GPRA POST CLOSURE: *N - NO*
GPRA CA: *N - NO*
GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA PERMIT: *N - NO*
GPRA POST CLOSURE: *N - NO*
GPRA CA: *N - NO*
GPRA COMPLIANCE MONITORING and ENFORCEMENT: *N - NO*

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA: N - NO
SUBJCA TSD 3004: N - NO
SUBJCA NON TSD: N - NO

SIGNIFICANT NON-COMPLIANCE(SNC): N - NO
BEGINNING OF THE YEAR SNC: N - NO
PERMIT WORKLOAD: -----
CLOSURE WORKLOAD: -----
POST CLOSURE WORKLOAD: -----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS: -----
CORRECTIVE ACTION WORKLOAD: N - NO
GENERATOR STATUS: CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZA
NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, before use, only the above spent
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by
The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2, trichloroethane; a

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

LUST

SEARCH ID: 289 **DIST/DIR:** 0.09 SW **ELEVATION:** 27 **MAP ID:** 13

NAME: LOUREIRO ENGINERING
ADDRESS: 424 WASHINGTON BLVD
STAMFORD CT 06904
FAIRFIELD
CONTACT: NO RESPONSE

REV: 11/4/09
ID1: 200805955
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 9/18/2008
TIME OF RELEASE:

DISHCHARGER: LOUREIRO ENGINERING

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY:

MATERIAL RELEASED (GAL): FUEL OIL 20

CAUSE OF INCIDENT: 3 - INGROUND TANK FAILURE
OTHER:

REPORT TIME: 9/18/2008 7:18:55 AM
REPORTED BY: GEORGE ANDREWS
REPORTER S PHONE: 7476181

AGENCY NOTIFIED: 3 - LOCAL FIRE MARSHAL
OTHER:
DEP BUREAU:
DEP DIVISIPN:

AGENCY NOTIFIED: 8 - DEP DISPATCH
OTHER:
DEP BUREAU:
DEP DIVISIPN:

ACTION TAKEN: 17 - REMOVED TANK
OTHER:

ACTION TAKEN: 18 - SOIL REMOVED
OTHER:

ACTION TAKEN: 14 - REPAIRED LINE
OTHER:

ACTION TAKEN: 3 - CONTAINED
OTHER:

EMERGENCY MEASURES: PARCEL IS BEING REMEDIATED UNDER DEP PERMIT PREVIOUSLY UNKNOWN UNDERGROUND STORAGE TANK, DEP CONTACT FOR PERMIT IS DOUG ZIMMERMAN, AND PER 937 NO RESPONSE.

RELEASE CLASS: 8 - COMMERCIAL

MEDIA AFFECTED: 4 - GROUND SURFACE

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

LUST

SEARCH ID: 295 **DIST/DIR:** 0.10 SE **ELEVATION:** 21 **MAP ID:** 14

NAME: PITNEY BOWES
ADDRESS: 650 ATLANTIC ST
STAMFORD CT 06904
FAIRFIELD
CONTACT: NO RESPONSE

REV: 11/4/09
ID1: 200503960
ID2:
STATUS: CLOSED
PHONE:

SITE INFORMATION

DATE OF RELEASE: 6/22/2005
TIME OF RELEASE:

DISHCHARGER: PITNEY BOWES

CT

DISCHARGER S PHONE:
ACCEPTS RESPONSIBILITY: YES

MATERIAL RELEASED (GAL): 2 FUEL OIL 0

CAUSE OF INCIDENT: 3 - INGROUND TANK FAILURE
OTHER:

REPORT TIME: 6/22/2005 2:48:32 PM
REPORTED BY: KAREN DESTEFANIS
REPORTER S PHONE: 4523100

AGENCY NOTIFIED: 9 - DEP
OTHER:
DEP BUREAU: BUREAU OF WASTE MANAGEMENT
DEP DIVISIPN: OIL AND CHEMICAL SPILL RESPONSE

ACTION TAKEN: 4 - CONTRACTED
OTHER:

EMERGENCY MEASURES: 550 GAL LUST, TANK TO BE REMOVED, CT TANK TO BE ON-SCENE FIRST WEEK OF JULY. ON 8/17/05 KAREN DESTEFANIS INFORMING DEP THE THIS WAS NOT A TANK. AFTER DIGGING THEY FOUND OUT IT WAS A PIPE INSTEAD OF A TANK.

RELEASE CLASS: 8 - COMMERCIAL

MEDIA AFFECTED: 6 - OTHER

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

STATE

SEARCH ID: 107 **DIST/DIR:** 0.10 SE **ELEVATION:** 21 **MAP ID:** 14

NAME: PITNEY BOWES, INC.
ADDRESS: 664 , 650, AND 710 ATLANTIC ST
STAMFORD CT
CONTACT:

REV: 9/11/09
ID1: 5065
ID2:
STATUS: SUSPECTED
PHONE:

SITE INFORMATION

WASTE TYPE1:
WASTE TYPE2:
WASTE TYPE3:

DISPOSAL METHOD:

SAMPLE AVAILABLE: NO
LOCATION METHOD:
OTHER DEP:
UPDATED BY:
UPDATED PROGRAM:
UPDATED:
SW CLASSIFICATION:
GW CLASSIFICATION:

COMMENTS:

SITE NAMES

COMMENTS:

REFERRAL INFORMATION
SOURCE: PTP - PROPERTY TRANSFER PROGRAM
RECEIVED: 2/5/1996
STAFF:
PROGRAM: PTP - PROPERTY TRANSFER PROGRAM
ASSIGNED:
COMPLETED: 2/5/1996
OUTCOME: PTP

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

UST

SEARCH ID: 261 **DIST/DIR:** 0.10 SE **ELEVATION:** 21 **MAP ID:** 14

NAME: PITNEY BOWES
ADDRESS: 650 ATLANTIC ST
STAMFORD CT 06926
FAIRFIELD
CONTACT:

REV: 2/3/10
ID1: 12090
ID2: 135-12090
STATUS: PERMANENTLY CLOSED
PHONE:

TOTAL NUMBER OF TANKS: 2

TANK ID: 12090-1
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 1/1/1950
SUBSTANCE STORED: USED OIL
TANK MATERIAL: ASPHALT COATED OR BARE STEEL
PIPE MATERIAL: OTHER (SPECIFY)
DATE LAST USED:
CAPACITY (GALS): 3000
TANK PROTECTION:
PIPE PROTECTION:

TANK ID: 12090-2
TANK STATUS: PERMANENTLY CLOSED-TANK WAS REMOVED FROM GROUND

DATE INSTALLED: 11/1/1988
SUBSTANCE STORED: HEATING OIL
TANK MATERIAL: COATED and CATHODICALLY PROTECTED STEEL (STI-P3)
PIPE MATERIAL: BARE OR GALVONIZED STEEL
DATE LAST USED: 9/1/2008
CAPACITY (GALS): 10000
TANK PROTECTION:
PIPE PROTECTION:

Environmental FirstSearch
Site Detail Report

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

STATE

SEARCH ID: 64 **DIST/DIR:** 0.10 NE **ELEVATION:** 20 **MAP ID:** 15

NAME: ATLANTIC STREET SITE
ADDRESS: 599 ATLANTIC ST
STAMFORD CT
FAIRFIELD
CONTACT:

REV: 9/11/09
ID1: 1841
ID2:
STATUS: SUSPECTED
PHONE:

SITE INFORMATION

WASTE TYPE1: CHLR VOC - CHLORINATED VOLATILE ORGANIC COMPOUNDS
WASTE TYPE2: HYDRO/OIL - HYDROCARBONS AND/OR FUEL OIL
WASTE TYPE3:

DISPOSAL METHOD: UST

SAMPLE AVAILABLE: NO
LOCATION METHOD:
OTHER DEP:
UPDATED BY: POST, M.
UPDATED PROGRAM: CORE
UPDATED: 8/10/1994
SW CLASSIFICATION:
GW CLASSIFICATION:

COMMENTS:

SITE NAMES

COMMENTS:

REFERRAL INFORMATION
SOURCE: REMEDIAL - DEP WATER BUREAU - REMEDIATION SECTION
RECEIVED: 8/10/1994
STAFF:
PROGRAM:
ASSIGNED:
COMPLETED:
OUTCOME:

Environmental FirstSearch Descriptions

NPL: ***EPA*** NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: ***EPA*** NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
DELISTED - Deleted from the Final NPL

CERCLIS: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM

TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: ***EPA/MA DEP/CT DEP*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.
CONNECTICUT HAZARDOUS WASTE MANIFEST – Database of all shipments of hazardous waste within, into or from Connecticut. The data includes date of shipment, transporter and TSD info, and material shipped and quantity. This data is appended to the details of existing generator records.
MASSACHUSETTES HAZARDOUS WASTE GENERATOR – database of generators that are regulated under the MA DEP.
VQN-MA = generates less than 220 pounds or 27 gallons per month of hazardous waste or waste oil.
SQN-MA = generates 220 to 2,200 pounds or 27 to 270 gallons per month of waste oil.
LQG-MA = generates greater than 2,200 lbs of hazardous waste or waste oil per month.

RCRA NLR: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:
Failure to report in a timely matter.
No longer in business.
No longer in business at the listed address.
No longer generating hazardous waste materials in quantities which require reporting.

Federal IC / EC: ***EPA*** BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.
FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: ***EPA/NRC*** EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: ***DOI/BIA*** INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as

territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation. BUREAU OF INDIAN AFFIARS CONTACT - Regional contact information for the Bureau of Indian Affairs offices.

State/Tribal Sites: ***CT DEP*** CONTAMINATED AND POTENTIALLY CONTAMINATED SITES - database of Hazardous Waste Facilities as defined by section 22a 134f of the Connecticut General Statute.

State Spills 90: ***CT DEP*** EMERGENCY RESPONSE ACTIONS AND SPILL RELEASES - database of oil and chemical spills. The database includes discharger, reporter, date of release, cause of incident, and emergency measurement information.

State/Tribal SWL: ***CT DEP*** ACTIVE SOLID WASTE LANDFILL FACILITIES - database of landfills including active and closed facilities.

State/Tribal LUST: ***CT DEP*** LEAKING UNDERGROUND STORAGE TANKS(LUST) - database of lusts, the data reported includes actions, agency, class, and media affected

State/Tribal UST/AST: ***CT DEP*** REGISTERED UNDERGROUND STORAGE TANKS - database of underground storage tanks, the data includes capacity, substance stored, status, tank material and piping material.

State/Tribal IC: ***CT DEP*** CONTAMINATED AND POTENTIALLY CONTAMINATED SITES SUBSET - database of environmental land use restrictions (ELUR). The data includes ELUR type, reason for the ELUR, and if the ELUR covers the entire property.

State/Tribal VCP: ***CT DEP*** CONTAMINATED AND POTENTIALLY CONTAMINATED SITES SUBSET - database of the Voluntary Remediation Program Sites pursuant to section 22a-133y or 22a-133x, and Pollution Abatement orders pursuant to CGS section 22a-432 or 433.

State/Tribal Brownfields: ***CBRA*** BROWNFIELDS DATABASE - Database of identified Brownfield sites eligible for redevelopment. Data includes address , acres , past use and road access.

Receptors: ***US DOC*** SENSITIVE RECEPTORS - 2005 Census Bureau's TIGER (Topologically Integrated Geographic Encoding and Referencing System) database of schools and hospitals. List of schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

NPDES: ***EPA*** THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM - Database of permitted facilities receiving and discharging effluents to and from a natural source where treatment of the effluent is monitored.

RADON: ***NTIS*** NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Permits: ***CT DEP*** CONECTICUT PERMITS AND ORDER COMPLIANCE SYSTEM (CPOCS) - database of permit and orders of compliance, notices of violations are included.

State Other: ***US DOJ*** NATIONAL CLANDESTINE LABORATORY REGISTER - Database of addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the U.S. Department of Justice ("the Department"), and the Department has not verified the entry and does not guarantee its accuracy. All sites that are included in this data set will have an id that starts with NCLR.

State Other: ***CT DEP*** PROPERTY TRANSFER PROGRAM DATABASE - database of the Property Transfer Program is a subset of the list of Contaminated and Potentially Contaminated sites. Property Transfer sites are sites that have filed either a Form III or Form IV pursuant to CGS 22a- 134a through 134d, inclusive.

Environmental FirstSearch Database Sources

NPL: ***EPA*** Environmental Protection Agency

Updated quarterly

NPL DELISTED: ***EPA*** Environmental Protection Agency

Updated quarterly

CERCLIS: ***EPA*** Environmental Protection Agency

Updated quarterly

NFRAP: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA TSD: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA GEN: ***EPA/MA DEP/CT DEP*** Environmental Protection Agency, Massachusetts Department of Environmental Protection, Connecticut Department of Environmental Protection

Updated quarterly

RCRA NLR: ***EPA*** Environmental Protection Agency

Updated quarterly

Federal IC / EC: ***EPA*** Environmental Protection Agency

Updated quarterly

ERNS: ***EPA/NRC*** Environmental Protection Agency

Updated annually

Tribal Lands: ***DOI/BIA*** United States Department of the Interior

Updated annually

State/Tribal Sites: ***CT DEP*** Connecticut Department of Environmental Protection

Updated quarterly

State Spills 90: ***CT DEP*** Connecticut Department of Environmental Protection's Bureau of Waste Management

Updated quarterly

State/Tribal SWL: ***CT DEP*** Department of Environmental Protection's Bureau of Waste Management, Solid Waste Program

Updated annually

State/Tribal LUST: ***CT DEP*** The Department of Environmental Protection's Bureau of Waste Management, Underground Storage Tank Enforcement Program

Updated quarterly

State/Tribal UST/AST: ***CT DEP*** Connecticut Department of Environmental Protection's Bureau of Waste Management, Underground Storage Tank Enforcement Program.

Updated quarterly

State/Tribal IC: ***CT DEP*** Connecticut Department of Environmental Protection

Updated when available

State/Tribal VCP: ***CT DEP*** Connecticut Department of Environmental Protection

Updated quarterly

State/Tribal Brownfields: ***CBRA*** Connecticut Brownfields Redevelopment Authority

Updated when available

Receptors: ***US DOC*** US Department of Commerce, Census Bureau

Updated periodically

NPDES: ***EPA*** Environmental Protection Agency

Updated quarterly

RADON: ***NTIS*** Environmental Protection Agency, National Technical Information Services

Updated periodically

State Permits: ***CT DEP*** Connecticut Department of Environmental Protection

Updated quarterly

State Other: ***US DOJ*** U.S. Department of Justice

Updated when available

State Other: ***CT DEP*** Connecticut Department of Environmental Protection

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: 43 STATION PL
STAMFORD CT 06902

JOB: 07-2097.B20

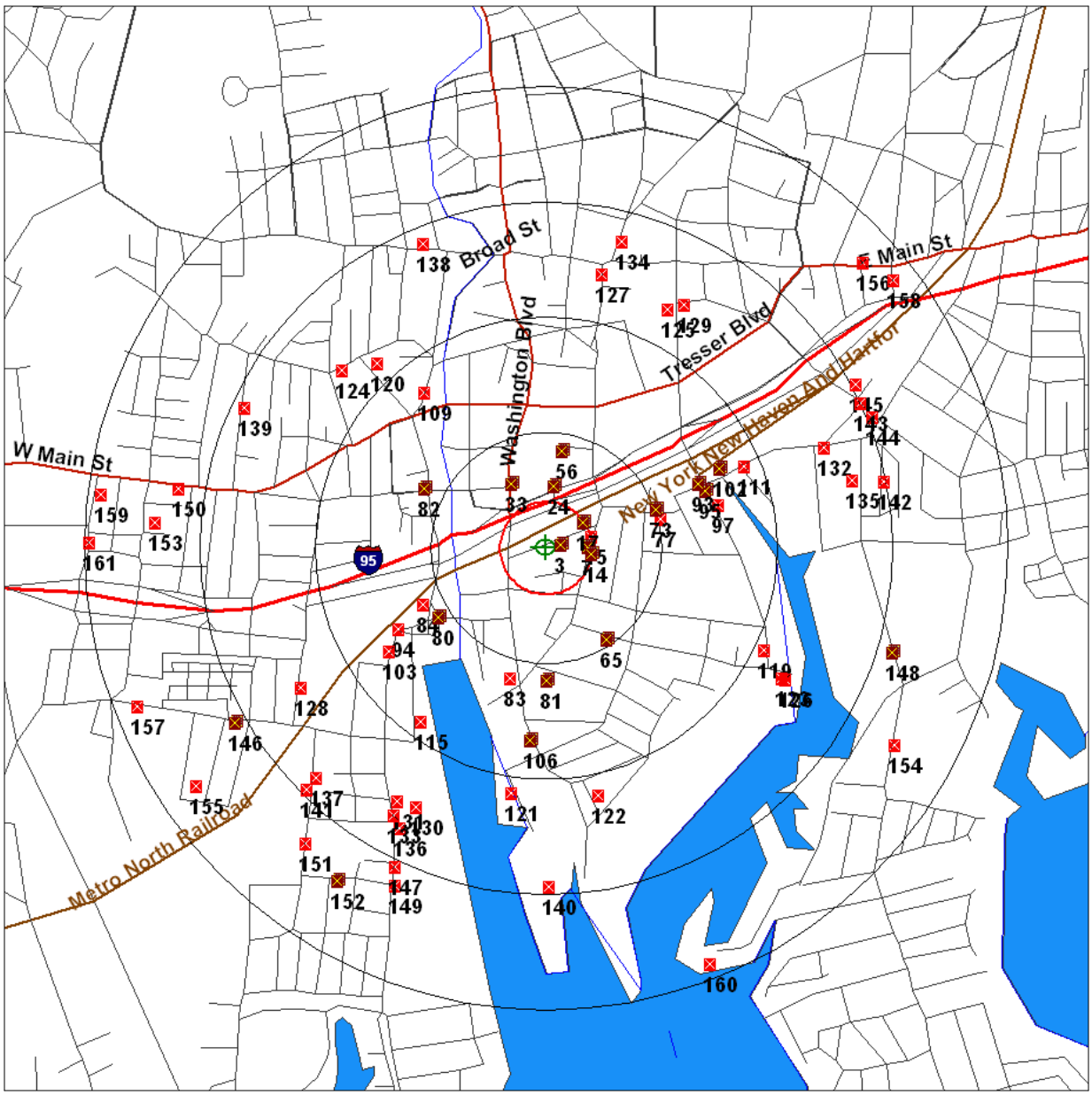
Street Name	Dist/Dir	Street Name	Dist/Dir
Atlantic St	0.11 SE		
Berkeley St	0.19 SW		
Clinton Ave	0.19 NW		
Connecticut Tpke	0.09 NW		
Division St	0.23 NW		
Federal St	0.23 NE		
Garden St	0.18 SE		
Governor John Davis	0.09 NW		
Greenwich Ave	0.21 NW		
Henry St	0.09 SW		
I-95	0.09 NW		
Lipton Pl	0.15 SE		
Manhattan St	0.17 NE		
Market St	0.23 SE		
Mc Cullough St	0.08 NW		
N State St	0.10 NW		
Pacific St	0.23 SE		
Pulaski St	0.15 SW		
Richmond Hill Ave	0.15 NW		
Rockland Ct	0.05 SE		
Rockland Pl	0.08 SE		
S State St	0.07 NW		
Stamford Pl	0.22 SW		
State Highway 104	0.09 NW		
Station Pl	0.00 --		
W Henry St	0.10 SW		
Walter Wheeler Dr	0.25 SW		
Washington Blvd	0.06 NW		
Water St	0.20 SW		
Waterside Pl	0.25 SW		
West St	0.24 NW		
Woodland Ave	0.18 SE		

Environmental FirstSearch

1 Mile Radius

ASTM Map: NPL, RCRACOR, STATE Sites

43 STATION PL, STAMFORD CT 06902



Source: 2005 U.S. Census TIGER Files

Target Site (Latitude: 41.045696 Longitude: -73.541024) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

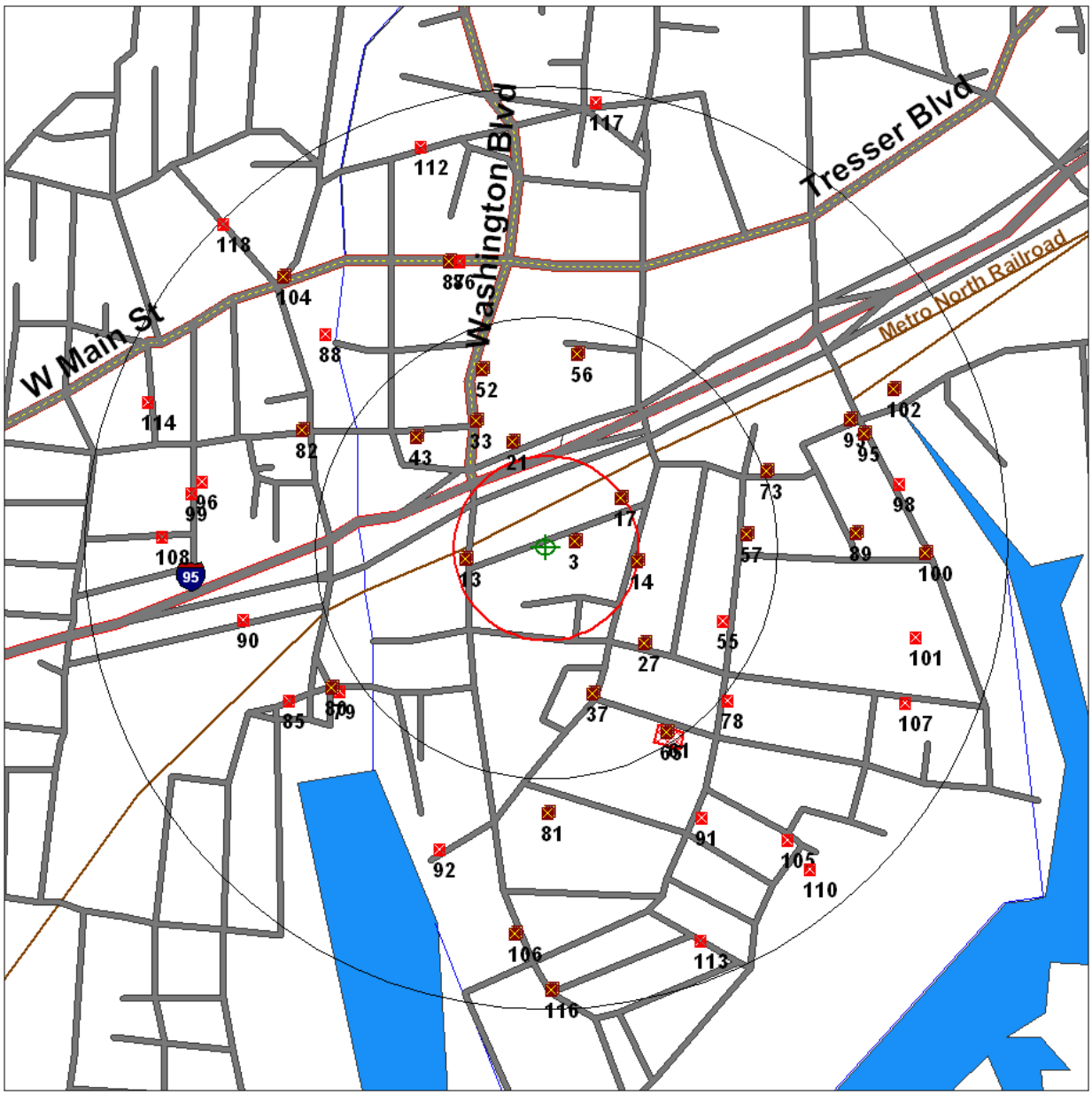
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

ASTM Map: CERCLIS, RCRATSD, LUST, SWL

43 STATION PL, STAMFORD CT 06902



Source: 2005 U.S. Census TIGER Files

Target Site (Latitude: 41.045696 Longitude: -73.541024) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

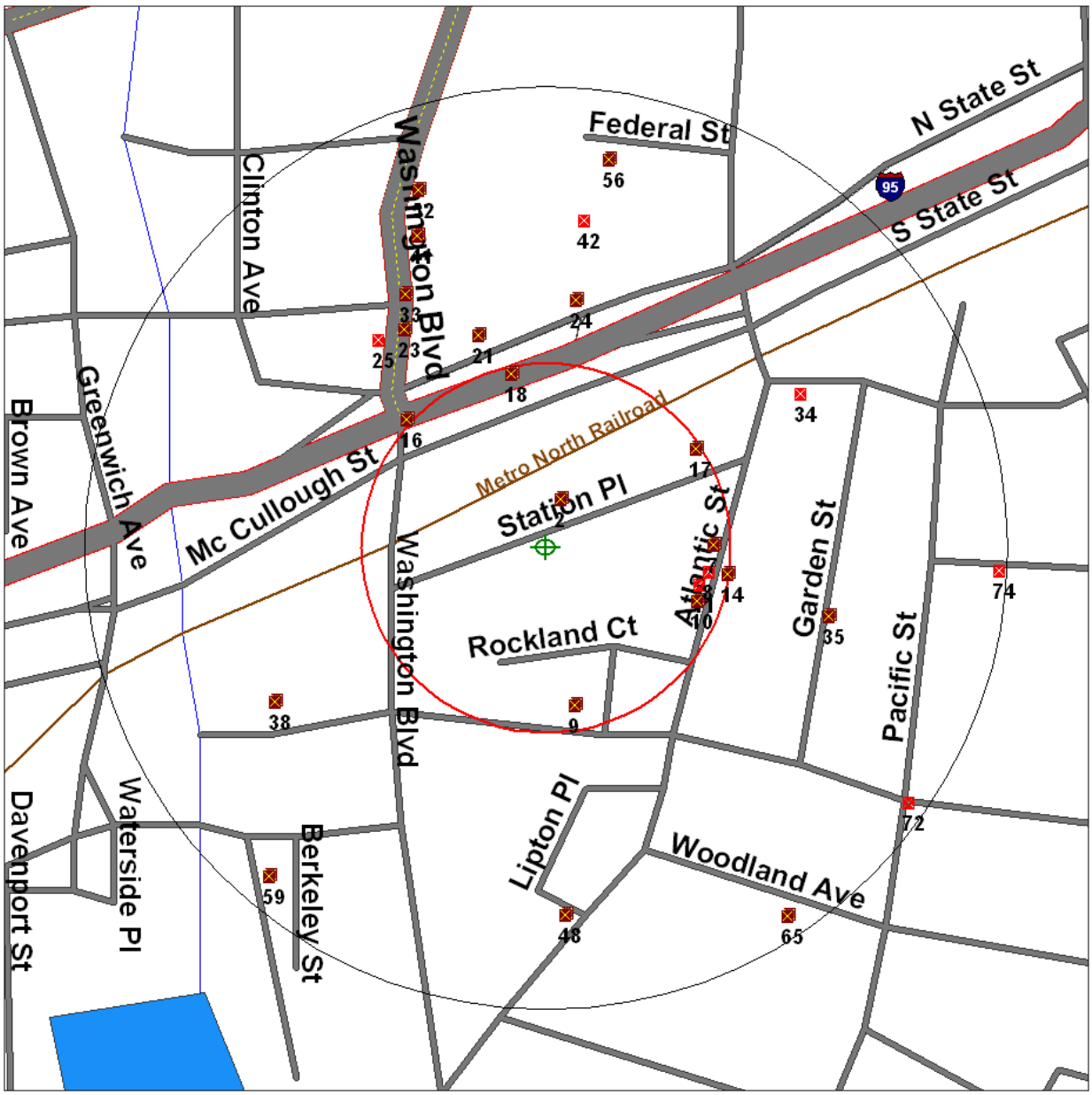
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.25 Mile Radius

ASTM Map: RCRAGEN, ERNS, UST

43 STATION PL, STAMFORD CT 06902



Source: 2005 U.S. Census TIGER Files

Target Site (Latitude: 41.045696 Longitude: -73.541024) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

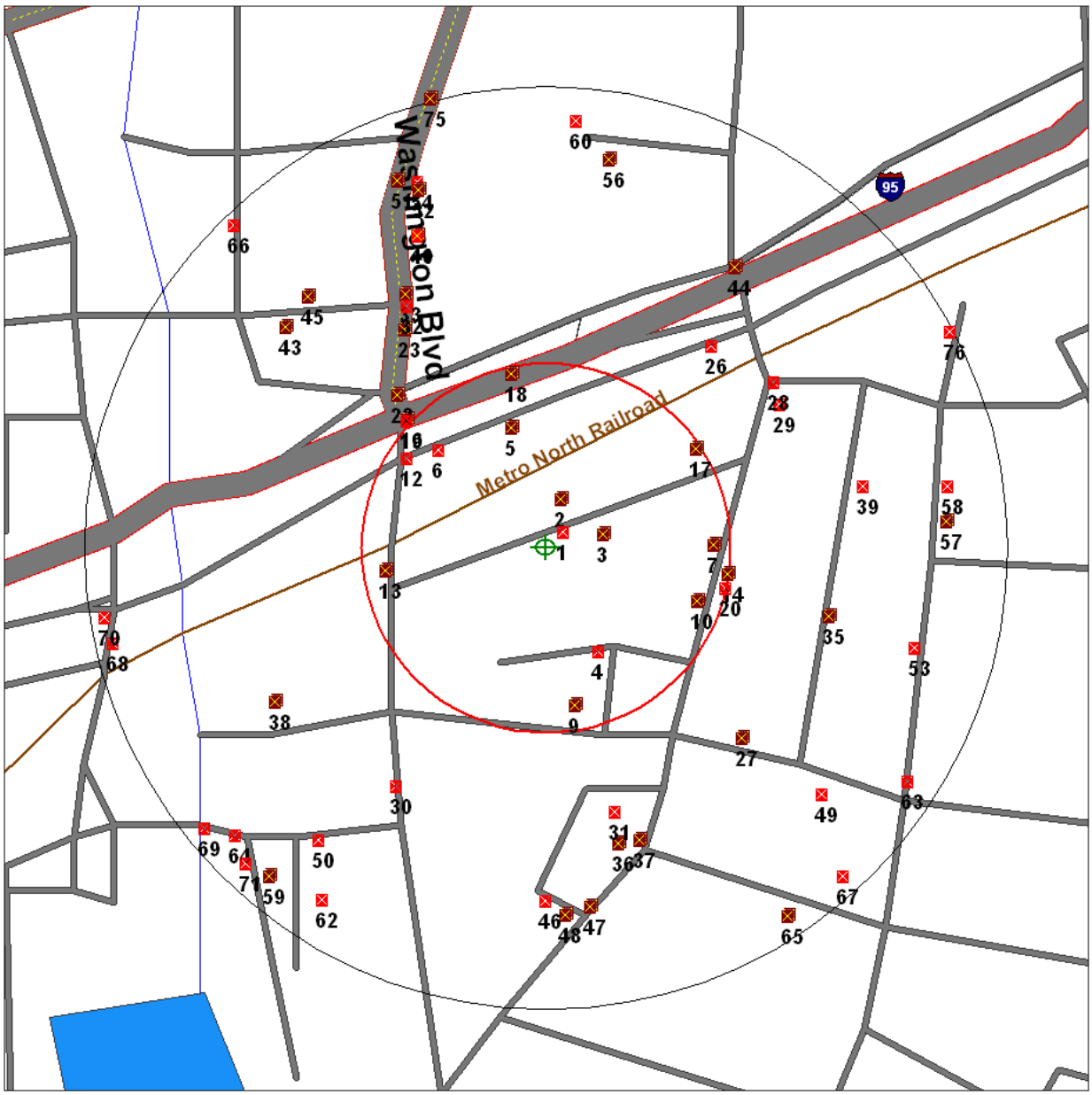
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.25 Mile Radius

Non-ASTM Map: Multiple Databases

43 STATION PL, STAMFORD CT 06902



Source: 2005 U.S. Census TIGER Files

Target Site (Latitude: 41.045696 Longitude: -73.541024) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

National Historic Sites and Landmark Sites .....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Property Location: 437 WASHINGTON BOULEVARD | MAP ID: 002/ 3400/ / / | Bldg Name: | State Use: 902C

Vision ID: 8404 | Account #002-3400 | Bldg #: 1 of 1 | Sec #: 1 of 1 | Card 1 of 1 | Print Date: 02/19/2010 09:53

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
STATE OF CONNECTICUT		3 Sewer	4 Heavy	
DEPT TRANS PO DRAWER A		1 All Public	1 Paved	
WETHERSFIELD, CT 06129-0801		4 Gas/Electric		
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	127 21 B	DSSD	
Survey1	9755	Agent Name	
Survey2		Roll	2
Census Tract	222	Common Nan	ABOVE GROUND PARK
Census Block	2008	AREA	CM
Sewer Acct			
GIS ID:	E 025 9168	*ASSOC PID#*	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
EX COM LN	21	10,450,470	7,315,330
EX COM BL	22	5,478,200	3,834,740
	Total	15,928,670	11,150,070

6135
STAMFORD, CT

VISION

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
STATE OF CONNECTICUT	1978/ 128	10/02/1980	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
			2008	21	7,315,330	2007	21	7,315,330
			2008	22	3,834,740	2007	22	3,834,740
	Total:			*Total:*	11,150,070		*Total:*	11,150,070

EXEMPTIONS

Year	Type	Description	Amount
2007	OIBX	State: Miscellaneous	11,150,070
		Total:	11,150,070

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	
Appraised XF (B) Value (Bldg)	
Appraised OB (L) Value (Bldg)	
Appraised Land Value (Bldg)	
Special Land Value	
Total Appraised Parcel Value	
Valuation Method:	
Exemptions	
Adjustment:	
Net Total Appraised Parcel Value	

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD NAME	STREET INDEX NAME	TRACING	BATCH
0250/A				

NOTES

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
3/6/2008			GS	72	Energy District

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Frontage	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	Adj. Unit Price	Land Value
1	902C	Exmpt Comm MDL-94	MG	1			169,623	SF	61.61			1.0000		1000				61.61	10,450,470

Total Card Land Units: 3.89 AC | Parcel Total Land Area: 3.89 AC | Total Land Value: 10,450,470

Property Location: 437 WASHINGTON BOULEVARD **MAP ID:** 002/ 3400/ / / **Bldg Name:** **State Use:** 902C

Vision ID: 8404 **Account #** 002-3400 **Bldg #:** 1 of 1 **Sec #:** 1 of 1 **Card** 1 of 1 **Print Date:** 02/19/2010 09:53

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	37		Parking Garage
Model	94		Comm/Ind
Grade	06		C++
Stories	5		
Occupancy			
Exterior Wall 1	24		Reinforc Concr
Exterior Wall 2			
Roof Structure	14		Typical
Roof Cover	12		Average
Interior Wall 1	08		Typical
Interior Wall 2			
Interior Floor 1	08		Average
Interior Floor 2			
Heating Fuel	01		None
Heating Type	01		None
AC Type	06		Typical
Bldg Use	902C		Exmpt Comm MDL-94
Total Rooms			
Total Bedrms	00		
Total Baths	0		
Heat/AC	01		Heat/AC Pkgs
Frame Type	06		FireProofSteel
Baths/Plumbing	02		Average
Ceiling/Wall	07		Typical
Rooms/Prtns	00		Typical
Wall Height	10		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

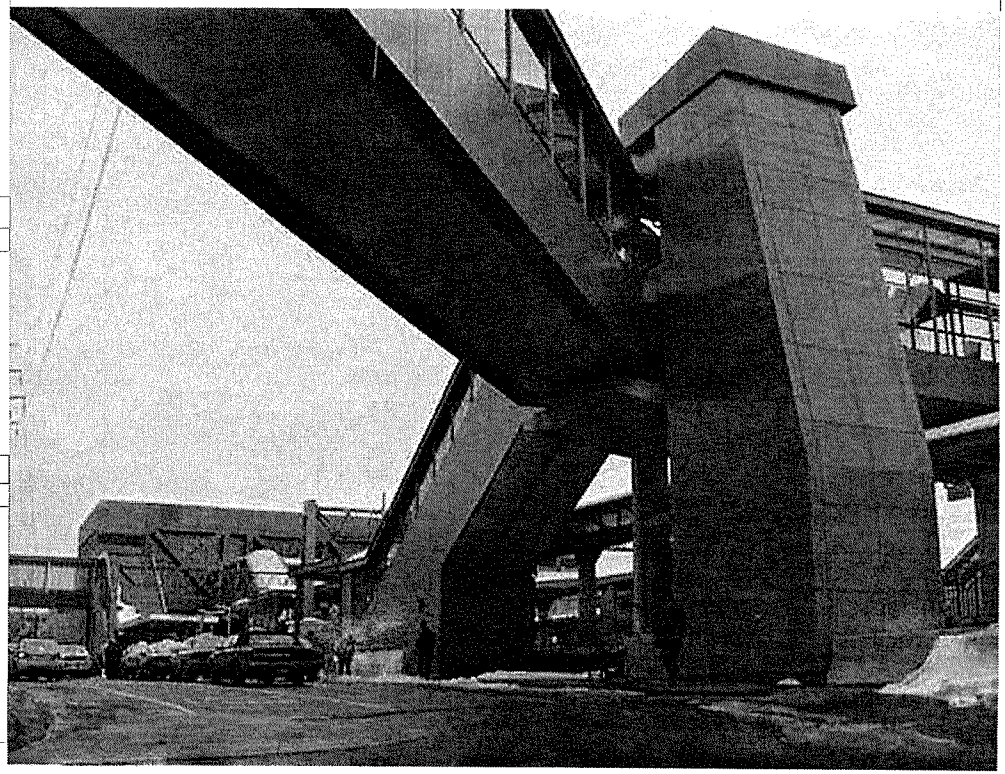
MIXED USE

Code	Description	Percentage
902C	Exmpt Comm MDL-94	100

COST/MARKET VALUATION

Adj. Base Rate:	
Section. RCN:	
Net Other Adj:	
Replace Cost	
AYB	1984
EYB	1992
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obslnc	0
External Obslnc	
Cost Trend Factor	1
Status	
% Complete	
Overall % Cond	
Apprais Val	5,405,400
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

PGA[260000]

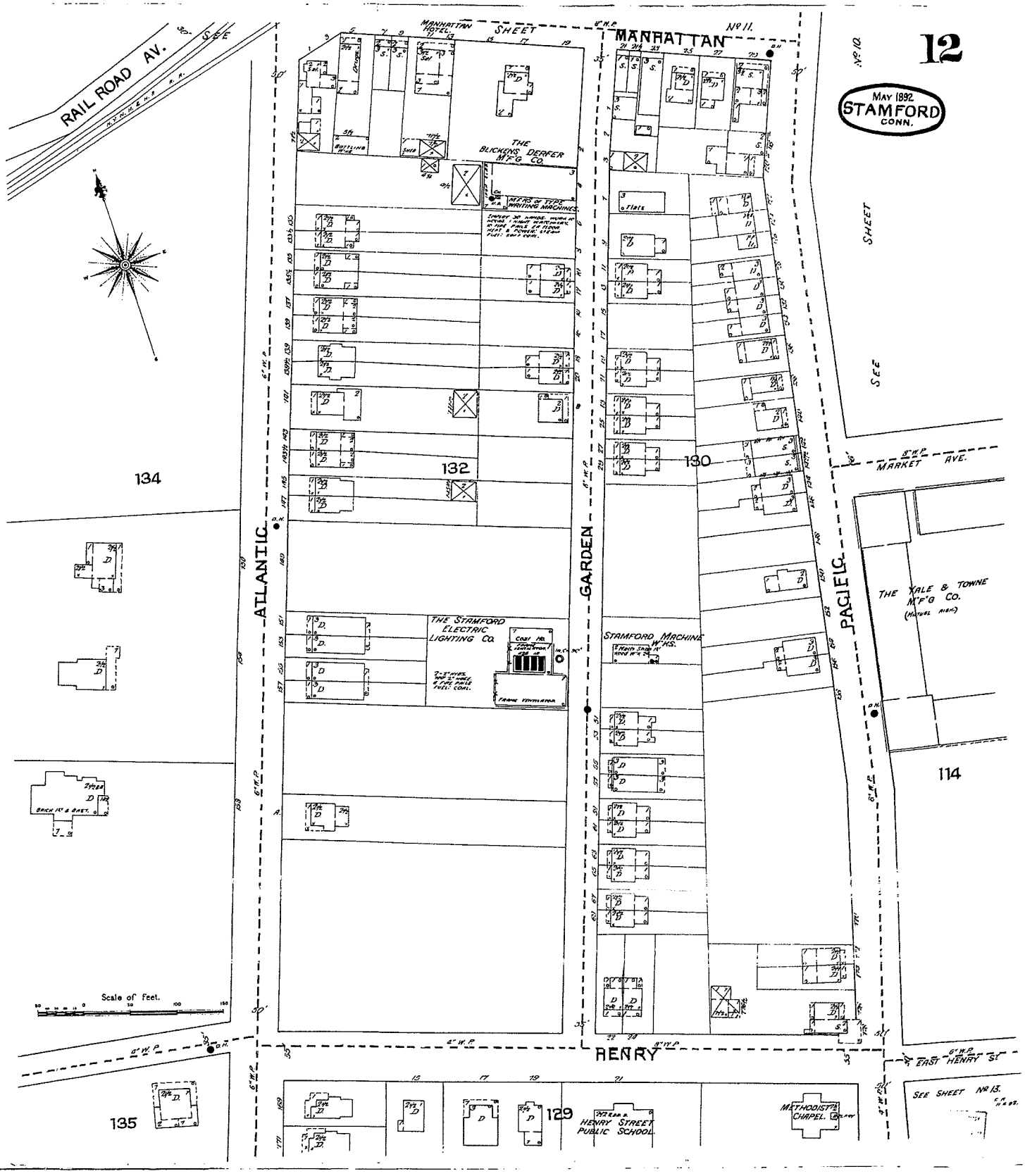


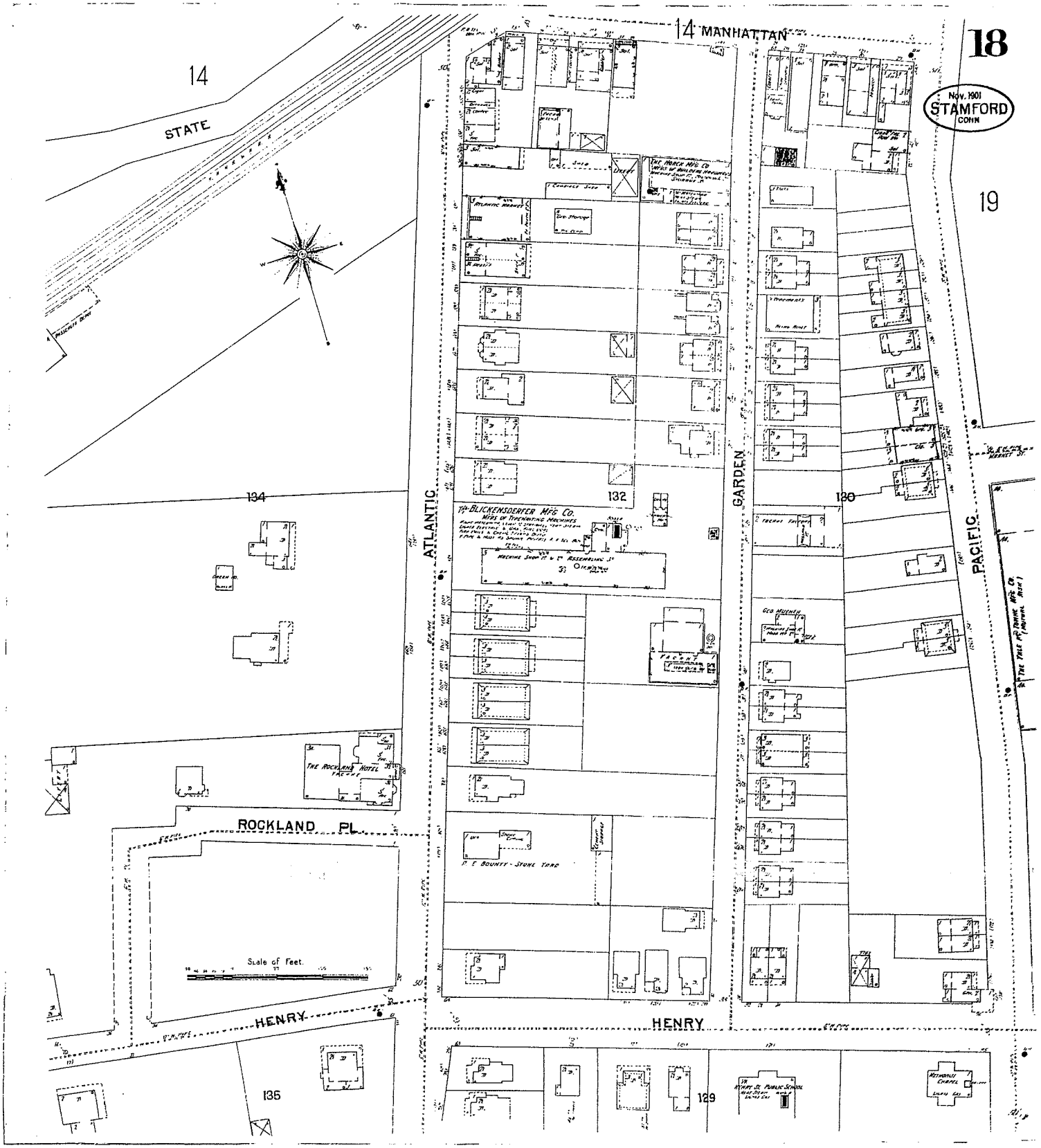
OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
EL1	Elev Elec Fr			B	2		1992	C		A		

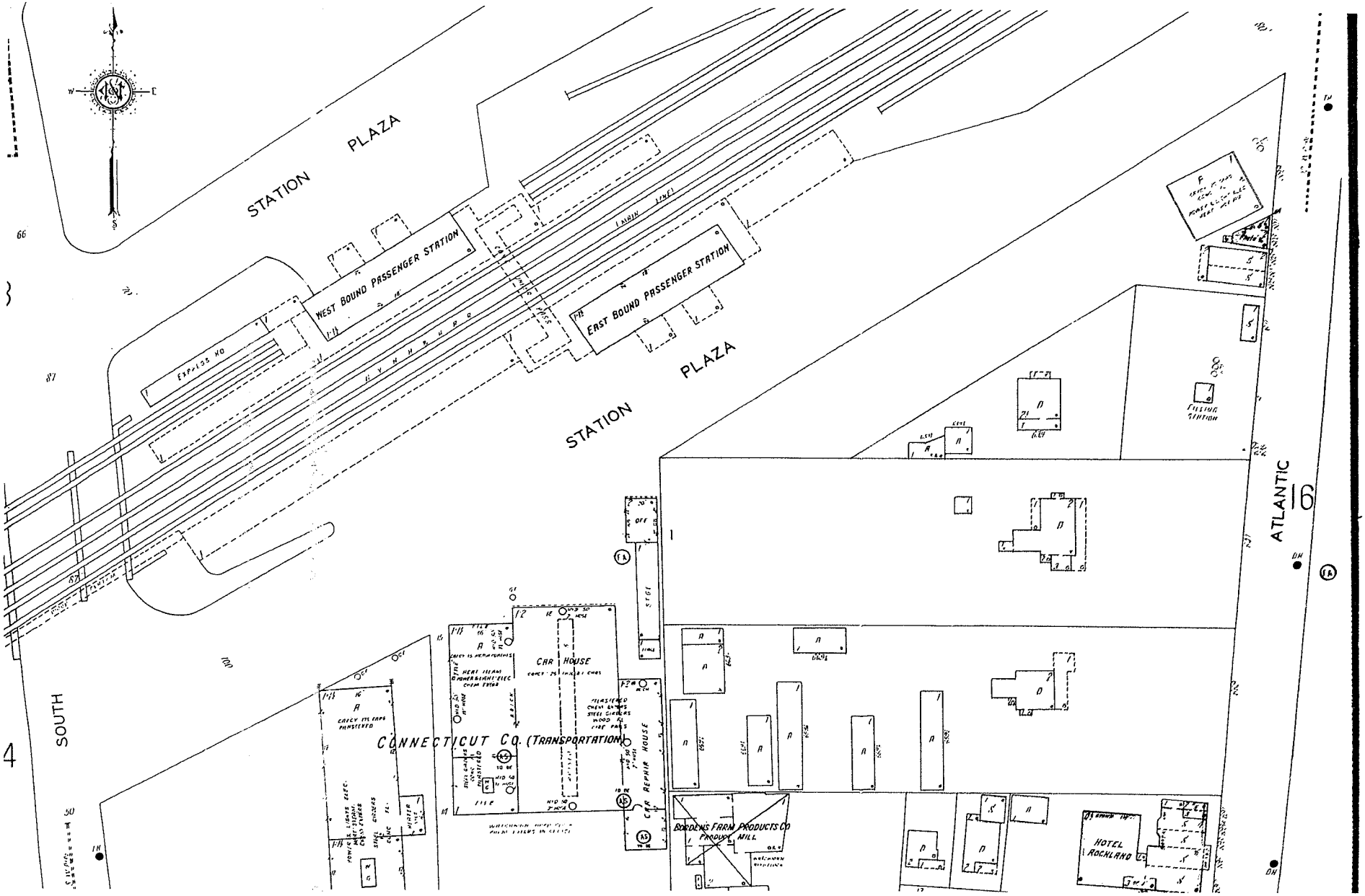
BUILDING SUB-AREA SUMMARY SECTION

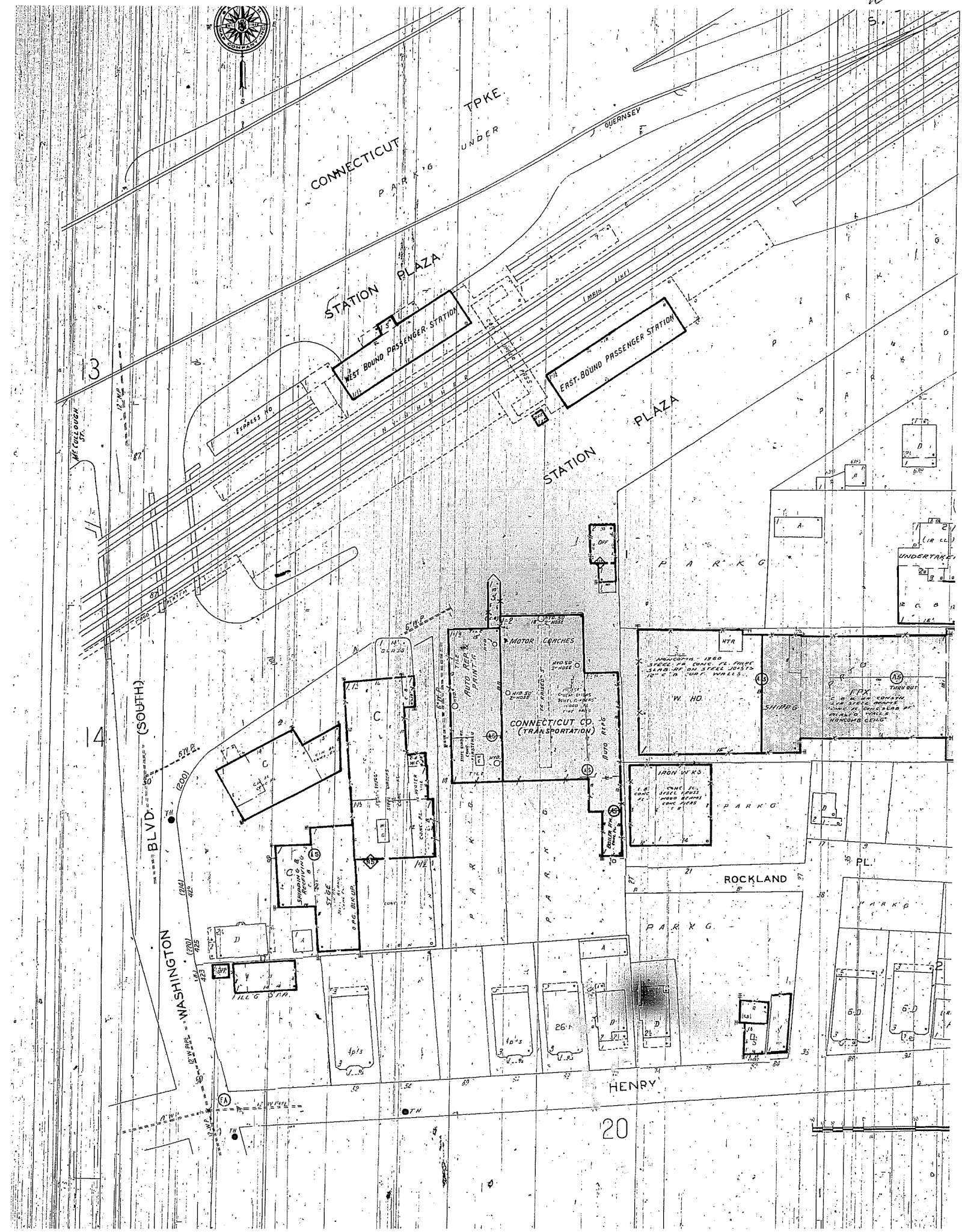
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
PGA	Parking Garage above Grade	0	260,000			
	Ttl. Gross Liv/Lease Area:	0	260,000			

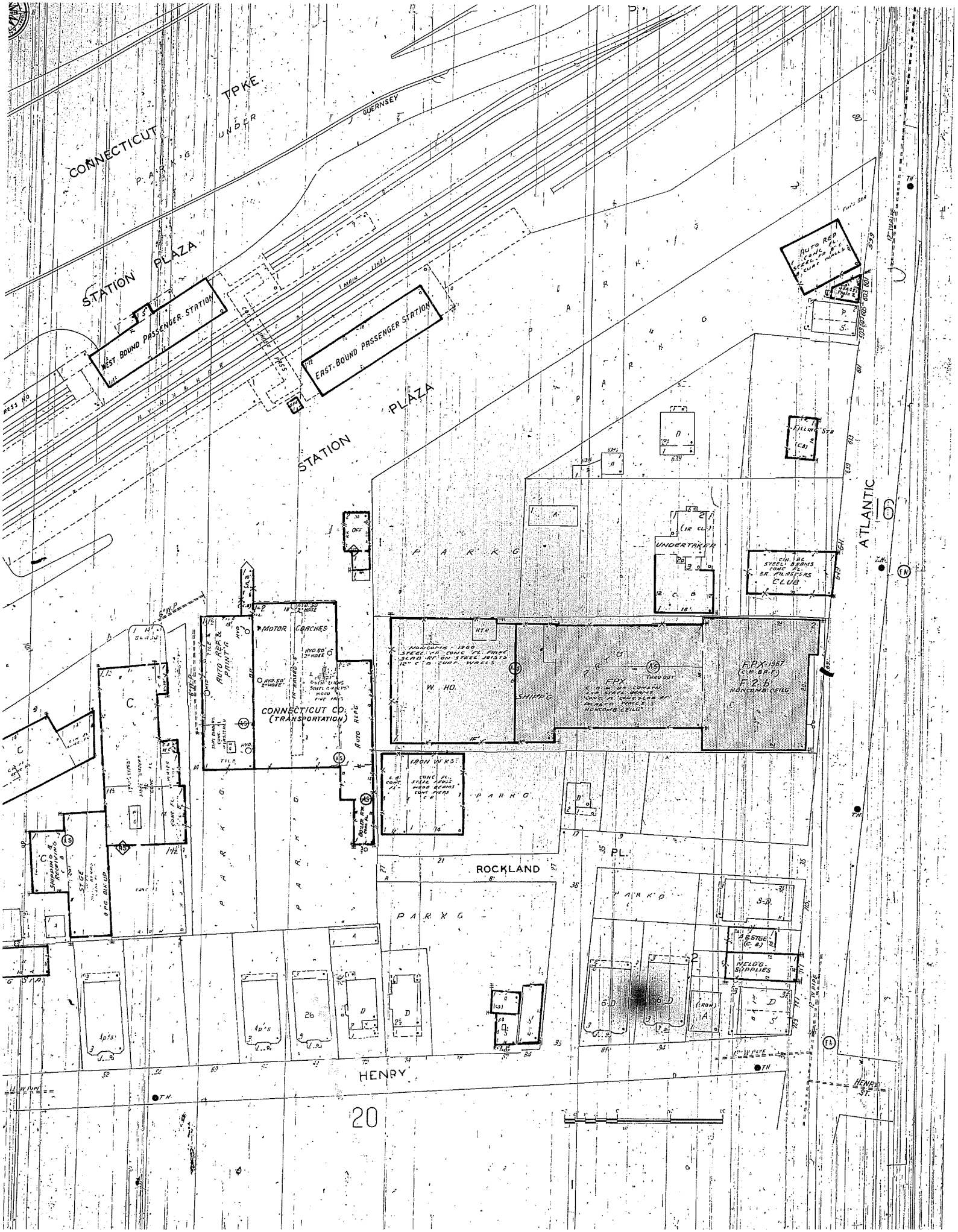

12
MAY 1892
STAMFORD
CONN.
MANHATTAN
SEE SHEET No 11.
SEE SHEET No 12.
RAIL ROAD AV.
ATLANTIC
GARDEN
PACIFIC
MARKET AVE.
HENRY
EAST HENRY ST.
THE BLICKENS DERFER M'F'G CO.
THE STAMFORD ELECTRIC LIGHTING CO.
STAMFORD MACHINE WKS.
THE YALE & TOWNE M'F'G CO.
HENRY STREET PUBLIC SCHOOL
METHODIST CHAPEL
SEE SHEET No 13.
132
130
134
135
129
114
Scale of Feet.


14
STATE
14 MANHATTAN
18
Nov. 1901
STAMFORD
CONN
19
ATLANTIC
GARDEN
PACIFIC
134
132
130
135
129
THE BLICKENSDERFER MFG. CO.
MFRS OF TYPEWRITING MACHINES
THE ROCKLAND HOTEL
ROCKLAND PL
HENRY
HENRY
Scale of Feet.

7
STATE
GUERNSEY ST.
STATION PLAZA
WEST BOUND PASSENGER STATION
EAST BOUND PASSENGER STATION
STATION PLAZA
ATLANTIC
16
SOUTH
4
CAR HOUSE
CONNECTICUT CO. (TRANSPORTATION)
CAR REPAIR HOUSE
BORDENS FARM PRODUCTS CO
PACKING HALL
HOTEL ROCKLAND
ROCKLAND
HENRY
20
HENRY ST.


STATION PLAZA
WEST BOUND PASSENGER STATION
EAST BOUND PASSENGER STATION
EXPRESS HO
STATION PLAZA
ATLANTIC
SOUTH
CAR HOUSE
CONNECTICUT CO. (TRANSPORTATION)
CAR REPAIR HOUSE
BORDENS FARM PRODUCTS CO
PRODUCTS MILL
HOTEL ROCKLAND
FILLING STATION
16
4


CONNECTICUT TPKE.
PARK'G UNDER
GUERNSEY
STATION PLAZA
WEST BOUND PASSENGER STATION
EAST BOUND PASSENGER STATION
EXPRESS HO
STATION PLAZA
PARK'G
UNDERTAKE
MOTOR COACHES
AUTO REP. & PAINT'G
CONNECTICUT CO. (TRANSPORTATION)
W. HO.
SHIPP'G
FPX
IRON WKS.
ROCKLAND PL.
PARK'G
WASHINGTON BLVD. (SOUTH)
HENRY
13
14
20


CONNECTICUT TPKE
PARKG UNDER
GUERNSEY
STATION PLAZA
WEST BOUND PASSENGER STATION
EAST BOUND PASSENGER STATION
STATION PLAZA
PARKG
ATLANTIC
16
UNDERTAKER
CLUB
MOTOR COACHES
AUTO REP & PAINT'G
CONNECTICUT CO. (TRANSPORTATION)
AUTO REP'G
W. HO.
SHIPP'G
FPX
FPX 1967
NONCOMB CEILG
IRON WKS
ROCKLAND PL.
PARKG
HENRY
HENRY ST.
20

CONNECTICUT TURNPIKE
13
MC CULLOUGH
PARKG
STATION PLAZA
15
STEEL RAILROAD BRIDGE
PITNEY-BOWES TRAINING CENTER
FACTORY BLDG
MACHINE SHOP
FACTY BLDG
OFF
CONC FL
WASHINGTON (SOUTH) BLVD
W. HENRY (HENRY)
Rippowam River
20
PULASKI
STEEL BRIDGE
19
WATER ST
BERKELEY ST

OPH-9H-187

R.R.
STATION

The groundwater results have been compared to the CTDEP RSR Surface Water Protection Criteria (SWPC) and Residential Volatilization Criteria (RES VC) and based on the findings of the ***Second Year, 4th Quarter*** post-remediation groundwater monitoring, and subject to the limitations therein, all analytical parameters tested were below the laboratory minimum detection limit and therefore below the applicable CTDEP RSRs.

RECOMMENDATIONS

Results of the post-remediation groundwater-monitoring program at the Site indicates that the groundwater collected from the Site has met the CTDEP post-remediation compliance monitoring requirements of eight (8) consecutive quarters. According to the CTDEP RSRs, "ground-water monitoring in a GB [groundwater classification] area may be discontinued two years, eight (8) consecutive quarters, after cessation of all remediation of such groundwater or soil if the applicable surface-water protection and volatilization criteria have been met."

FIGURES

Figure 1 – Site Locus Plan

Figure 2 – Site Plan

Figure 3 – Ground Water Contour Map, ***Second Year 4th Quarter: August 27, 2004***

TABLES

Table - 1 Groundwater Elevation Data

Table - 2 Groundwater Analytical Results, ***Second Year 4th Quarter: August 27, 2004***

ATTACHMENTS

Attachment 1 – Connecticut Testing Laboratories, Inc. Analytical Results and Chain of Custody

In addition, Mr. Wilcox recommended that groundwater be tested for dissolved lead as lead was detected in the groundwater collected from monitoring wells MW-1, MW-3, MW-5 and MW-6 prior to performance of the soil remediation even though the detected concentrations of lead were below the applicable CTDEP RSRs. CONECO has included the analysis for TPH and dissolved lead in the second and all subsequent post-remediation groundwater-monitoring events.

The schedule for post remediation groundwater monitoring is **1st Quarter:** November 13, 2002 (completed), **2nd Quarter:** January 30, 2003 (completed), **3rd Quarter:** April 30, 2003 (completed), **4th Quarter:** July 30, 2003 and August 19, 2003 (completed), **5th Quarter:** November 3, 2003 (completed), **6th Quarter:** February 5, 2004 (completed), **7th Quarter:** May 27, 2004 (completed) and **8th Quarter:** August 27, 2004.

CONECO completed the ***Second Year, 4th Quarter*** monitoring on August 27, 2004. CONECO's findings are detailed in the attached report, which indicates that the groundwater collected from the Site has been below the CTDEP RSR criteria for eight (8) consecutive quarters.

According to the CTDEP RSRs, "ground-water monitoring in a GB [groundwater classification] area may be discontinued two years, (eight (8) quarters) after cessation of all remediation of such groundwater or soil if the applicable surface-water protection and volatilization criteria have been met." Therefore post remediation groundwater monitoring has been completed in compliance with the CTDEP RSRs.

The next step in the Transfer Act Program Procedures regarding the Site is the licensed environmental professional (LEP) verification that the Site has been remediated in accordance with the CTDEP RSRs. CONECO acting as the LEP pursuant to Section 22a-133v of the General Statutes will prepared the required documentation for submittal to the CTDEP to verify that the Soil Remediation Closure performed in March 2002 and the groundwater monitoring program conducted over the past two years have been performed in accordance with remediation standards and guidelines adopted by the CTDEP RSRs pursuant to Section 22a-133k.

Please contact the undersigned if you have any questions or require additional information.

Sincerely,
Coneco Engineers and Scientists

Michael C. Feldman
Principal / Senior Engineer

Thomas F. McMorrow, P.E., L.E.P.
Senior Engineer

Cc: Mr. Jeffrey B. Wilcox, CTDEP
Mr. John P. Randazzo, ConnDOT

C420Aug2004

CONECO
Engineers & Scientists

RECEIVED
OCT 10 2000

Civil Design & Land Planning
Geotechnical Engineering
Environmental Consulting
Regulatory Compliance & Permitting

October 4, 2000
Project No. 206-CT

BUREAU WATER MANAGEMENT
SITE NAME DOT Commuter Lot
ADDRESS 43 Station Place
OWN Stamford
LE TYPE RECD

Mr. Jeffrey Wilcox
CT Department of Environmental Protection
Permitting, Enforcement and Remediation Division
Bureau of Water Management
79 Elm Street
Hartford, CT 06106-5127

RE: Schedule for Investigation and Remediation
Property: 43 Station Place, Stamford, CT

BBSF, L.L.C. (BBSF) has, through its agent W&M Properties of Connecticut, Inc. retained Coneco Environmental Corporation (CONECO) to provide environmental engineering and licensed environmental professional (LEP) services pursuant to Section 22a-133v of the General Statutes to verify that the investigation of the referenced property (hereafter referred to as the "Site") has been performed in accordance with prevailing standards and guidelines and that the Site has been remedied in accordance with remediation standards and guidelines adopted by the Commissioner of the CDT pursuant to Section 22a-133k. CONECO will file a licensed environmental professional (LEP) verification with the CTDEP once the Site has been remediated.

On behalf of BBSF, CONECO submits this letter to outline the proposed schedule for supplemental subsurface investigation and subsequent remediation of the Site and for providing public notice prior to remediation.

BBSF has authorized CONECO to perform a supplemental subsurface investigation at the Site in an effort to complete the delineation of contaminated soil. As outlined in the ECAF and Form III submitted simultaneously to the CTDEP on May 8, 2000, the Site was formerly used as a vehicle paint shop after May 1, 1967 and automatically qualifies as an Establishment per the Connecticut Property Transfer Act. Soil and groundwater contamination was identified in the northern portion of the Site. Total petroleum hydrocarbons (TPH) were detected in soils exceeding the residential and industrial direct exposure criterion (RDEC and IDEC) and GB Pollutant Mobility Criteria (PMC). Arsenic in soils was found to exceed the RDEC and IDEC.

A total of 467.98 tons of contaminated soil was excavated and disposed of off-Site. Seven confirmatory soil samples were collected and analyzed for TPH, RCRA metals via mass analysis and SPLP, semi-volatile compounds (SVOCs) and volatile organic compounds (VOCs). The results of confirmatory sample analysis indicated that the concentrations of all analytical parameters were below numeric criteria in the RSRs with the exception of two samples, which exceed the GB PMC and RDEC.

These two samples were collected from soils located on the sloped sidewalls of the remediation excavation from soils left in place to maintain the structural integrity of the adjacent parking car garage.

Two additional areas of concern remain too be investigated. CONECO proposes to conduct a supplementary subsurface investigation in these areas to determine the extent of contamination and subsequently perform soil remediation if necessary.

Prior to initiation of any remediation at the Site, BBSF will provide public notice pursuant to Section 22a-134(j) of the Connecticut General Statutes.

The objectives of the proposed supplemental investigation are as follows:

- Define the degree and extent of the release areas as required in Connecticut's Remediation Standard Regulations (CT RSRs); and
- Obtain sufficient subsurface data to adequately evaluate site conditions and to compare to applicable CT RSR criteria.

The borings will be advanced using split spoon sampling techniques. During advancement of the soil borings, subsurface soil samples will be collected for screening and laboratory analysis. Upon retrieval, all soil samples will be screened for VOCs using an HNu photoionization detector, visually inspected, classified, and logged. Boring/sample logs will be prepared with descriptions of soil characteristics. Specifically, visual, textural and olfactory observations and HNu screening results will be indicated on the soil boring/sample logs.

Based on the results of the field screening, select soil samples will be submitted to a Connecticut-certified analytical laboratory for analysis of TPH by EPA Method 418.1 and RCRA metals mass analysis and SPLP. At a minimum, two soil samples from each soil boring will be submitted for laboratory analyses. CONECO has estimated that a total of twenty (20) soil samples will be submitted to the laboratory for the above analyses.

Following completion of the investigation and receipt of laboratory analytical data, CONECO will prepare and submit a Report of Findings. In general, the report will describe the activities completed and, present the findings and conclusions of the investigation. The report will include the following:

- Boring and Soil Sample logs;
- Surveyed Site Plan with borings;
- Analytical results of soil samples;
- An evaluation of site conditions and comparison to applicable CT RSR criteria;
- Findings and Conclusions; and
- Recommendations, if any, for further action including soil remediation if necessary.

BBSF has tentatively scheduled the supplemental subsurface investigation for October or November 2000.

Based on the results of the investigation, if soil remediation is necessary it will be scheduled for the spring or summer of 2001.

If results of the proposed investigation determine that no further soil remediation is required, post-remedial groundwater monitoring would be initiated on a quarterly basis as required by the RSRs to determine the effectiveness of the prior soil remediation.

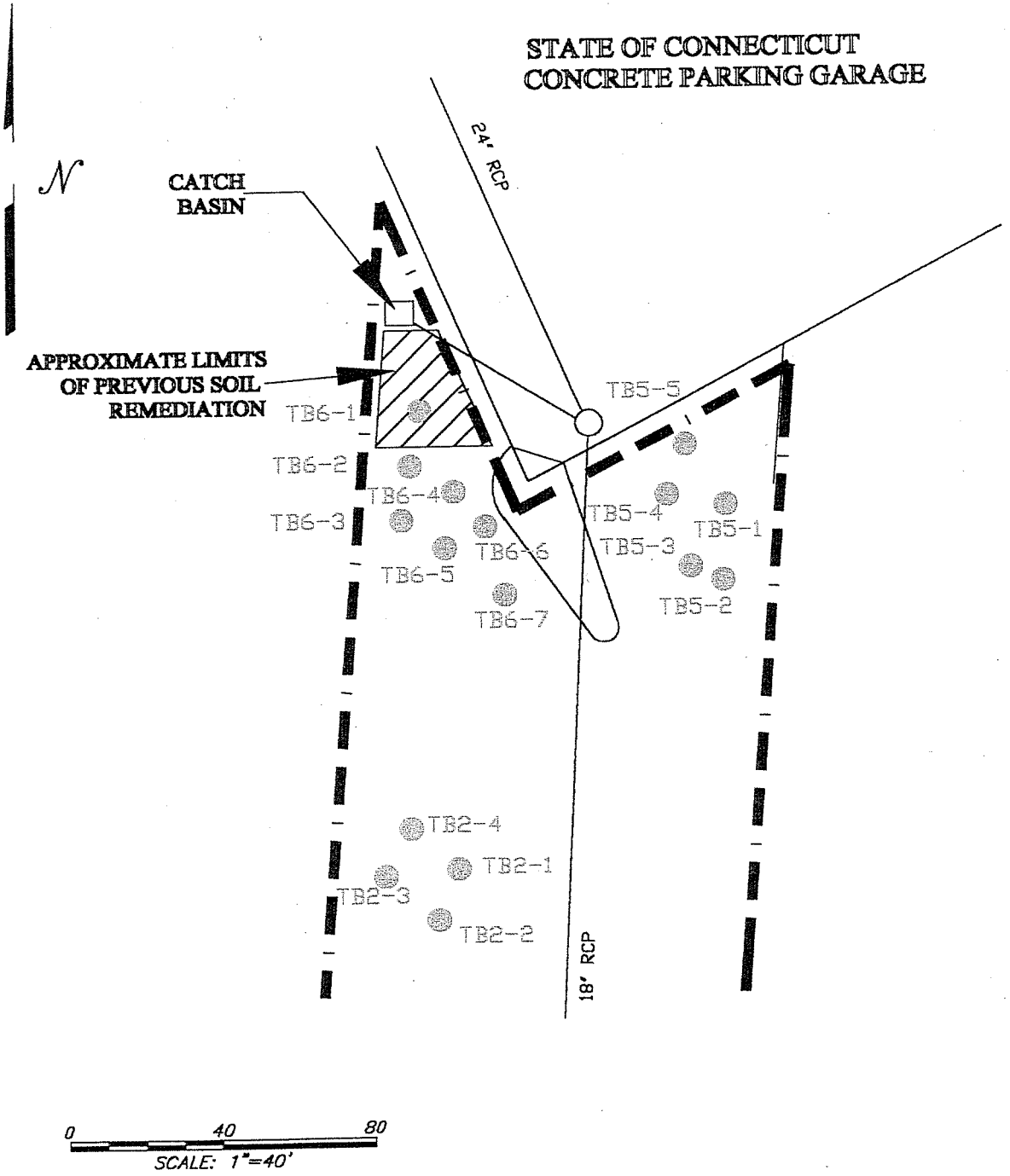
BBSF will submit any technical plans and reports to the CTDEP on an annual basis.

If you have any questions regarding the proposed schedule for the investigation and remediation of the Site please do not hesitate to contact Mr. Jeffrey H. Newman of W&M Properties of Connecticut, Inc., at (203) 353-5200 or the undersigned at (860) 659-8558.

Sincerely,
Coneco Environmental Corporation - CT

Michael C. Feldman
Principal

cc: Mr. Jeffrey H. Newman, W&M Properties of CT, Inc.
Mr. Anthony E. Malkin, W&M Properties, of CT, Inc



CONECO
Engineers & Scientists

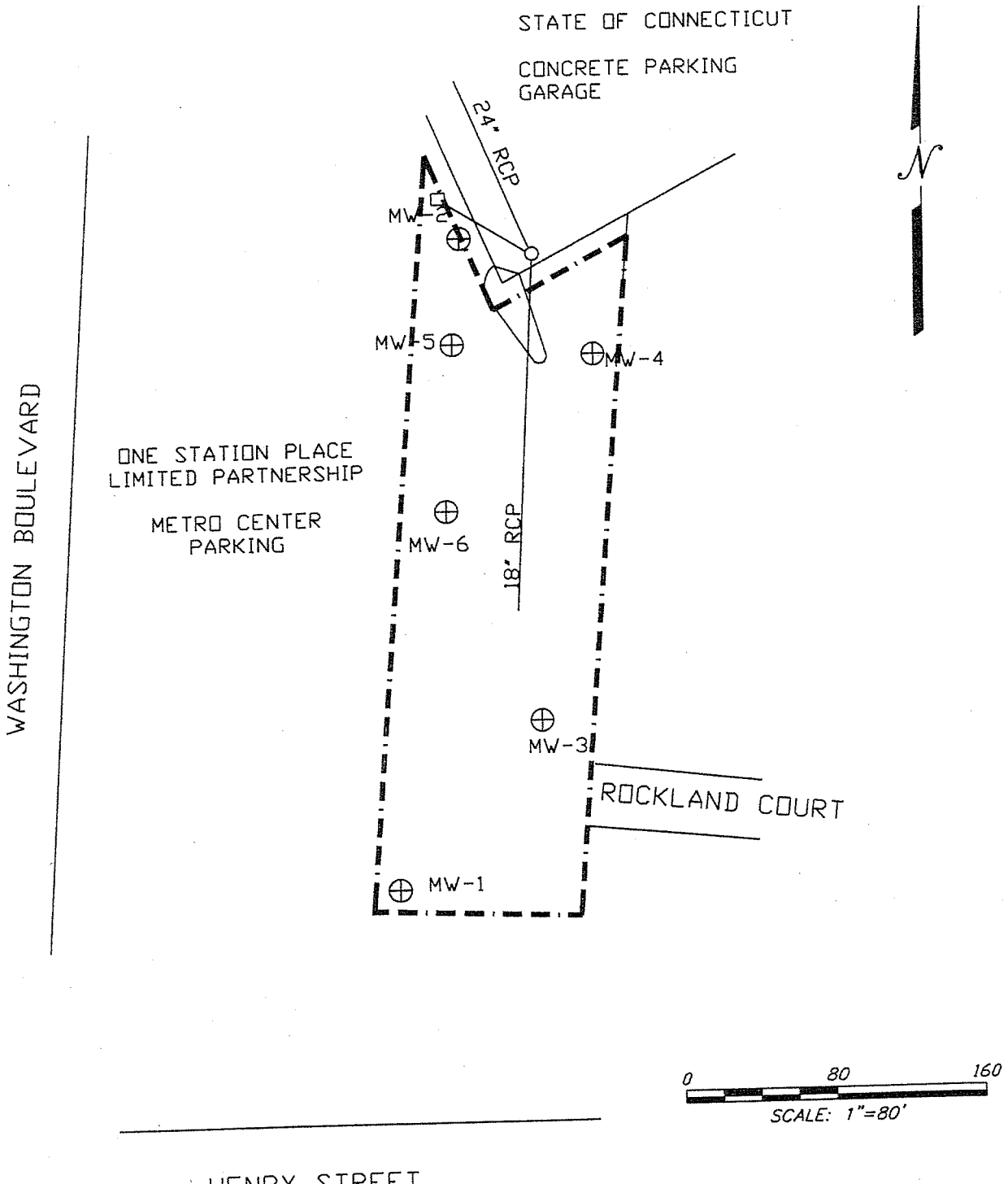
90 NATIONAL DRIVE, GLASTONBURY, CONNECTICUT (860) 659-8558

SOIL BORING LOCATIONS

CT DOT SURFACE GARAGE
ONE STATION PLACE
STAMFORD, CONNECTICUT

	DRAWN	CHECKED	APPROVED
BY	T.F.M.	M.C.F	
DATE	10/01/01	10/02/01	

SCALE	PROJECT NO.	DRAWING NUMBER
1" = 40'	C206	FIGURE 2



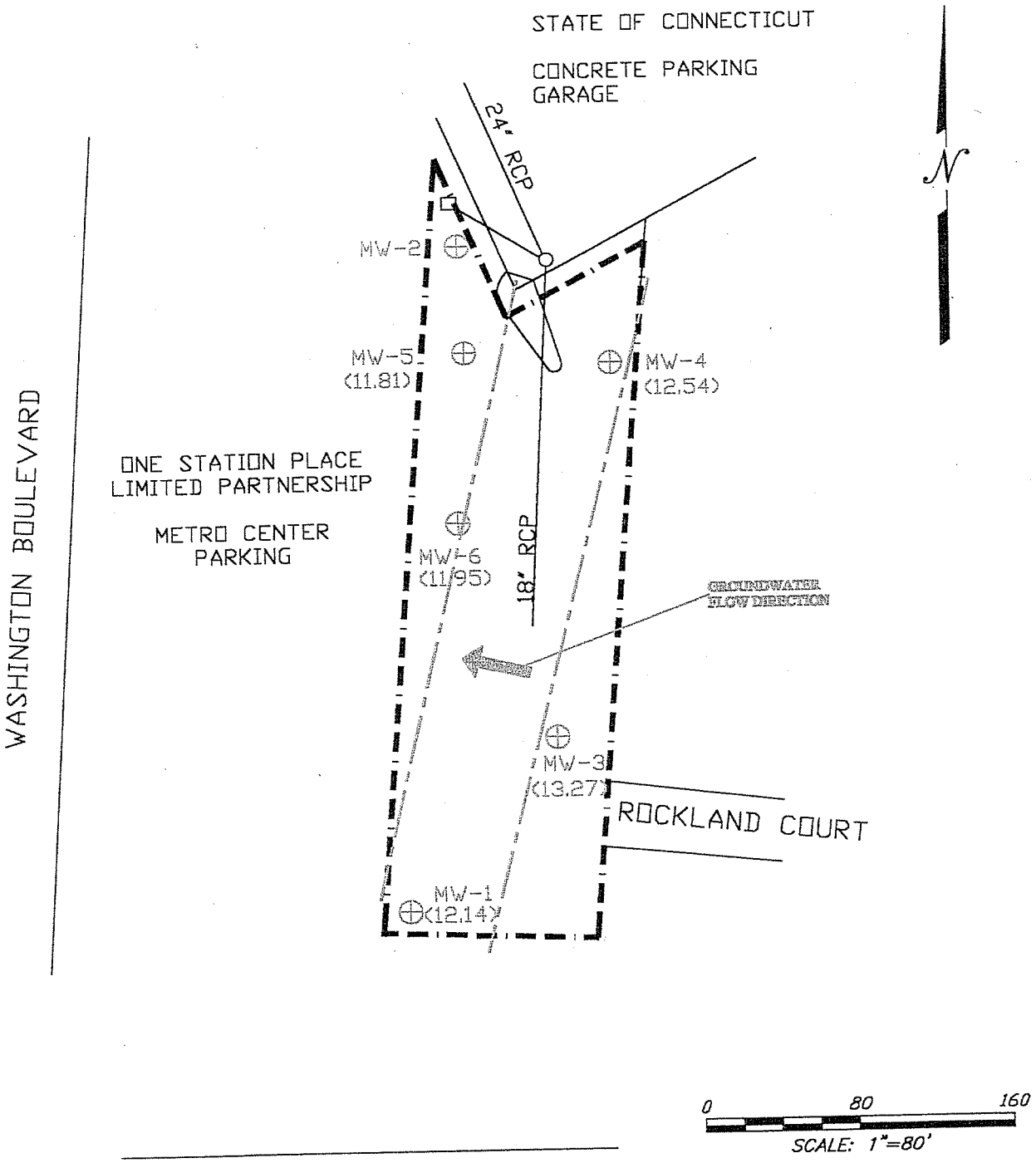
SITE PLAN

CT DOT SURFACE GARAGE
ONE STATION PLACE
STAMFORD, CONNECTICUT

CONECO
Engineers & Scientists
90 NATIONAL DRIVE, GLASTONBURY, CONNECTICUT (860) 659-8558

	DRAWN	CHECKED	APPROVED
BY	T.F.M.		
DATE	10/01/01		

SCALE	PROJECT NO.	DRAWING NUMBER
1" = 80'	C206	FIGURE 1

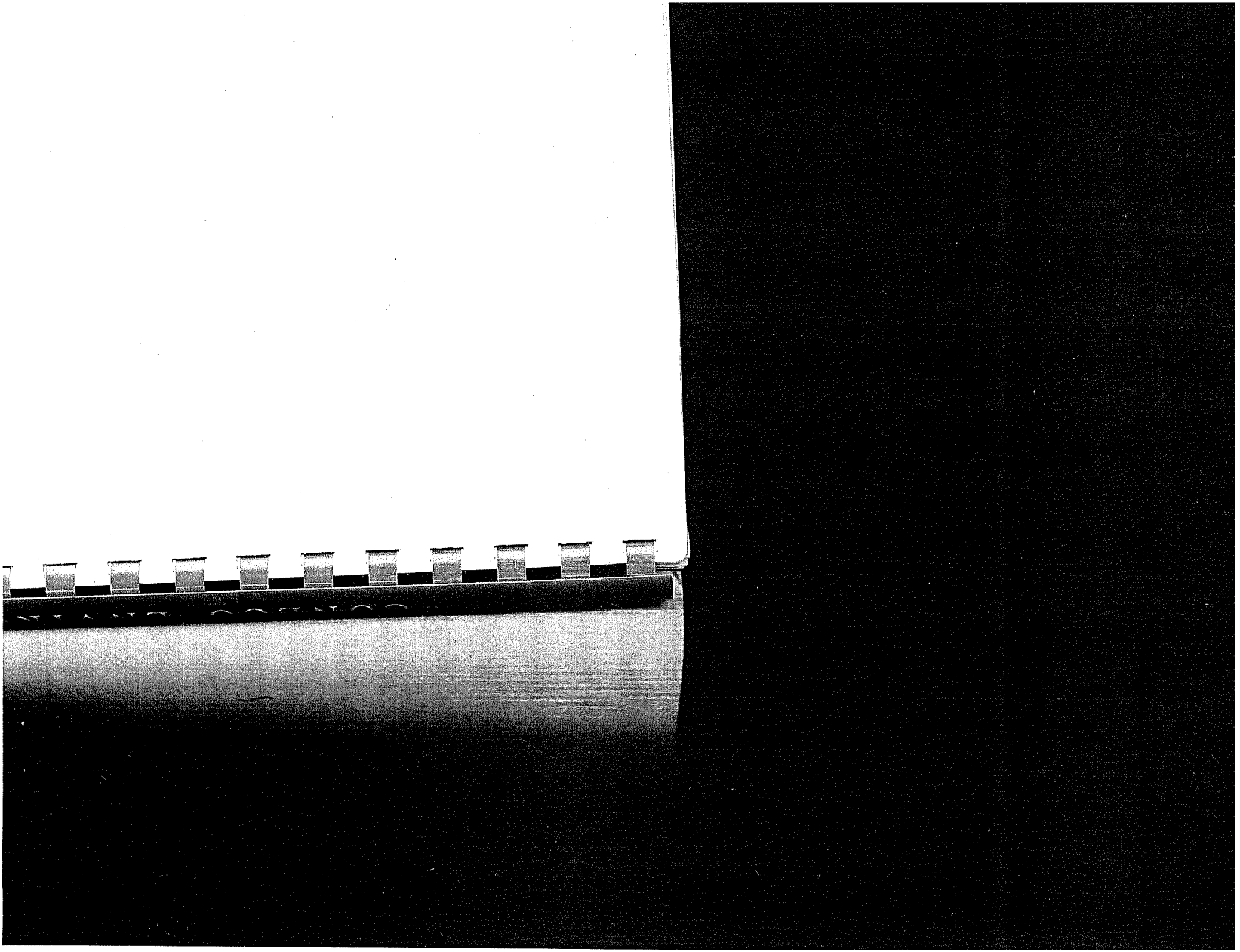


GROUNDWATER CONTOUR PLAN

CT DOT SURFACE GARAGE
ONE STATION PLACE
STAMFORD, CONNECTICUT

CONECO
Engineers & Scientists
90 NATIONAL DRIVE, GLASTONBURY, CONNECTICUT (860) 659-8558

	DRAWN	CHECKED	APPROVED	SCALE	PROJECT NO.	DRAWING NUMBER
BY	T.F.M.			1" = 80'	C206	FIGURE 3
DATE	10/01/01					



- Field screening of soil samples for VOCs using an HNU PID indicated that some VOCs were likely present at low concentrations in all three areas of the investigation. In addition petroleum stained soil was observed in all three areas at different depths indicating likely historic releases from on-site sources.

- Soil sample analytical results for VOCs and RCRA metals (SPLP) indicated that there were no exceedances of the applicable RSRs.

- TPH was identified in the soil samples collected from eighteen of the twenty-five soil borings performed on-Site. The following seven soil borings indicated levels of TPH that exceed the RES DEC and the GB PMC; TB-2/1 4 to 6 feet, TB-2/3 4 to 6 feet, TB-5/3 4 to 6 feet, TB-5/4 0 to 2 feet, TB 6/2 14-16 feet, TB-6/2 16 to 18 feet, and TB-6/6 10 to 12 feet.

Based on the findings of the Phase II Subsurface Investigation performed at the site, and subject to the limitations therein, it appears that hazardous material in the form of total petroleum hydrocarbons (TPH) have been released at the Site. Soil contaminated with TPH in excess of the CTDEP RSRs has been identified in the following three areas:

Area 1:

Northwest corner of the Site in an area identified as TB-6 near former monitoring well MW-2 where prior soil remediation was performed in July 1998. TPH contaminated soil was identified at 10 to 12 feet below grade at boring TB-6/6 (860) and 14 to 18 feet below grade at boring TB-6/2 (550 ppm and 1,300 ppm). The RSRs would not apply to those samples collected from TB-6/2 because they are considered for "inaccessible" and below the seasonal high groundwatere table.

Area 2:

Northeast corner of the Site in an area identified as TB-5 where elevated concentrations of contaminants were identified during the previous Phase II ESA (December 1997). TPH contaminated soil was identified at 4 to 6 feet below grade at boring TB-5/3 (870 ppm) and 0 to 2 feet below grade at boring TB-5/4 (7,300 ppm).

Area 3:

Western portion of the Site identified, as TB-2 where elevated concentrations were identified during the previous Phase II ESA (December 1997). TPH contaminated soil was identified at 4 to 6 feet below grade at boring TB-2/1 (1,500 ppm) and TB 2/3 (620 ppm).

7.0 RECOMMENDATIONS

The presence of petroleum related constituents in soils at the Site, indicate residual contamination from historic releases. Soil samples collected and analyzed subsequent to soil remediation activities performed in July 1998 and the Phase II Subsurface Investigation which is the subject of this report indicate that soil contaminated with TPH concentrations that exceed the applicable CTDEP RSR criteria remain on-Site.

To comply with State regulations, CONECO recommends performing a limited soil remediation in the three areas ***(Area 1, Area 2, and Area 3)*** identified with elevated concentrations of TPH described above. The limited soil remediation includes the excavation of the identified areas of impacted soil, screening excavated soils to ensure that only those soils exceeding the State of Connecticut standards are removed from the Site and disposed of at a licensed facility, collection of post-remediation samples to confirm that all soils exceeding the standards have been properly removed, and preparation of a closure report following completion of the project.

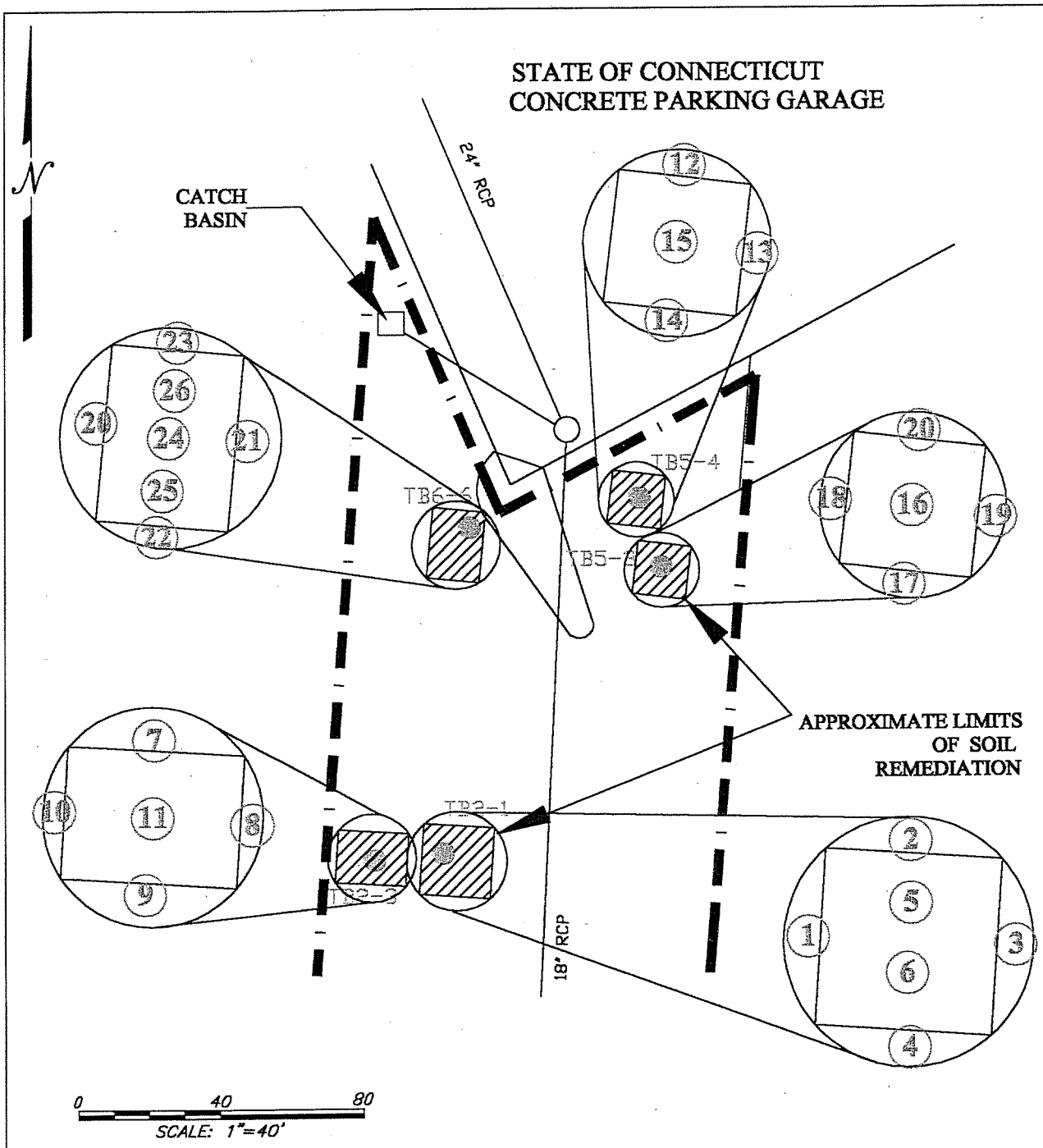
In addition quarterly groundwater monitoring on the Site monitoring wells located in the vicinity of the remediation area would be required to be monitored after completion of soil remediation activities. If all groundwater sample results meet the applicable criteria, then the groundwater monitoring program can be discontinued after two years.

8.0 REFERENCES

- Transfer Act Site Assessment Guidance Document, CTDEP, June 1989, revised November 1991.
- State of Connecticut, Department of Environmental Protection (CT DEP), Remediation Standard Regulations (Section 22a-133k-1 through 22a-133k-3), January 1996.
- Water Quality Classifications - CTDEP - Water Compliance Unit, February 1993.
- Surficial Materials Map of Connecticut, Stone et. al., 1992.
- Bedrock Geological Map of Connecticut, Rodgers, 1985.

9.0 LIMITATIONS

The conclusions expressed by CONECO in this report are based solely on the references cited. Observations were made under the conditions stated. The purpose of this report was to describe current Site conditions and to evaluate whether there is evidence that petroleum products or hazardous substances r4emain on-Site and have impacted the Site.



CONECO
Engineers & Scientists

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CONFIRMATORY SOIL SAMPLE LOCATIONS

CT DOT SURFACE GARAGE
ONE STATION PLACE
STAMFORD, CONNECTICUT

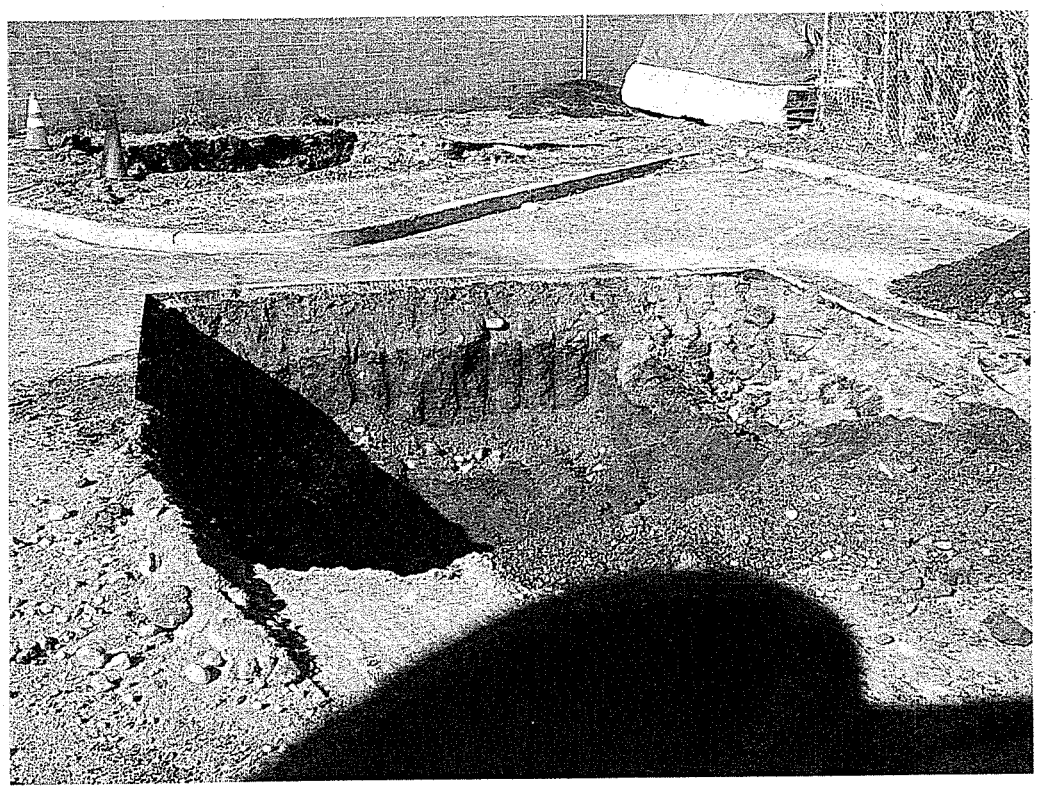
	DRAWN	CHECKED	APPROVED
BY	T.F.M.	M.C.F	
DATE	04/02/02	04/02/02	

SCALE	PROJECT NO.	DRAWING NUMBER
1" = 40'	C344	FIGURE 5

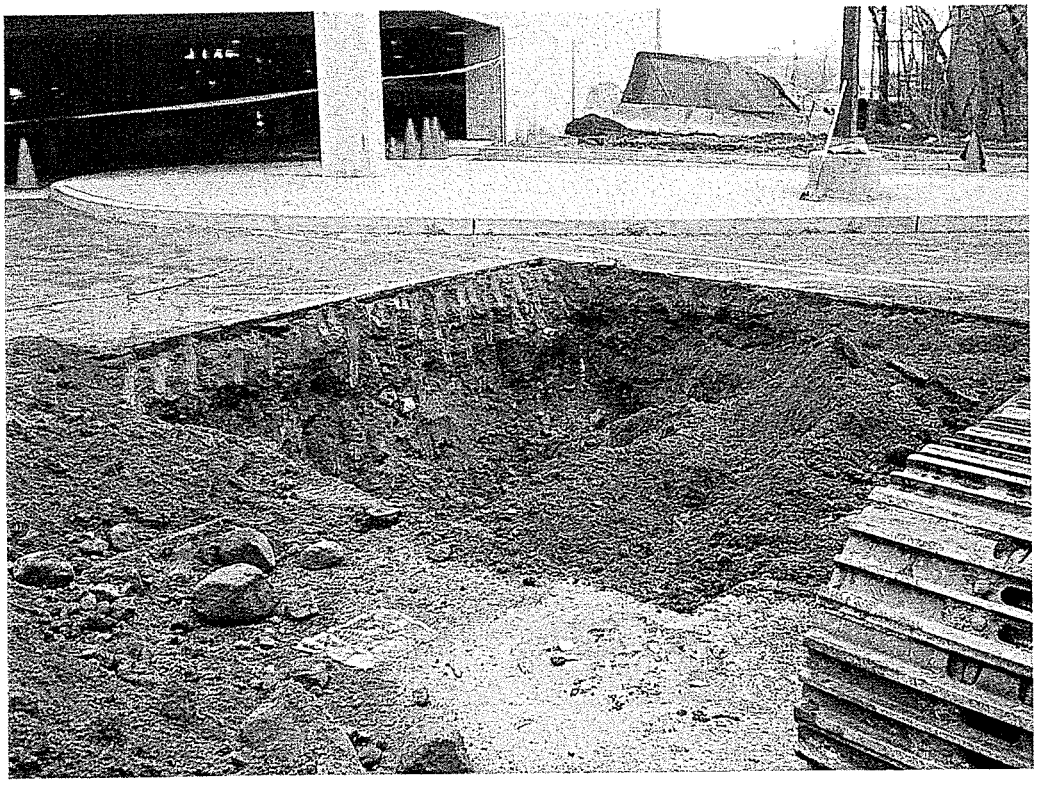
TABLE 1
Confirmatory Soil Samples
43 Station Place
Stamford, CT

Area of Concern (AOC)	Confirmatory Soil Sample ID	TPH Concentration (ppm)
Area 3 (TB-2)	S-1	BDL
Area 3 (TB-2)	S-2	BDL
Area 3 (TB-2)	S-3	BDL
Area 3 (TB-2)	S-4	BDL
Area 3 (TB-2)	S-5	BDL
Area 3 (TB-2)	S-6	BDL
Area 3 (TB-2)	S-7	BDL
Area 3 (TB-2)	S-8	BDL
Area 3 (TB-2)	S-9	BDL
Area 3 (TB-2)	S-10	BDL
Area 3 (TB-2)	S-11	BDL
Area-2 (TB-5)	S-12	104
Area-2 (TB-5)	S-13	116
Area-2 (TB-5)	S-14	132
Area-2 (TB-5)	S-15	84
Area-2 (TB-5)	S-16	84
Area-2 (TB-5)	S-17	192
Area-2 (TB-5)	S-18	208
Area-2 (TB-5)	S-19	BDL
Area-2 (TB-5)	S-20	BDL
Area 1 (TB-6)	S-21	BDL
Area 1 (TB-6)	S-22	BDL
Area 1 (TB-6)	S-23	BDL
Area 1 (TB-6)	S-24	BDL
Area 1 (TB-6)	S-25	BDL
Area 1 (TB-6)	S-26	BDL

Notes: Total Petroleum Hydrocarbons = TPH
Parts per million (mg/kg) = ppm
BDL = Below the laboratory minimum detection limit. (< 25 ppm).
Connecticut Department of Environmental Protection = CTDEP
Remediation Standard Regulations = RSRs
CTDEP Residential Direct Exposure Criteria (RES DEC) for TPH = 500 ppm
CTDEP Pollutant Mobility Criteria, GB Groundwater Classification = 2,500 ppm



Area 2 Excavation at TB5-3, impacted soil at 4 to 6-feet below grade.



Area 1 Excavation at TB6-6, impacted soil at 10 to 12-feet below grade.