

The "X" Planning Study Springfield, Massachusetts

To: Mr. Christopher M. Cignoli, P.E.
Director, Department of Public Works
Springfield Engineer Division
70 Tapley Street
Springfield, MA 01104

FROM: Paul M. Furgal, P.E., PTOE
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DATE: June 30, 2016

Tighe & Bond, Inc. (Tighe & Bond) has prepared this memorandum for traffic engineering and transportation planning efforts associated with the "X" intersection and surrounding area in Springfield, Massachusetts. The "X" intersection consists of the Sumner Avenue intersection with Belmont Avenue and Dickinson Street in the Forest Park section of the City. The layout of the "X" intersection is more emblematic of an asterisk shape, with six approaches to the intersection, which results in a heavily congested junction.

The "X" intersection serves not only the local population, but also regional transportation interests as workforce commuters from adjacent communities traverse the intersection morning and night. The Sumner Avenue corridor is the primary gateway to one of the nation's largest urban parks, yet offers limited pedestrian and bicycle connections. The "X" intersection is not well branded and lacks common way finding themes and signage to local businesses and attractions. The intent of the "X" planning study is to develop improvement concepts that would assist the City in advancing the project to be constructed under the local Transportation Improvement Plan (TIP). The following provides a summary of the findings associated with these efforts.

INTENT

Due to an increase of vehicular and pedestrian traffic along Sumner Avenue, Belmont Avenue, and Dickinson Street in the Forest Park section of the City of Springfield, delays, safety, and connectivity have become a major concern for residents, school-age children, motorists, and business owners. Enhancing the integration and connectivity of the transportation system in this area is an important component in developing an efficient network that appropriately accommodates various modes of transportation. A fully integrated and connected multi-modal transportation system is important for maintaining the quality of life of residents and workers, as well as a vibrant economy. Access Management strategies are also key in improving safety and efficiency by balancing the mobility and access needs of roadway users and enhance safe and efficient property access.

While the "X" intersection has been a bottleneck for vehicular traffic for years, minor improvements have been implemented to lessen major transportation concerns. Although these improvements have resulted in some operational efficiency, major improvements are needed to alleviate traffic congestion, enhance multi-modal mobility, and improve pedestrian facilities to be in compliance with Americans with Disabilities Act (ADA) regulations.

As part of the traffic engineering and transportation planning efforts for the "X" planning study, a number of improvement concepts have been developed to include intersections, roadways, streetscapes, and non-motorized modes of transportation. The improvements have been designed in accordance with Massachusetts Green Department of Transportation (GreenDOT) Policy Initiative in an effort to reduce greenhouse gas (GHG) emissions, promote healthy transportation alternatives (i.e., walking cycling, and public transit), and support Smart Growth development. In addition, the improvements have been developed with a Complete Streets approach to provide safe and appropriate accommodations for different roadway users (i.e., motorists, pedestrians, cyclists, and transit users).

TRANSPORTATION DATA COLLECTION

Based on discussions with City of Springfield Department of Public Works officials and familiarity of the area, base traffic conditions within the study area were developed by conducting manual turning movement counts (TMCs), transportation mode classification counts (i.e., passenger vehicles, trucks, pedestrians, and cyclists), and automatic traffic recorder (ATR) counts in May 2015.

Existing Traffic Volumes

Intersection Counts

The intersection traffic counts were performed during the Weekday AM peak period (7:00 to 9:00 AM), Weekday Midday peak period (2:00 to 4:00 PM), and the Weekday PM peak period (4:00 to 6:00 PM) to capture school and commuter peak-hour traffic volumes at the following "study area" intersection locations:

- Sumner Avenue (Route 83) at Main Greeting Road (Forest Park main entrance)
- Sumner Avenue (Route 83) at Oakland Street
- Sumner Avenue (Route 83) at Cliftwood Street
- Sumner Avenue (Route 83) at Beaumont Street
- Sumner Avenue (Route 83) at Belmont Avenue and Lenox Street
- Sumner Avenue at Belmont Avenue and Dickinson Street
- Sumner Avenue at Belmont Avenue (Route 83)
- Sumner Avenue at Ventura Street
- Sumner Avenue at Ormond Street
- Sumner Avenue at Daytona Street
- Sumner Avenue at Daytona Street Sumner Avenue at White Street
- Dickinson Street at Burlington Street and Grenada Terrace
- Dickinson Street at Cliftwood Street and Trenton Street
- Dickinson Street at Trafton Road and Hollywood Street
- Belmont Avenue at Oakland Street
- Belmont Avenue at Beaumont Street
- Belmont Avenue (Route 83) at Commonwealth Avenue
- Belmont Avenue (Route 83) at Ormond Street

- Belmont Avenue (Route 83) at Walden Street
- Belmont Avenue (Route 83) at Hollywood Street and Daytona Street

Roadway Segment Counts

The ATRs were used to collect weekday daily traffic-volume counts over a 72-hour period along the following locations:

- Sumner Avenue (Route 83) between Beaumont Street and Belmont Avenue
- Sumner Avenue between Belmont Avenue (Route 83) and Ormond Street

In addition, vehicular travel speeds and vehicle classification counts were collected to help provide a broad understanding of travel patterns and transportation types within the vicinity of the "X."

Summary

The following graphics (Sheets 1 through 3: 2015 Existing Traffic Volumes) depict the existing traffic volumes within the study area during the Weekday AM, Weekday Midday, and Weekday PM peak hours.

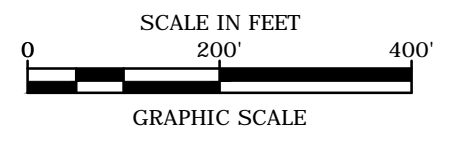
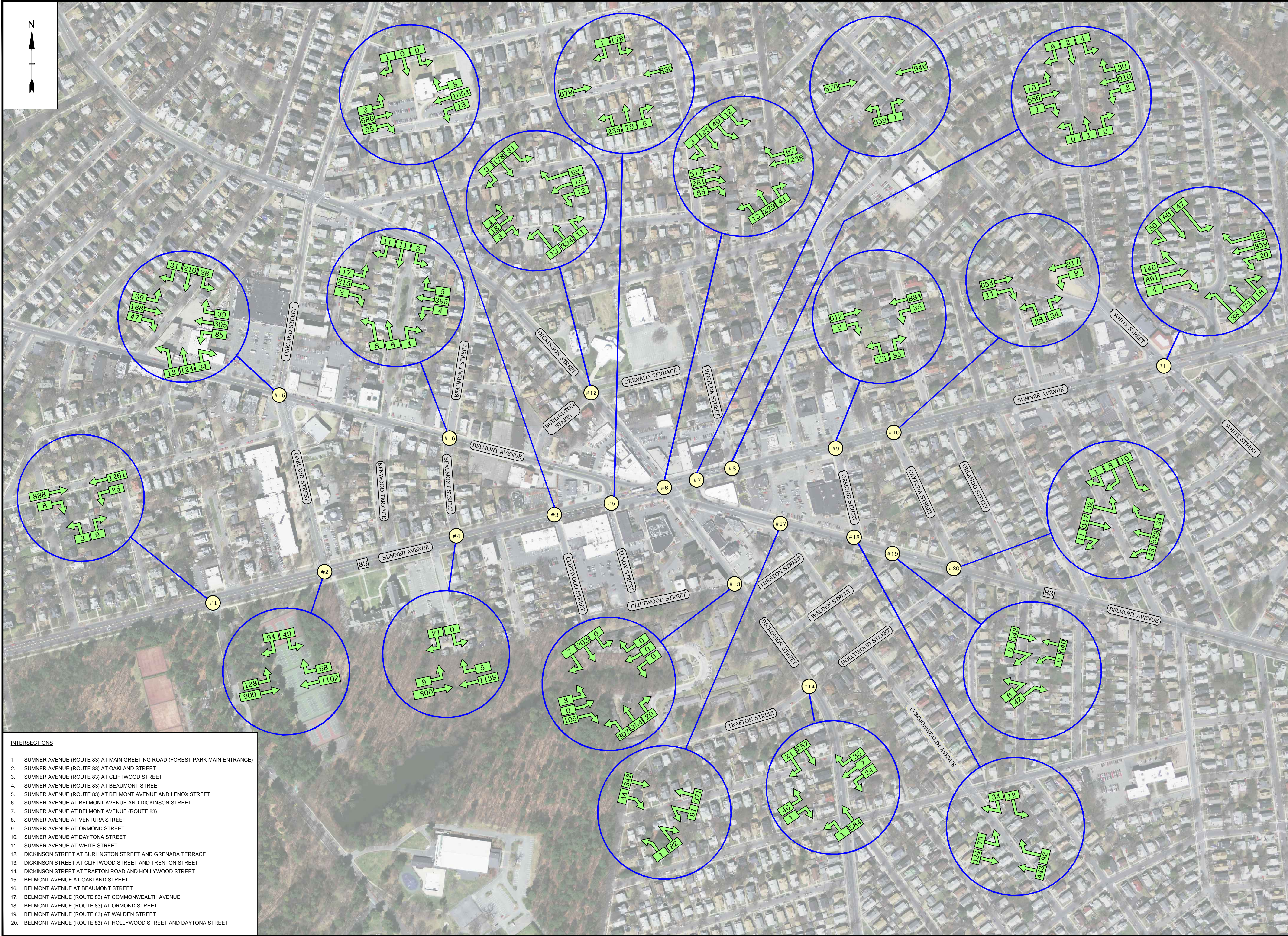
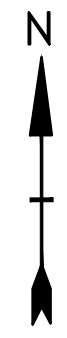
Public Transportation

The Pioneer Valley Transit Authority (PVTA) is a regional transit authority that oversees and coordinates public transportation in the Pioneer Valley of Western Massachusetts. The City of Springfield is a member community within the Pioneer Valley and is served by the PVTA.

Fixed Route Bus Service

The PVTA provides fixed route bus service within the "X" area in the form of Green Bus Routes 1, 2, and 5. A summary of the PVTA schedules are as follows:

- **Green Bus Route 1:** begins at the Big Y supermarket in Chicopee and makes stops at Chicopee Center and Springfield Bus Terminal. Green Bus Route 1 then turns onto Sumner Avenue at Forest Park and makes stops at the "X." This route then makes stops in East Longmeadow at the Benton Drive intersection with Dwight Road and at the Big Y supermarket. This route runs between 5:00 AM and 10:18 PM on weekdays, between 6:00 AM and 9:28 PM on Saturdays, and between 7:00 AM and 8:20 PM on Sundays.
- **Green Bus Route 2:** begins at the Memorial Industrial Park in Springfield and makes stops at Mercy Hospital and Springfield Bus Terminal. Green Bus Route 2 then turns onto Belmont Avenue and makes stops at the "X" and Riverbend Medical Center, then stops at Canon Circle and Five Town Plaza. This route runs between 5:35 AM and 10:10 PM on weekdays, between 5:37 AM and 9:30 PM on Saturdays, and between 9:00 AM and 7:00 PM on Sundays.
- **Green Bus Route 5:** begins at Springfield Bus Terminal in Springfield and makes a stop at the "X" via Dickinson Street. Green Bus Route 5 travels into Longmeadow making stops at the Redstone Rehab & Nursing Center and at the Longmeadow Street intersection with Williams Street. This route then terminates at MassMutual Bright Meadow Campus in Enfield, Connecticut. Green Bus Route 5 runs between 6:15 AM and 7:55 PM on weekdays, and between 7:30 AM and 6:30 PM on Saturdays.



**Springfield
 "X" Intersection
 Traffic Volumes**
 Springfield,
 Massachusetts

INTERSECTIONS

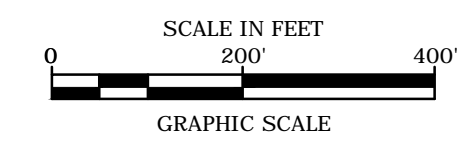
1. SUMNER AVENUE (ROUTE 83) AT MAIN GREETING ROAD (FOREST PARK MAIN ENTRANCE)
2. SUMNER AVENUE (ROUTE 83) AT OAKLAND STREET
3. SUMNER AVENUE (ROUTE 83) AT CLIFTWOOD STREET
4. SUMNER AVENUE (ROUTE 83) AT BEAUMONT STREET
5. SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
6. SUMNER AVENUE AT BELMONT AVENUE AND DICKINSON STREET
7. SUMNER AVENUE AT BELMONT AVENUE (ROUTE 83)
8. SUMNER AVENUE AT VENTURA STREET
9. SUMNER AVENUE AT ORMOND STREET
10. SUMNER AVENUE AT DAYTONA STREET
11. SUMNER AVENUE AT WHITE STREET
12. DICKINSON STREET AT BURLINGTON STREET AND GRENADA TERRACE
13. DICKINSON STREET AT CLIFTWOOD STREET AND TRENTON STREET
14. DICKINSON STREET AT TRAFTON ROAD AND HOLLYWOOD STREET
15. BELMONT AVENUE AT OAKLAND STREET
16. BELMONT AVENUE AT BEAUMONT STREET
17. BELMONT AVENUE (ROUTE 83) AT COMMONWEALTH AVENUE
18. BELMONT AVENUE (ROUTE 83) AT ORMOND STREET
19. BELMONT AVENUE (ROUTE 83) AT WALDEN STREET
20. BELMONT AVENUE (ROUTE 83) AT HOLLYWOOD STREET AND DAYTONA STREET

June 2015

Mark	Date	Description
		PROJECT NO: S-2125
		FILE: S-2125_AERIAL_BASE.DWG
		DRAWN BY: BJL
		CHECKED: JRP
		APPROVED BY: JRP

2015 EXISTING TRAFFIC VOLUMES
 WEEKDAY MORNING PEAK HOUR

SCALE: AS SHOWN



**Springfield
 "X" Intersection
 Traffic Volumes**

Springfield,
 Massachusetts

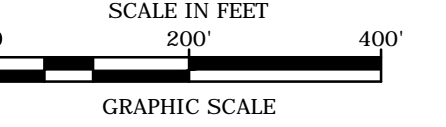
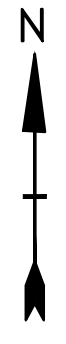
June 2015

- INTERSECTIONS**
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 - SUMNER AVENUE (ROUTE 83) AT BELMONT STREET
 - SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
 - SUMNER AVENUE AT BELMONT AVENUE AND DICKINSON STREET
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 - BELMONT AVENUE (ROUTE 83) AT HOLLYWOOD STREET AND DAYTONA STREET

Mark	Date	Description
PROJECT NO:	S-2125	
FILE:	S-2125_AERIAL_BASE.DWG	
DRAWN BY:	BJL	
CHECKED BY:	JRP	
APPROVED BY:	JRP	

2015 EXISTING TRAFFIC VOLUMES
 WEEKDAY MID-DAY
 PEAK HOUR

SCALE: AS SHOWN



**Springfield
 "X" Intersection**

Traffic Volumes

Springfield,
 Massachusetts

INTERSECTIONS

1. SUMNER AVENUE (ROUTE 83) AT MAIN GREETING ROAD (FOREST PARK MAIN ENTRANCE)
2. SUMNER AVENUE (ROUTE 83) AT OAKLAND STREET
3. SUMNER AVENUE (ROUTE 83) AT CLIFWOOD STREET
4. SUMNER AVENUE (ROUTE 83) AT BEAUMONT STREET
5. SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
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June 2015

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PROJECT NO:	S-2125	
FILE:	S-2125_AERIAL_BASE.DWG	
DRAWN BY:	B.J.L	
CHECKED:	JRP	
APPROVED BY:	JRP	

2015 EXISTING TRAFFIC VOLUMES
 WEEKDAY AFTERNOON
 PEAK HOUR

SCALE: AS SHOWN

Bus Ridership

Transit ridership for the bus stops within the study area were provided by the PVTA. This information specifies passenger boarding (entering) and alighting (exiting) each bus stop. Table 1 summarizes the PVTA ridership data.

TABLE 1
Pioneer Valley Transit Authority (PVTA) Ridership Summary ^a

PVTA Bus Stop/Time Period	Bus Stop ID	Bus Route	Number of Passengers	
			Boardings	Alightings
Sumner Ave and Herman St:	1722	Green 1		
<i>Weekday</i>			20	6
<i>Saturday</i>			9	5
<i>Sunday</i>			6	2
Sumner Ave and Bryant St:	1725	Green 1		
<i>Weekday</i>			6	38
<i>Saturday</i>			2	15
<i>Sunday</i>			1	13
Sumner Ave and Pomona St:	1726	Green 1		
<i>Weekday</i>			18	9
<i>Saturday</i>			3	7
<i>Sunday</i>			4	4
Sumner Ave and Ormond St:	1733	Green 1		
<i>Weekday</i>			30	66
<i>Saturday</i>			22	27
<i>Sunday</i>			14	53
Sumner Ave and Dickinson St:	1738	Green 1		
<i>Weekday</i>			123	26
<i>Saturday</i>			83	15
<i>Sunday</i>			49	8
Sumner Ave and Beaumont St:	1749	Green 1		
<i>Weekday</i>			21	9
<i>Saturday</i>			13	4
<i>Sunday</i>			3	4
Sumner Ave and Parkwood St:	1751	Green 1		
<i>Weekday</i>			2	19
<i>Saturday</i>			3	7
<i>Sunday</i>			0	2
Sumner Ave and Oakland St (EB):	1754	Green 1		
<i>Weekday</i>			8	48
<i>Saturday</i>			3	13
<i>Sunday</i>			6	10

^a Average Weekday data between October 20-24, 2014, Saturday data from 10/25/14, and Sunday data from 10/26/14.

TABLE 1 (continued)
Pioneer Valley Transit Authority (PVTA) Ridership Summary ^a

PVTA Bus Stop/Time Period	Bus Route	Number of Passengers	
		Boardings	Alightings
Sumner Ave and Oakland St (WB):	Green 1		
<i>Weekday</i>		13	11
<i>Saturday</i>		1	6
<i>Sunday</i>		1	1
Sumner Ave and Lenox St:	Green 1		
<i>Weekday</i>		10	66
<i>Saturday</i>		10	13
<i>Sunday</i>		4	9
Belmont Ave and Litchfield St:	Green 2		
<i>Weekday</i>		12	133
<i>Saturday</i>		5	105
<i>Sunday</i>		1	28
Belmont Ave and Oakland St:	Green 2		
<i>Weekday</i>		190	14
<i>Saturday</i>		113	9
<i>Sunday</i>		35	4
Belmont Ave and Beaumont St (NB):	Green 2		
<i>Weekday</i>		193	10
<i>Saturday</i>		96	10
<i>Sunday</i>		22	2
Belmont Ave and Beaumont St (SB):	Green 2		
<i>Weekday</i>		2	25
<i>Saturday</i>		2	19
<i>Sunday</i>		1	12
Belmont Ave and Sumner Ave (West):	Green 2		
<i>Weekday</i>		1	38
<i>Saturday</i>		4	23
<i>Sunday</i>		0	13
Belmont Ave and Sumner Ave (East):	Green 2		
<i>Weekday</i>		9	65
<i>Saturday</i>		10	40
<i>Sunday</i>		4	18
Belmont Ave and Commonwealth Ave:	Green 2		
<i>Weekday</i>		22	11
<i>Saturday</i>		26	11
<i>Sunday</i>		4	7

^a Average Weekday data between October 20-24, 2014, Saturday data from 10/25/14, and Sunday data from 10/26/14.

TABLE 1 (continued)
Pioneer Valley Transit Authority (PVTA) Ridership Summary ^a

PVTA Bus Stop/Time Period	Bus Route	Number of Passengers	
		Boardings	Alightings
Belmont Ave and Ormond St:	Green 2		
<i>Weekday</i>		5	18
<i>Saturday</i>		8	12
<i>Sunday</i>		0	5
Belmont Ave and Daytona St:	Green 2		
<i>Weekday</i>		14	0
<i>Saturday</i>		4	3
<i>Sunday</i>		0	1
Belmont Ave and Hollywood St:	Green 2		
<i>Weekday</i>		1	19
<i>Saturday</i>		2	5
<i>Sunday</i>		3	3
Dickinson St and Alderman St:	Green 5		
<i>Weekday</i>		2	27
<i>Saturday</i>		--	--
<i>Sunday</i>		--	--
Dickinson St and Burlington St (SB):	Green 5		
<i>Weekday</i>		38	3
<i>Saturday</i>		0	4
<i>Sunday</i>		--	--
Dickinson St and Burlington St (NB):	Green 5		
<i>Weekday</i>		39	2
<i>Saturday</i>		--	--
<i>Sunday</i>		--	--
Dickinson St and Sumner Ave SB (North):	Green 5		
<i>Weekday</i>		0	5
<i>Saturday</i>		0	1
<i>Sunday</i>		--	--
Dickinson St and Sumner Ave NB (North):	Green 5		
<i>Weekday</i>		0	8
<i>Saturday</i>		10	0
<i>Sunday</i>		--	--
Dickinson St and Sumner Ave (South):	Green 5		
<i>Weekday</i>		2	13
<i>Saturday</i>		0	1
<i>Sunday</i>		--	--

^a Average Weekday data between October 20-24, 2014, Saturday data from 10/25/14, and Sunday data from 10/26/14.

TABLE 1 (continued)
Pioneer Valley Transit Authority (PVTA) Ridership Summary ^a

PVTA Bus Stop/Time Period	Bus Route	Number of Passengers	
		Boardings	Alightings
Dickinson St and Trenton St:	Green 5		
<i>Weekday</i>		4	2
<i>Saturday</i>		1	0
<i>Sunday</i>		--	--
Dickinson St and Trafton Rd NB:	Green 5		
<i>Weekday</i>		1	4
<i>Saturday</i>		2	0
<i>Sunday</i>		--	--
Dickinson St and Trafton Rd SB:	Green 5		
<i>Weekday</i>		3	0
<i>Saturday</i>		0	3
<i>Sunday</i>		--	--

^a Average Weekday data between October 20-24, 2014, Saturday data from 10/25/14, and Sunday data from 10/26/14.

EXISTING UTILITIES

Existing utilities within the proximity of the "X" intersection include storm drainage, sanitary sewer, combined sewer, water, gas, electrical, and communication.

The storm drainage, sanitary sewer, and combined sewer underground utility locations were provided by the City of Springfield Water and Sewer Commission GIS Data. In general, the sanitary sewer and combined sewer flow from east to west or south to north within Dickinson Street, Sumner Avenue, and Belmont Avenue. The existing sewer system consists of 8" to 36" brick, vitrified clay, and reinforced concrete pipes with install dates averaging in the early 1900's. The conditions of the pipes are not known and should be further investigated.

Storm drain trunk lines are located within Dickinson Street north and south of the intersection with Sumner Avenue. Each individual system flows south but the northern system discharges to a combined sewer located on Sumner Avenue. Areas along Sumner Avenue and Belmont Avenue indicate potential drainage ponding issues due to the accumulation of sediment and debris adjacent to the curb line. Manhole covers and catch basin grates associated with the aforementioned utilities generally display cosmetic deficiencies in the form of worn surfaces.

Most of the immediate area around the "X" is serviced by combined sewer utilities. The exact locations, vintage, material, and function of each utility should be further investigated and addressed appropriately as the project develops from conceptual design to a fully developed design.

The water utilities at the "X" consist of cast iron mains and services with sizes ranging from 6" to 20" located within all adjacent roadways. According to the Springfield Water and Sewer Commission GIS Data, some of the pipes were installed in the late 1800's. There are numerous hydrants, tees, and valves associated with the water utilities managed and operated by the Springfield Water and Sewer Commission. The exact locations, vintage, material, and function of the water mains should be further investigated and addressed appropriately as the project develops from conceptual design to a fully developed design.

The gas, electrical, and communication utilities at the "X" are underground. Although no GIS data were obtained through the City, it is apparent that these utilities are apparently located throughout the "X" and surrounding roadways. Gas, electrical, and communication utilities are owned or regulated by third party corporations and are typically located within the City right-of-way. Therefore, potential conflicts need to be identified and coordinated with the proper authority prior to reconstruction of the "X".

POTENTIAL IMPROVEMENTS

With the objective of increasing safety, multi-modal mobility, and vehicle progression through the "X" intersection and the surrounding area, consideration should be given to constructing bicycle lanes, improving pedestrian amenities, and providing bus pull-off areas. The following goals should be considered when contemplating different transportation improvements:

- Develop a transportation system which affords mobility for all and provides well-designed and suitable access to employment, housing, service, and recreation areas.
- Manage, maintain, and enhance the existing transportation system to maximize safety and efficiency.
- Improve multi-modal facilities to encourage the use of viable alternatives to vehicle dependency.
- Establish a transportation system that facilitates economic development.

Roadway cross-section elements (e.g., sidewalks, bicycle amenities, vehicle travel lanes, and delivery loading areas) should be considered within the "X" to achieve a context-sensitive design that accommodates roadway users safely, conveniently, and comfortably. The improvements to the "X" are envisioned to provide the transportation infrastructure accommodating different modes of transportation in a safe manner while fitting the physical setting and preserving resources. The following provides a description of some measures that would be expected to improve safety and multi-modal mobility within the "X," while maintaining reasonable intersection operations for vehicles within the heavily traveled area.

Planning Approach

The transportation planning process is a vital component in influencing the "X" intersection and surrounding area to be designed in a manner to assist in shaping the area's economic growth, incorporating multi-modal mobility, improving safety, and linking the transportation system with societal goals. According to the Institute of Transportation Engineers (ITE):

*"Transportation planning is a continuing, comprehensive and collaborative process to encourage the development of a multimodal transportation system to ensure safe and efficient movement of people and goods while balancing environmental and community needs. The process is designed to promote involvement by all levels of government, stakeholders and the general public."*¹

¹ *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*. Washington, DC: Institute of Transportation Engineers, 2010. Pub No. RP-036A.

Several sources have been consulted in evaluating the most feasible vehicle, bicycle, and pedestrian facilities with respect to type, design, and suitability, such as:

- American Association of State Highway and Transportation Officials (AASHTO)
- Americans with Disabilities Act (ADA)
- Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- Federal Highway Administration (FHWA)
- Institute of Transportation Engineers (ITE)
- Massachusetts Department of Transportation (MassDOT)
- Manual on Uniform Traffic Control Devices (MUTCD)
- National Association of City Transportation Officials (NACTO)
- National Cooperative Highway Research Program (NCHRP)
- Pedestrian and Bicycle Information Center (PBIC)
- City of Springfield's Pedestrian and Bicycle Complete Streets Plan

After determining the existing and anticipated travel patterns and desired multi-modal mobility efficiency, the next step is to develop a plan of action to design and implement the improvements.

- **Context Sensitive Solution:** due to the location, nature, uses, and different users of the "X," a context sensitive solution (CSS) approach would prove to be beneficial in developing a transportation facility involving different stakeholders. The intent of modifying the "X" is to develop a transportation facility to accommodate different modes of transportation by balancing its physical setting, the preservation of resources (e.g., scenic, aesthetic, historic, and environment), safety, and mobility.
- **Complete Streets:** the "X" would be planned, designed, maintained, and operated such that consideration is provided to balancing the needs of all the roadway users (vehicles, pedestrians, cyclists, transit, and trucks). Complete Streets accommodates different modes of transportation while providing for all purposes of a roadway such as processing traffic, accessing destinations, and promoting the sustainability and growth of the economy. A Complete Street design is different for each roadway and is dependent upon the roadway's intended function, the types and volumes anticipated of transportation users, the destinations it serves (e.g., uses along the corridor or uses beyond the corridor [cut-through]), and the available rights-of-way.

Access Management

Access Management strategies are important in improving safety and efficiency by balancing the mobility and access needs of roadway users and enhance safe and efficient property access. According to the Federal Highway Administration (FHWA), Access Management techniques are designed to increase roadway capacity, reduce collisions, and manage congestion. An Access Management approach to be considered includes discontinuing unwarranted signalized intersections, which would enhance vehicular traffic flow along major arterials, reduce congestion, and improve air quality along heavily traveled corridors.

Sight Distances

To identify potential safety concerns associated with vehicle, pedestrian, and bicycle safety within the "X", any improvements should consider lines of sight between vehicles on the major roadways and entering or crossing modes of transportation into the traveled way. Sight distances should be evaluated to determine if the available sight lines would meet or exceed the minimum distances required for approaching vehicles to safely stop. The available sight distances should be compared with minimum requirements, as established by American Association of State Highway Officials (AASHTO).² AASHTO is the national standard by which vehicle sight distance is calculated, measured, and reported.

Sight distance is the length of roadway ahead visible to the driver. The Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path. The Intersection Sight Distance (ISD) is provided on minor street approaches to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway.

In addition, corner clearance should be provided at driveways and intersecting roadways along the major roadways within the vicinity of the "X." Corner clearance is the distance between the corners of an intersection left unobstructed to separate conflict points. Properly cleared intersection corners provide motorists ample time to make safe maneuvers, reduce collisions, and improve visibility to and from pedestrian crossings. Specific attention should be made to the southbound Dickinson Street movement at Sumner Avenue, particularly since the City has expressed interest in permitting right hand turn movements. A "No Turn on Red" sign should be placed at this location if future conditions permit right hand turn movements to Sumner Avenue.

To ensure the safe and efficient flow of traffic to and from intersections or crossings, plantings, vegetation, landscaping, and signing along the edges of the roadways should be kept low to the ground or set back sufficiently from the edges of the roadways so as not to inhibit the available sight lines. In addition, on-street parking should not be provided within close proximity to intersections.

Non-Motorized Transportation Amenities

Non-motorized transportation includes walking and bicycling within the vicinity of the "X." These modes of travel provide both recreation and transportation. To improve non-motorized transportation, consideration should be given to implementing design measures in accordance with Smart Growth Principles by improving multi-modal mobility, completing missing links in the transportation network to provide connectivity, and creating a pedestrian and bicycle friendly environment.³ These goals can be met by replacing and constructing sidewalks along Sumner Avenue with a planting strip between the sidewalks and the roadway; striping crosswalks; constructing a bicycle lane; installing bicycle racks for tenants, visitors, and

² *A Policy on Geometric Design of Highways and Streets*, 6th Edition. Washington, D.C.: American Association of State Highway and Transportation Officials (AASHTO), 2011.

³ *Smart Growth Transportation Guidelines: An ITE Recommended Practice*. Washington, D.C.: Institute of Transportation Engineers, 2010.

customers; and providing weather-protected bicycle parking. These measures would be expected to increase safety and comfort for pedestrians and cyclists.

Wheelchair accessible ramps and crosswalks should be considered at driveways and intersections to accommodate pedestrian connectivity to improve multi-modal mobility in accordance with ADA design requirements. Crosswalks and associated pedestrian crossing warning signs designed in accordance with the requirements established in the Manual on Uniform Traffic Control Devices (MUTCD) should be installed at and in advance of pedestrian crossing locations.

Pedestrian Facilities

The portion of a pedestrian facility from the edge of the adjacent roadway and the right-of-way is considered the sidewalk corridor. Appropriately designed sidewalk corridors promote access and include, but are not limited to: wide pathways, clearly defined zones (e.g., pedestrian, furniture, and frontage), insignificant obstacles and protruding objects, moderate grades and cross slopes, and well-lit areas. The sidewalk corridor's width is important for pedestrian comfort and experience. For example, planting strips provide shade, space for utilities and traffic signs, and separation from the adjacent vehicular traffic. Narrow sidewalks, however, limit the number of pedestrians that can use the area efficiently.⁴ Other pedestrian facilities for consideration include walkways, curb ramps (provide access between the sidewalk and the roadway), shared-use paths (off-road connections used by cyclists and pedestrians for recreation and commuting), and shared streets (narrow streets without curbing and sidewalks integrating vehicles traveling at slower speeds, pedestrians, and cyclists).

At intersections, pedestrian facilities should be designed to safely accommodate users inclusive of age and capabilities. Pedestrian accessibility should be designed in accordance with ADA minimum design standards and ADAAG minimum criteria. Within pedestrian facilities, safety implications result for people with disabilities when physical barriers are present, inadequate signal equipment for crossings, absence of curb ramps at crossings, and lack of connectivity (e.g., gaps in sidewalks).

When planning for pedestrian activity, pedestrian movement characteristics, their relationship to various activity centers, and collisions involving pedestrians should be considered. Pedestrian safety is at risk on multi-lane roadways with high vehicular speeds. On narrow roadways with low vehicular speeds and a busy corridor, pedestrians are at lower safety risk.

"An individual's decision to walk is as much influenced by the perceived quality of the experience as it is by security, safety and convenience. Thus...more recent studies have looked at...not only what is needed to physically from one location to another but also how urban design and the interaction between road

⁴ "Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide." *Office of Planning, Environmental & Realty – Bicycle & Pedestrian*. Federal Highway Administration, Sept. 2001.

network structure and land use patterns can enhance or degrade this experience.”⁵

When designing pedestrian facilities, the following factors should be considered:

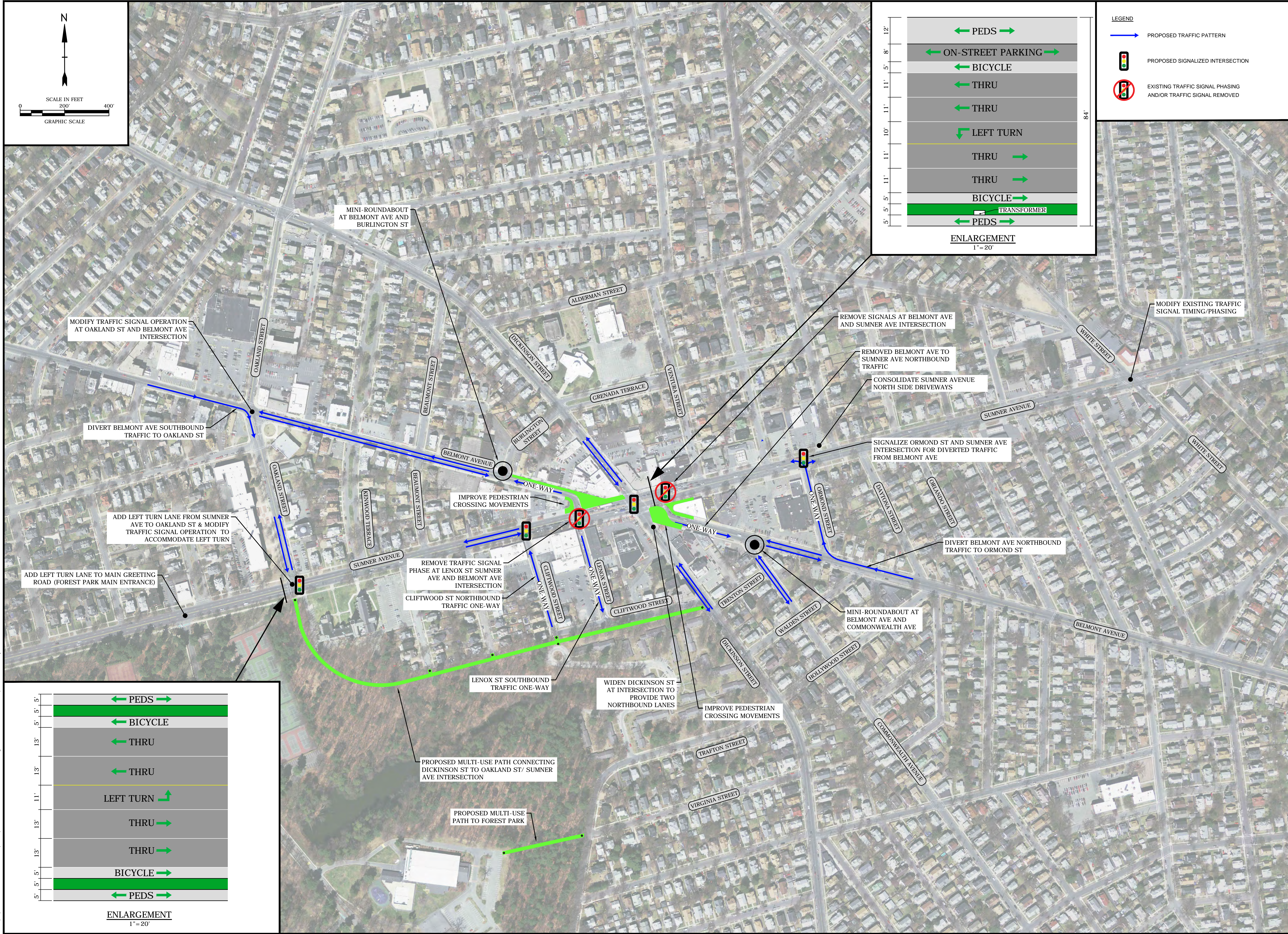
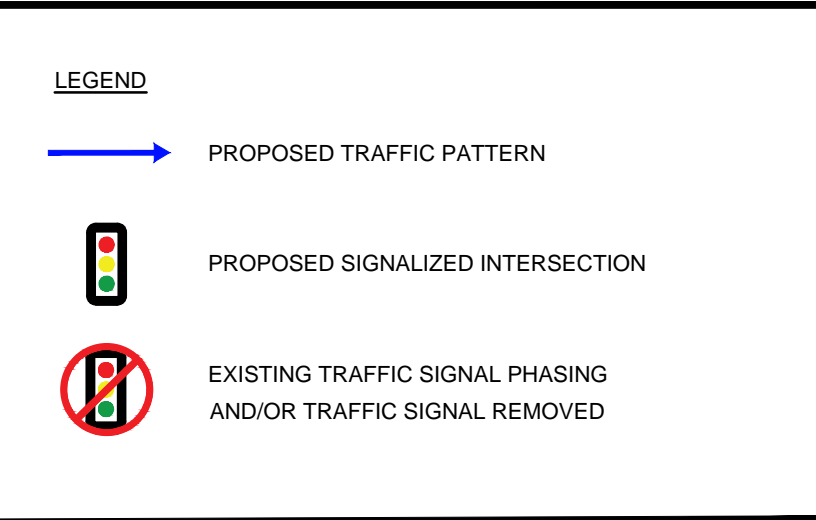
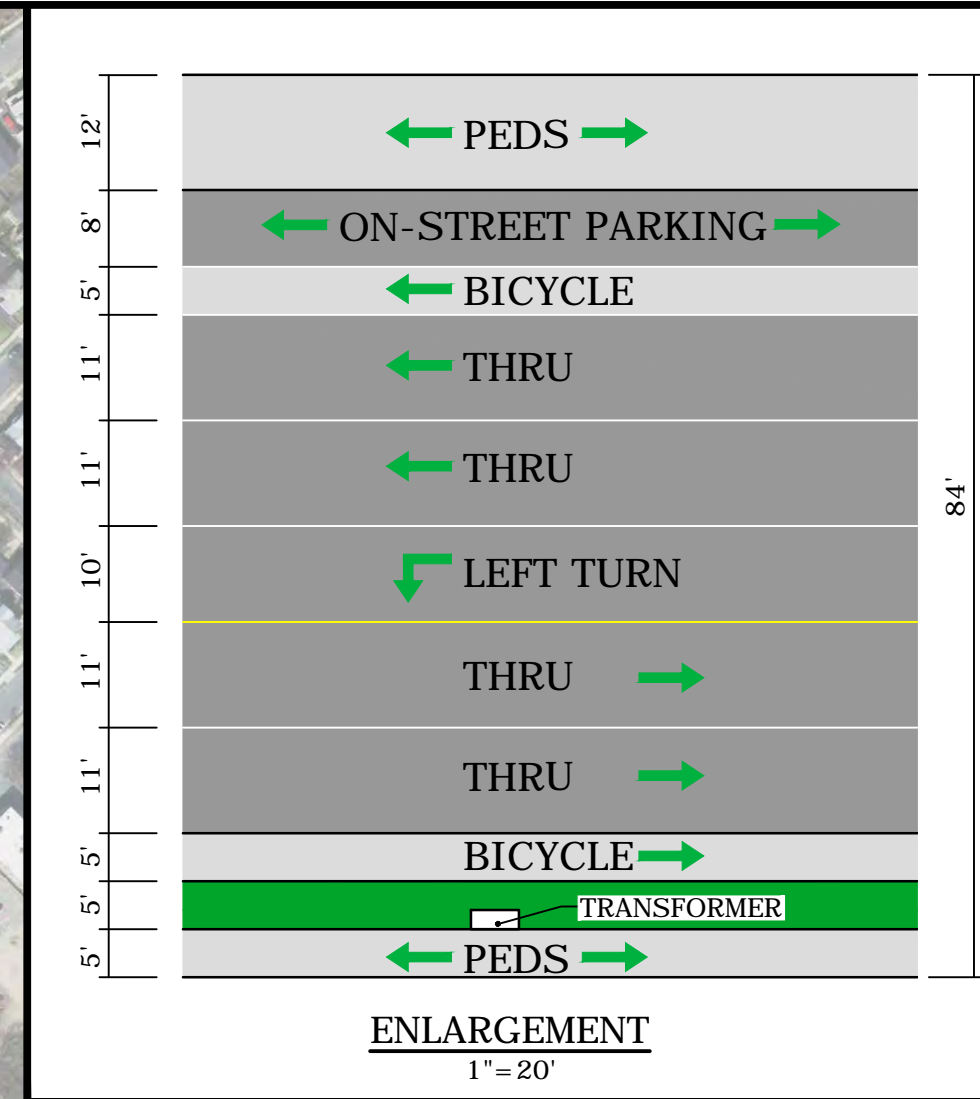
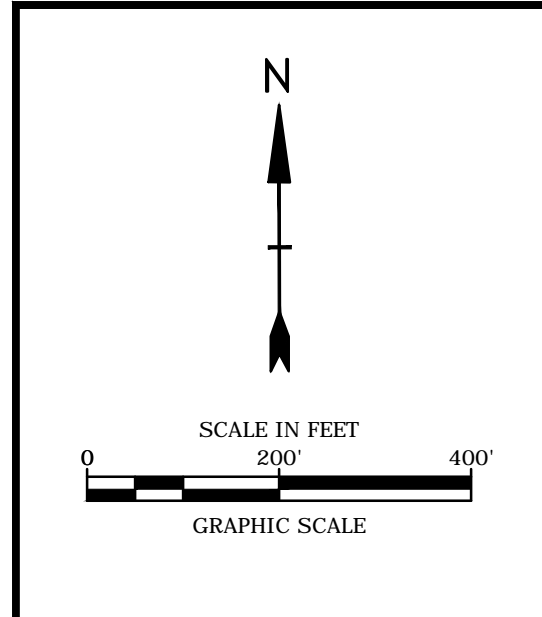
- **Sidewalk Width:** the anticipated pedestrian volumes should be accommodated within the proposed sidewalk, with a minimum width able to provide for two adults to walk side by side.
- **Separation from Traffic:** physical separation from high-volume or high-speed vehicular traffic provides for safer pedestrian conditions (e.g., grass planting strip with trees, a raised planter, a bicycle lane, on-street parallel parking, etc.).
- **Continuity:** design pedestrian facilities to encourage pedestrian access by connecting with existing sidewalks, providing design safety measures in crossing driveways and intersections, and leading pedestrians to activity centers without requiring to cross unpaved areas or midblock without the presence of crosswalks. Pedestrian walkways should connect, be continuous, and conflict-free.
- **Intersection Design:** intersections should be designed to accommodate both vehicular and pedestrian movements that minimize the lengths required for pedestrians to cross.
- **Street Trees:** street trees provide shade and provide for a high-quality pedestrian environment by giving a sense of walking in a protected environment. Pedestrian visibility at crossings can be accommodated by use of proper trees with smaller trunk diameters and other intersection design measures.
- **Vertical Clearances:** landscaping, trees, signage, and other similar vertical obstructions should be designed to not conflict with pedestrians.
- **Pedestrian-Scale Design:** signage should be designed for motorists and pedestrians to view. Overhead street lighting should be scaled to the level of pedestrians, rather than on light poles designed for high-speed highways. Other considerations for design could include street furniture, vistas, and landmarks to help make pedestrian travel routes diverse.

Based on data collection efforts, field observations, and collaboration efforts with City of Springfield officials and Citizens Advisory Committee (CAC) members, a multi-use pathway would be provided from Trafton Street to Forest Park. In addition, a multi-use pathway would be constructed from Dickinson Street, along Cliftwood Street, and to Sumner Avenue at Oakland Street, with connections to Lenox Street, Cliftwood Street, Parkwood Street, and Continental Street. See Conceptual Traffic Patterns – Alt 2, Sheet 1 of 5.

Bicycle Facilities

Cycling and walking share common needs and are faced with similar problems, however, they are distinct modes of transportation that require individual thought and consideration. For

⁵ *Transportation Planning Handbook*. 3rd ed. Washington, DC: Institute of Transportation Engineers, 2009.



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Springfield "X" Intersection
Conceptual Traffic Patterns - Alt 2
 Springfield, Massachusetts

FEBRUARY 2016

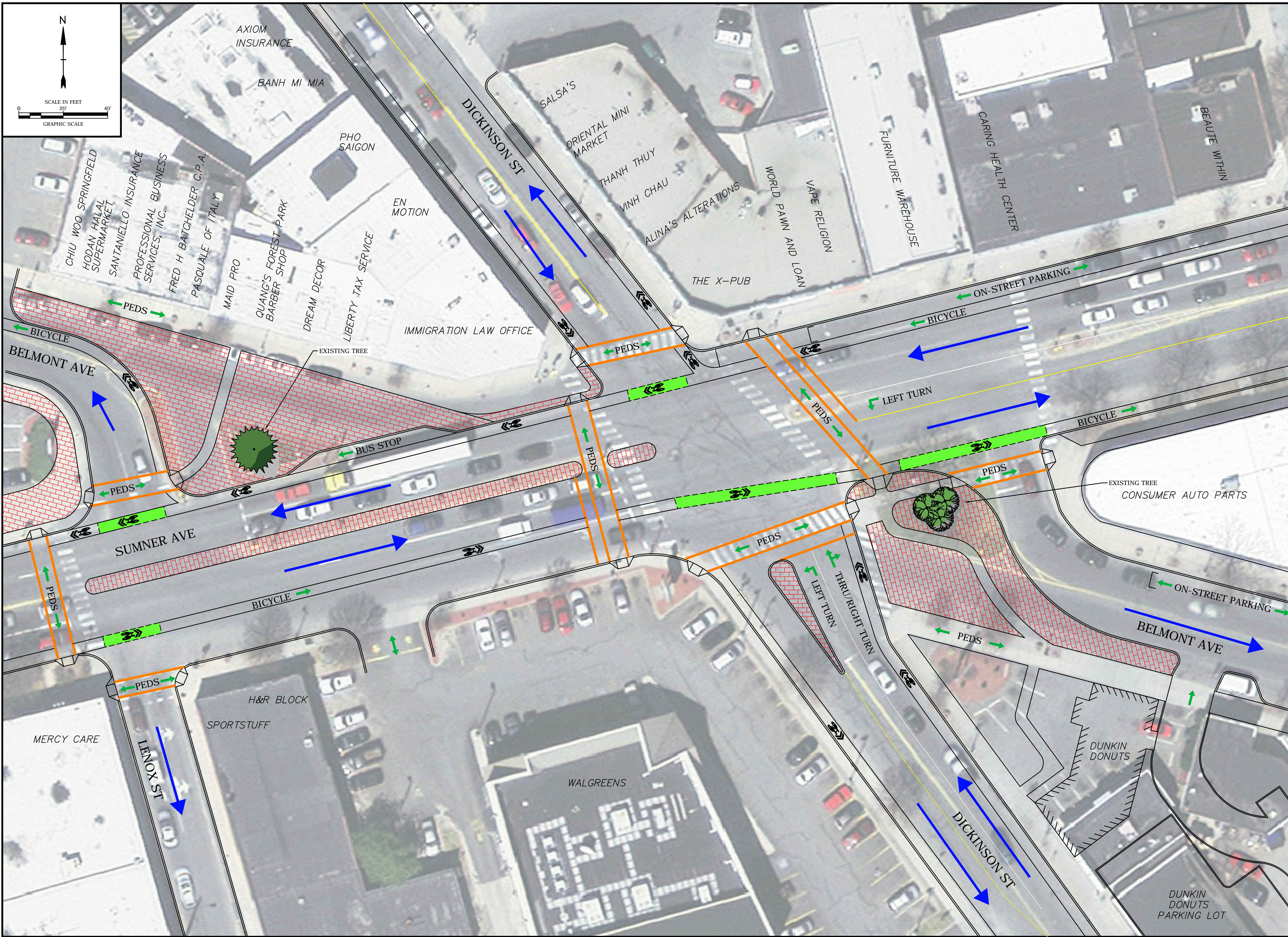
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PROJECT NO: S-2125
 FILE: S-2125_AERIAL_Altis_nov.dwg
 DRAWN BY: AGB / ADF
 CHECKED BY: PMF
 APPROVED BY: PMF

PROPOSED TRAFFIC PATTERNS

SCALE: AS SHOWN

SHEET 1 OF 5



**Springfield
 "X" Intersection**

**Conceptual
 Traffic Patterns -
 Alt 2 Safety
 Improvements**

Springfield,
 Massachusetts

FEBRUARY 2016

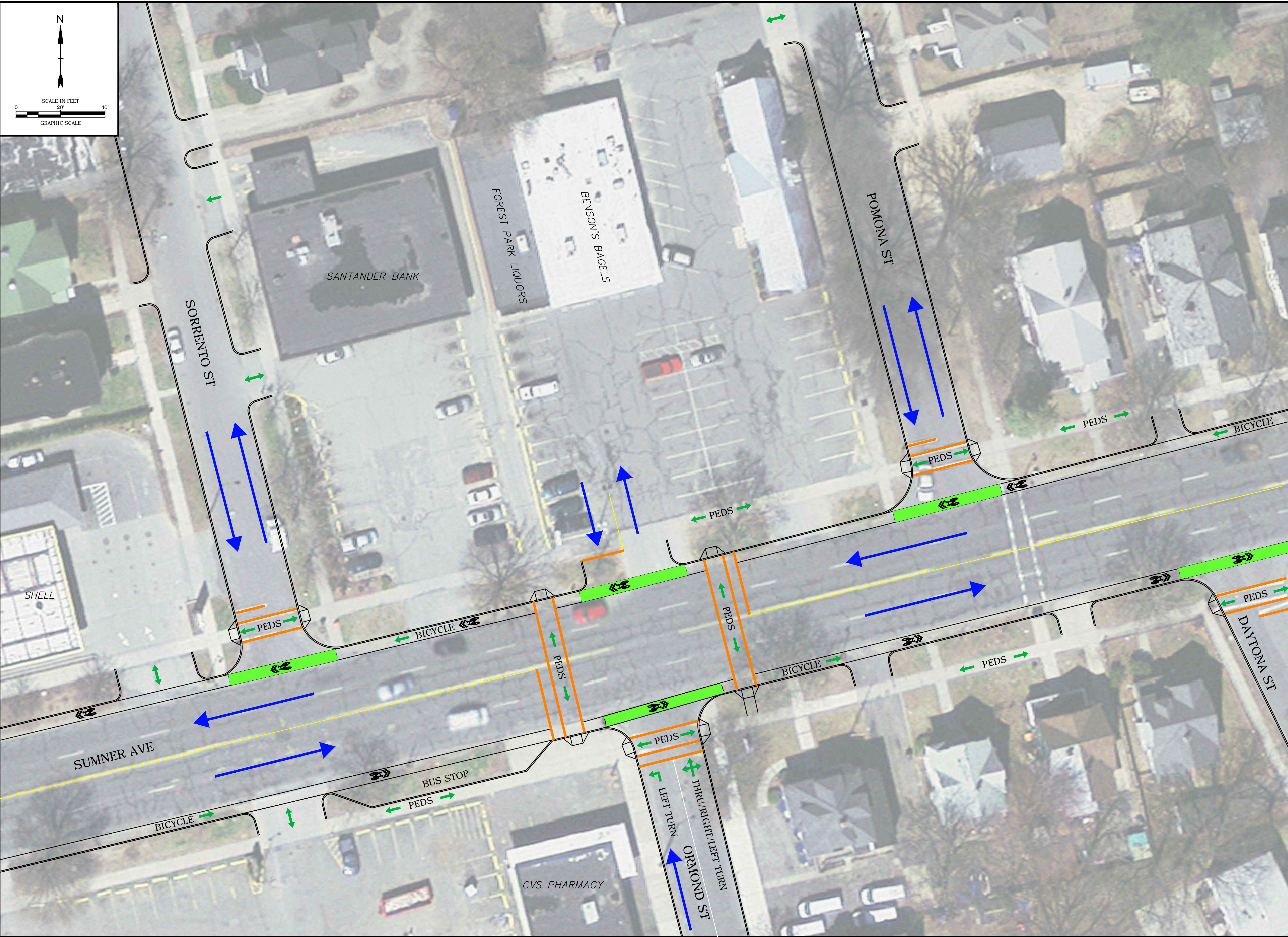
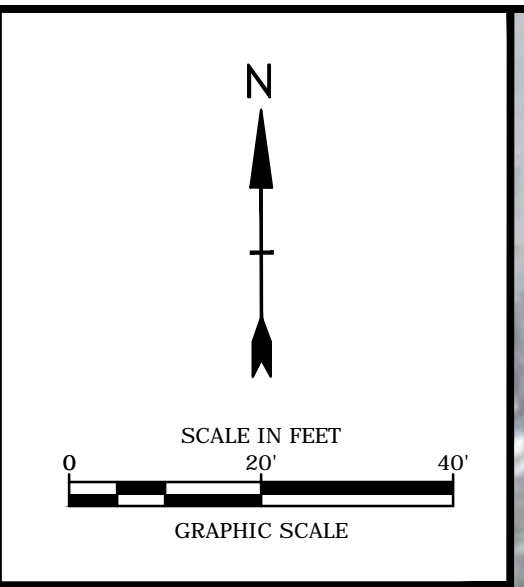
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DRAWN BY:	AGB/ADF	
CHECKED BY:	PMF	
APPROVED BY:	PMF	

PROPOSED TRAFFIC PATTERNS

SCALE: AS SHOWN

SHEET 2 OF 5

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**Springfield
 "X" Intersection**

**Conceptual
 Traffic Patterns -
 Alt 2 Safety
 Improvements**

Springfield,
 Massachusetts

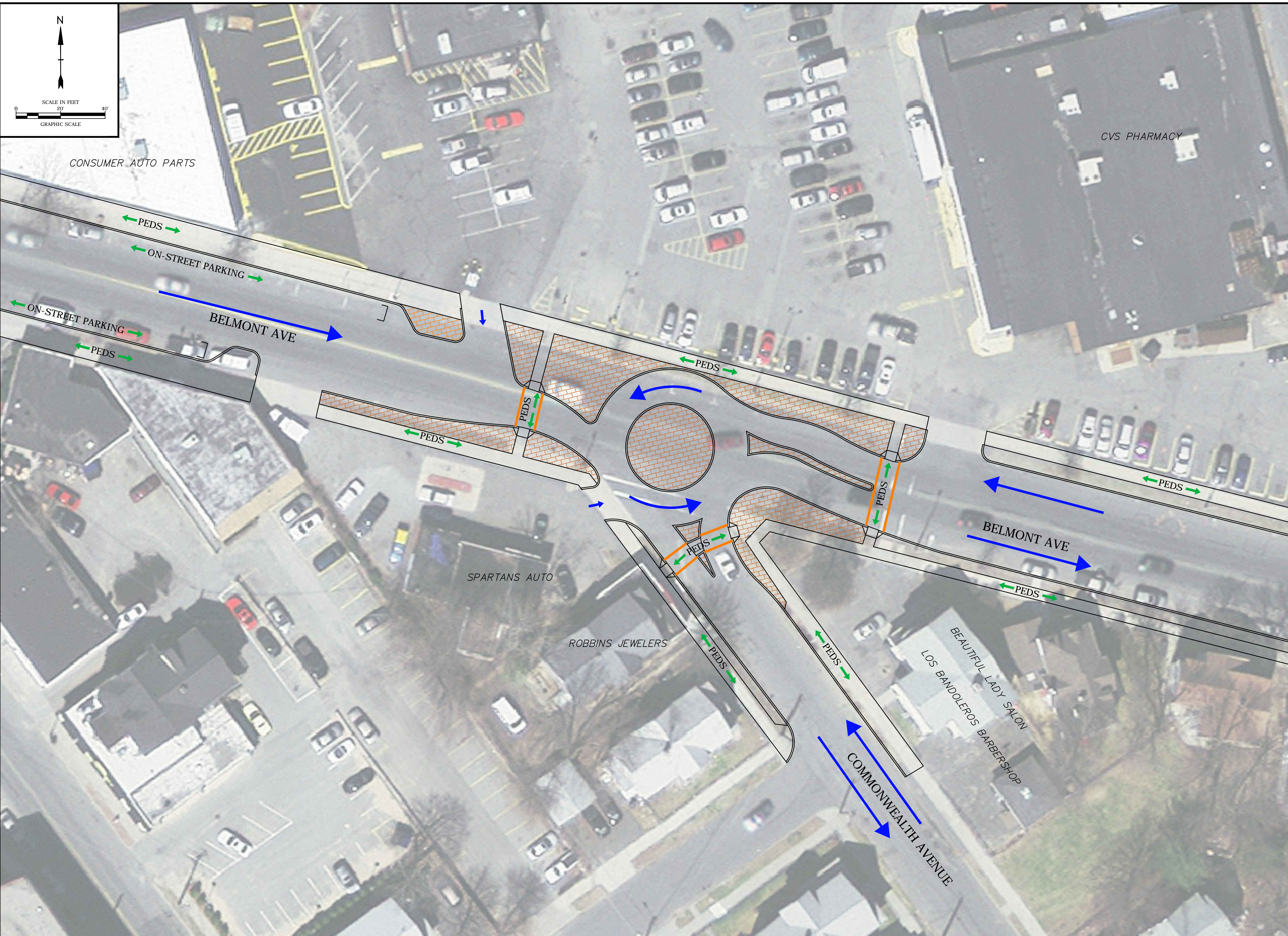
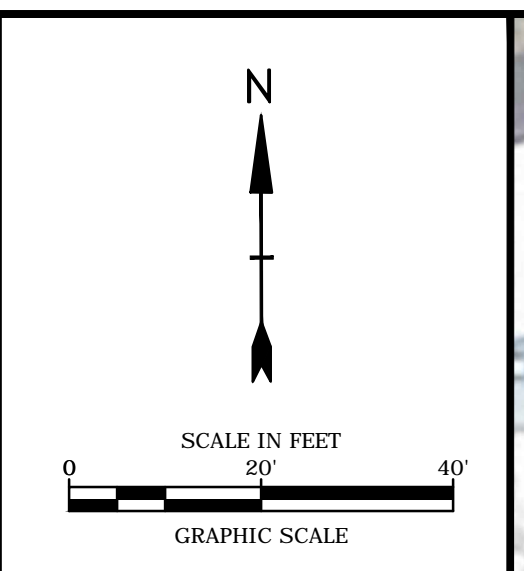
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APPROVED BY:	PMF	

PROPOSED TRAFFIC PATTERNS

SCALE: AS SHOWN

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**Springfield
 "X" Intersection**

**Conceptual
 Traffic Patterns -
 Alt 2 Safety
 Improvements**

Springfield,
 Massachusetts

FEBRUARY 2016

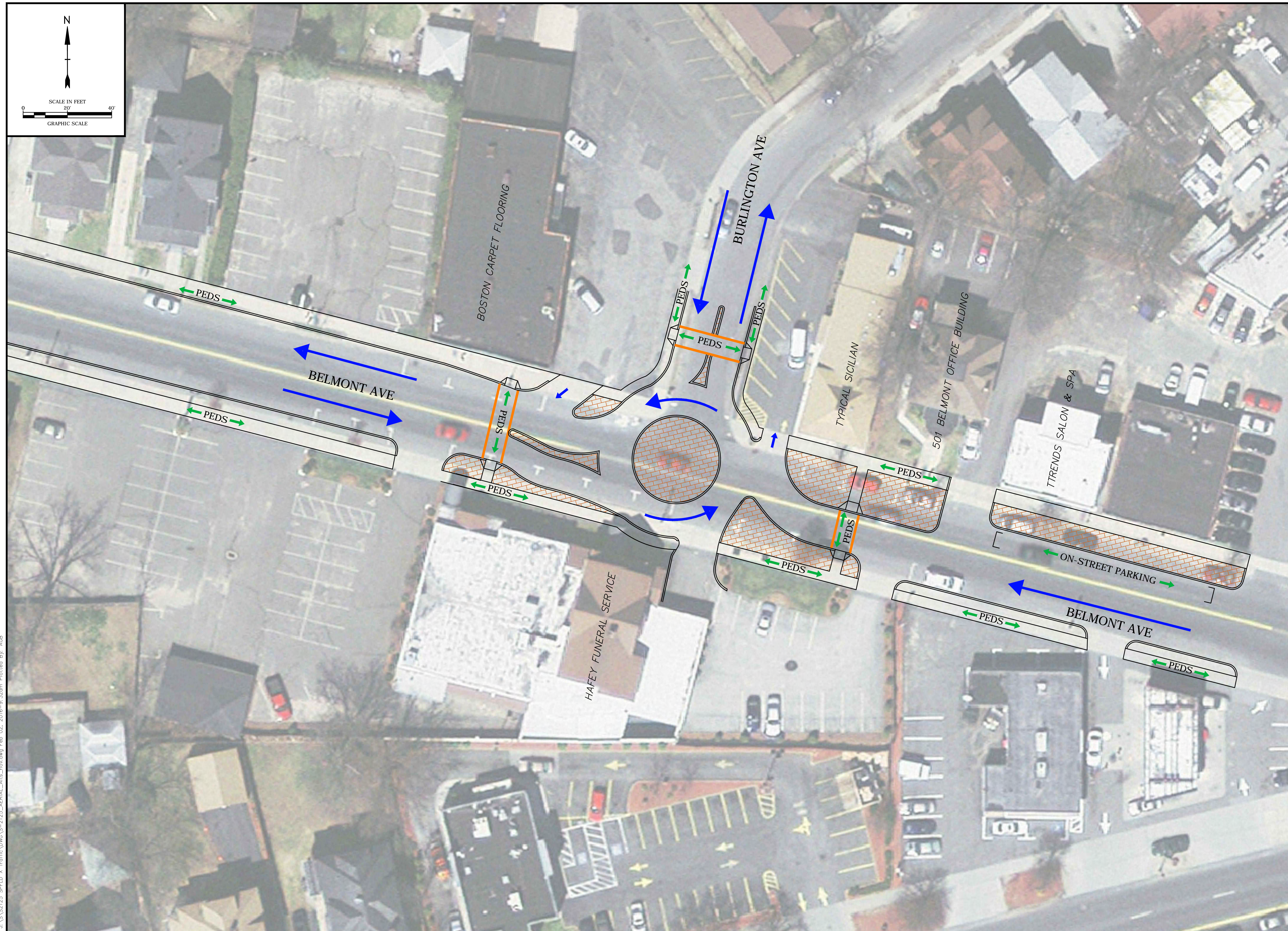
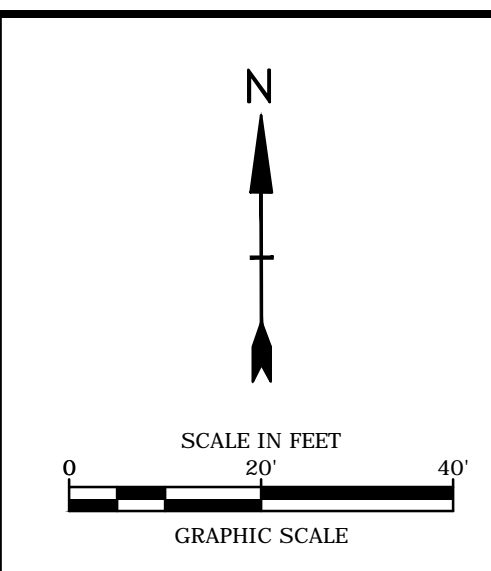
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PROJECT NO:	S-2125
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CHECKED BY:	PMF
APPROVED BY:	PMF

BELMONT AVE/ COMMONWEALTH
 AVE MINI-ROUNDBOUT

SCALE: AS SHOWN

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**Springfield
 "X" Intersection**

**Conceptual
 Traffic Patterns -
 Alt 2 Safety
 Improvements**

Springfield,
 Massachusetts

FEBRUARY 2016

Mark	Date	Description

PROJECT NO:	S-2125
FILE:	S-2125_AERIAL_Altis_nov.dwg
DRAWN BY:	AGB/ADF
CHECKED BY:	PMF
APPROVED BY:	PMF

BELMONT AVE/ BURLINGTON ST
 MINI-ROUNDBOULT

SCALE: AS SHOWN

J:\S\2125_SPFED_X_Traffic\DWGS-2125_AERIAL_Altis_nov.dwg Feb 02, 2016--9:32am Plotted By: ACB

example, these non-motorized modes of transportation travel at slower speeds than vehicles, but cyclists can travel at faster speeds than pedestrians and pedestrians can change directions and stop quicker. Cyclists can travel on the roadway, but pedestrians require separate travel facilities. Incorporating a CSS approach would help to ensure the transportation design fits with the physical setting and improves multi-modal safety and mobility by considering the needs of all users of the transportation system.

A bicycle lane is a portion of the roadway that has been designated by striping, signage, and pavement markings for bicycle use. Bicycle lanes allow cyclists to ride at their desired speed without conflict from vehicular travel. Typical bicycle lanes are provided along the curbside of a roadway, without the presence of on-street parking, and flow in the same direction of vehicular traffic. There are generally four types of on-road bicycle facilities: bicycle lanes, wide curb lanes, bicycle routes (shared roadways), and paved shoulders.⁶

- **Bicycle Lanes:** a portion of the roadway is designated for bicycle use. In urban areas with higher vehicular travel speeds and on-street parking turnover, 6- to 8-foot wide bicycle lanes are recommended to increase the separation from vehicles. The wide bicycle lanes also encourage more bicycle use for travel.
- **Wide Curb Lanes:** wide outside travel lanes (e.g., 14 feet) may be provided to allow a typical vehicle to bypass a cyclist. This type of bicycle facility is provided along the right-hand side of a roadway and are appropriate for Group A cyclists (i.e., advanced adult cyclists).
- **Bicycle Routes:** shared roadways designed based on a set of minimum guidelines and operational criteria for compatibility. Bicycle routes are designated with signage as part of an interconnected system of bicycle facilities.
- **Paved Shoulders:** with no curbing or gutter, paved shoulders can serve cyclists particularly in rural areas. Preferred 4- to 6-foot wide shoulders would be provided on both sides of a roadway.

Consideration can also be given to constructing a cycle track along the Sumner Avenue corridor. Different from a bicycle lane, a cycle track incorporates a physical barrier (e.g., bollards, medians, raised curbs, etc.) that separates bicycle travel from vehicular traffic. In addition, a bicycle lane is preferred to be located on the opposite side of the roadway from on-street parking areas, while a cycle track may be combined with a parking lane incorporated with a physical barrier for separation. Cycle tracks are distinct from sidewalks and provide operating space intended solely for cyclists. This type of bicycle facility can be design at the roadway level or at a higher level (e.g., the same height as the adjacent sidewalk).

Based on data collection efforts, field observations, and collaboration efforts with City of Springfield officials and CAC members, bicycle lanes would be provided on both sides of Sumner Avenue between Oakland Street and along streets that are within the project area.

⁶ *Ibid.* 11.

Public Transportation Amenities

Safe and convenient access to and from transit service help traveler's decide whether to ride transit. Therefore, it is essential that sidewalks and other pedestrian pathways have adequate width and surface condition, are separate from vehicular traffic, and have appropriate lighting and signage. In addition, cyclists provide a positive market for transit services as cyclists can combine their travel with bus service and extend the length of their trip. The key factor for cyclists utilizing transit service is where to safely park their bicycle prior to riding on the transit service.

The need for future passenger amenities is important to consider when selecting a location for the placement of a bus stop. In addition, other factors to consider for the placement of a bus stop include passenger protection from vehicular traffic, access for people with disabilities, all weather surface, proximity to crosswalks and curb ramps, width of sidewalks, adequate curb space for stopping, other nearby stops, the vicinity to activity centers, on-street vehicle parking spaces and truck delivery zones, street lighting, and impact on nearby intersection operations.

There are three types of bus stop locations, but the safety and convenience of pedestrians should be considered as a priority:

- **Far-Side Bus Stop:** located immediately after passing through an intersection. This type of bus stop minimizes conflicts with mainline right-turning vehicles, but may result in the intersection being blocked during peak vehicle time periods due to the stopped bus.
- **Near-Side Bus Stop:** located immediately prior to an intersection. This type of bus stop minimizes interferences, but a stopped bus may limit sight lines and may block vehicles in the mainline travel lane from proceeding through the intersection.
- **Midblock Bus Stop:** located within the block. This type of bus stop minimizes sight distance restrictions, but requires a longer distance of no-parking restrictions and may encourage pedestrians to cross the mainline roadway outside of a crosswalk.

The PVTA provides fixed route bus service within the "X." Locating bus stops near higher land uses and activity centers can enhance ridership. Therefore, the City of Springfield should consider meeting with PVTA officials to discuss the success of the current bus system and future considerations (e.g., additional stops, additional service lines, reduced operations, etc.).

In addition, City of Springfield and PVTA officials should collaborate on the potential construction of bus bays (bus pullout areas) in which a bus has a specified area to pull out of the traffic stream to load and unload passengers. This design would provide a protected area for passengers outside of the mainline through traffic and would minimize delay to through vehicles. At determined locations, placing bus benches and shelters should be considered to provide waiting passengers with seating and protection from the elements.

Roadway Design

Based on data collection efforts, field observations, and collaboration efforts with City of Springfield officials and CAC members, different roadway improvements and designs have been developed and evaluated. In general, the Belmont Avenue legs at the "X" were redesigned to be one-way roadways departing the intersection. In order to accommodate

this design, the following summarizes the redistribution methodologies and anticipated improvement measures.

The "X" – Sumner Street at Dickinson Street and Belmont Avenue

- Redesign the Belmont Avenue north leg to provide a one-way roadway northbound from the Sumner Avenue intersection to the Burlington Street intersection (i.e., departing the "X").
- Redesign the Belmont Avenue south leg to provide a one-way roadway southbound from the Sumner Avenue intersection to the Commonwealth Avenue intersection (i.e., departing the "X").
- Reconfigure the Sumner Avenue westbound approach to provide an exclusive left-turn lane onto Dickinson Street southbound.
- Reconfigure the Dickinson Street northbound approach to provide an exclusive left-turn lane onto Sumner Avenue westbound.
- Permit right turns from Dickinson Street southbound approach to Sumner Avenue with a "No Turn on Red" sign.

Belmont Avenue North of the "X"

- Redistribute Belmont Avenue southbound traffic destined for Sumner Avenue eastbound, Dickinson Street southbound, and Belmont Avenue southbound to Oakland Street and then to Sumner Avenue.
- Reconstruct the Belmont Avenue and Burlington Street intersection to provide a mini-roundabout, with Belmont Avenue north and Burlington Street providing two-way traffic flow, and Belmont Avenue south providing one-way traffic flow approaching the intersection (i.e., away from the "X").
- Modify traffic signal operations at the Belmont Avenue and Oakland Street intersection.
- Modify traffic signal operations at the Sumner Avenue and Oakland Street intersection.

Belmont Avenue South of the "X"

- Redistribute Belmont Avenue northbound traffic destined for Sumner Avenue westbound, Belmont Avenue northbound, and Dickinson Street northbound to Ormond Street and then to Sumner Avenue.
- Convert Ormond Street to a one-way roadway northbound from Belmont Avenue to Sumner Avenue.
- Remove the existing traffic signal at the Sumner Avenue intersection with Belmont Avenue south.
- Reconstruct the Belmont Avenue and Commonwealth Avenue intersection to provide a mini-roundabout, with Belmont Avenue south and Commonwealth Avenue providing two-way traffic flow, and Belmont Avenue north providing one-way traffic flow approaching the intersection (i.e., away from the "X").

Sumner Avenue West of the "X"

- Relocate the Sumner Avenue traffic signal from the intersection with Lenox Street to the intersection with Cliftwood Street.
- Convert Lenox Street to a one-way roadway southbound from Sumner Avenue.

- Convert Cliftwood Street to a one-way roadway northbound toward Sumner Avenue.
- Remove the existing traffic signal at the Sumner Avenue intersection with Lenox Street.
- Place the Sumner Avenue and Cliftwood Street intersection under traffic signal control. Contain the Cliftwood Street traffic signal within a coordinated traffic signal system with the "X" signalized intersection. Consider installing Rectangular Rapid Flash Beacons (RFFBs) for the crosswalks across Sumner Avenue at this intersection to enhance safety by increasing driver awareness of potential pedestrian conflicts.

Sumner Avenue at Oakland Street

- Restripe the Sumner Avenue eastbound approach to provide an exclusive left-turn lane and two through lanes.
- Reconfigure the Oakland Street southbound approach to provide an exclusive left-turn lane and a shared left/right-turn lane.

Sumner Avenue at Ormond Street

- Place the Sumner Avenue and Ormond Street intersection under traffic signal control. Contain the Ormond Street traffic signal within a coordinated traffic signal system with the "X" signalized intersection.
- Restripe the Ormond Street northbound approach to provide an exclusive left-turn lane and a shared left-turn/through/right-turn lane.

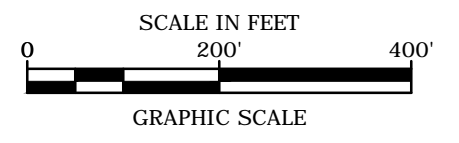
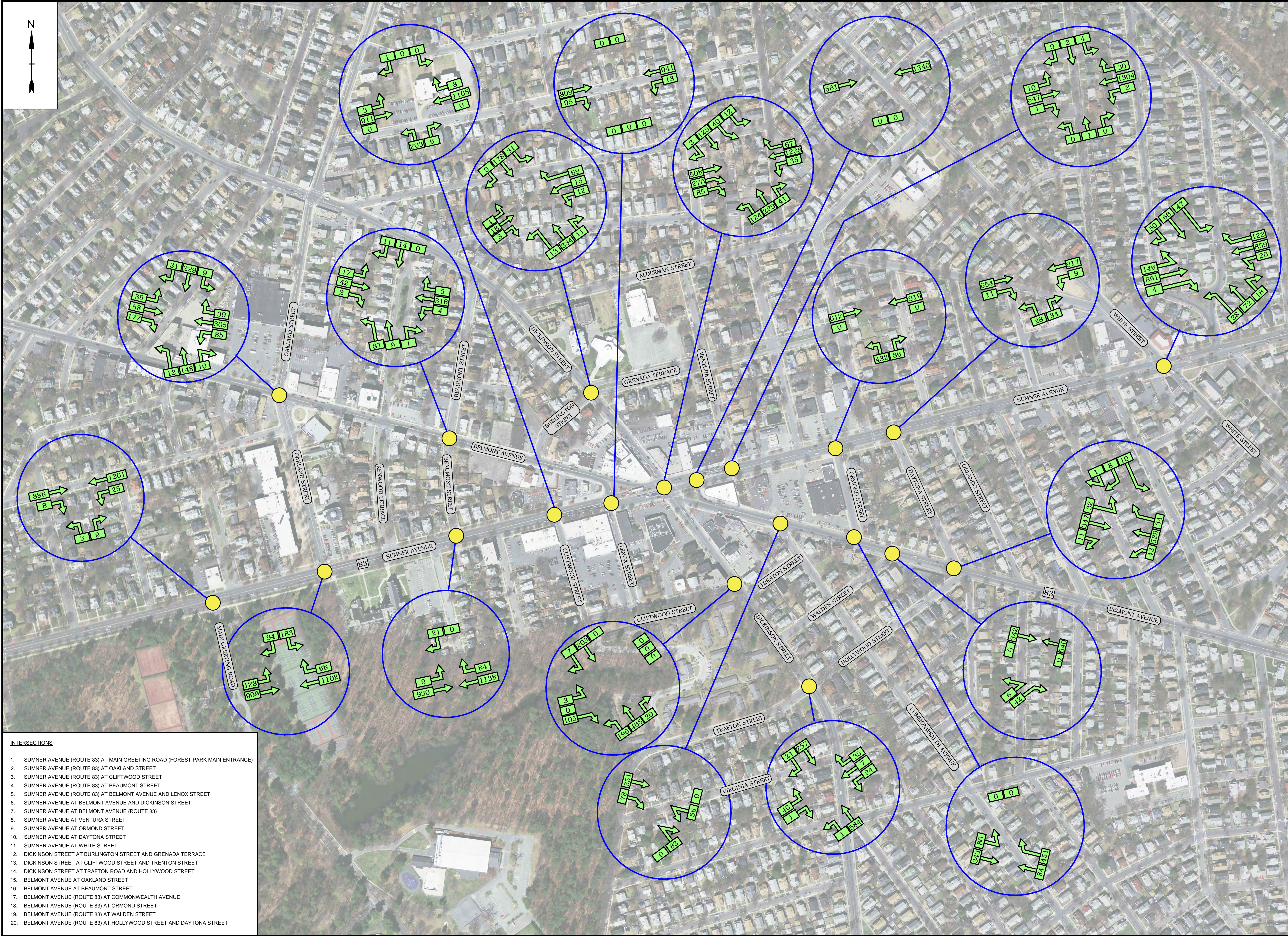
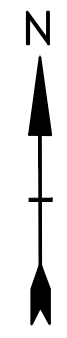
Sumner Avenue at White Street

- Retime the traffic signal during the Weekday Midday peak period to provide more green time indication on the Sumner Avenue eastbound/westbound permissive phase.

Sumner Avenue at Main Greeting Road (Forest Park main entrance)

- Construct a Sumner Avenue westbound exclusive left-turn lane for access into Forest Park.

The Design Year traffic volumes are depicted on the accompanying aerial graphics (Sheets 1 through 3: 2015 Design Year Traffic Volumes) for the Weekday AM, Weekday Midday, and Weekday PM peak hours with the improvement measures implemented.



**Springfield
 "X" Intersection
 Traffic Volumes**
 Springfield,
 Massachusetts

January 2016

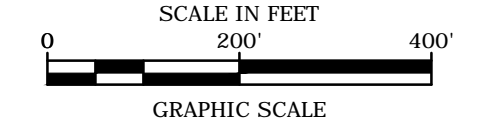
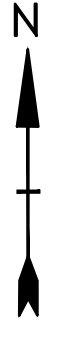
- INTERSECTIONS**
- SUMNER AVENUE (ROUTE 83) AT MAIN GREETING ROAD (FOREST PARK MAIN ENTRANCE)
 - SUMNER AVENUE (ROUTE 83) AT OAKLAND STREET
 - SUMNER AVENUE (ROUTE 83) AT CLIFTWOOD STREET
 - SUMNER AVENUE (ROUTE 83) AT BEAUMONT STREET
 - SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
 - SUMNER AVENUE AT BELMONT AVENUE AND DICKINSON STREET
 - SUMNER AVENUE AT BELMONT AVENUE (ROUTE 83)
 - SUMNER AVENUE AT VENTURA STREET
 - SUMNER AVENUE AT ORMOND STREET
 - SUMNER AVENUE AT DAYTONA STREET
 - SUMNER AVENUE AT WHITE STREET
 - DICKINSON STREET AT BURLINGTON STREET AND GRENADA TERRACE
 - DICKINSON STREET AT CLIFTWOOD STREET AND TRENTON STREET
 - DICKINSON STREET AT TRAFTON ROAD AND HOLLYWOOD STREET
 - BELMONT AVENUE AT OAKLAND STREET
 - BELMONT AVENUE AT BEAUMONT STREET
 - BELMONT AVENUE (ROUTE 83) AT COMMONWEALTH AVENUE
 - BELMONT AVENUE (ROUTE 83) AT ORMOND STREET
 - BELMONT AVENUE (ROUTE 83) AT WALDEN STREET
 - BELMONT AVENUE (ROUTE 83) AT HOLLYWOOD STREET AND DAYTONA STREET

Mark	Date	Description

PROJECT NO:	S-2125
FILE:	S-2125_AERIAL_BASE.DWG
DRAWN BY:	BJL, AGB
CHECKED BY:	JRP
APPROVED BY:	JRP

2015 DESIGN YEAR
 TRAFFIC VOLUMES
 WEEKDAY MORNING PEAK HOUR

SCALE: AS SHOWN



**Springfield
 "X" Intersection
 Traffic Volumes**
 Springfield,
 Massachusetts

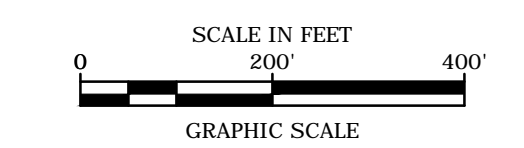
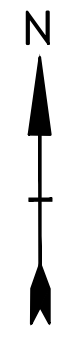
January 2016

- INTERSECTIONS**
- SUMNER AVENUE (ROUTE 83) AT MAIN GREETING ROAD (FOREST PARK MAIN ENTRANCE)
 - SUMNER AVENUE (ROUTE 83) AT OAKLAND STREET
 - SUMNER AVENUE (ROUTE 83) AT CLIFTWOOD STREET
 - SUMNER AVENUE (ROUTE 83) AT BEAUMONT STREET
 - SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
 - SUMNER AVENUE AT BELMONT AVENUE AND DICKINSON STREET
 - SUMNER AVENUE AT BELMONT AVENUE (ROUTE 83)
 - SUMNER AVENUE AT VENTURA STREET
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 - SUMNER AVENUE AT WHITE STREET
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 - DICKINSON STREET AT CLIFTWOOD STREET AND TRENTON STREET
 - DICKINSON STREET AT TRAFTON ROAD AND HOLLYWOOD STREET
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 - BELMONT AVENUE (ROUTE 83) AT ORMOND STREET
 - BELMONT AVENUE (ROUTE 83) AT WALDEN STREET
 - BELMONT AVENUE (ROUTE 83) AT HOLLYWOOD STREET AND DAYTONA STREET

Mark	Date	Description
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FILE:	S-2125_AERIAL_BASE.DWG	
DRAWN BY:	BJL, AGB	
CHECKED BY:	JRP	
APPROVED BY:	JRP	

2015 DESIGN YEAR
 TRAFFIC VOLUMES
 WEEKDAY MID-DAY PEAK HOUR

SCALE: AS SHOWN



Springfield "X" Intersection
Traffic Volumes
 Springfield, Massachusetts

January 2016

Mark	Date	Description

- INTERSECTIONS**
- SUMNER AVENUE (ROUTE 83) AT MAIN GREETING ROAD (FOREST PARK MAIN ENTRANCE)
 - SUMNER AVENUE (ROUTE 83) AT OAKLAND STREET
 - SUMNER AVENUE (ROUTE 83) AT CLIFWOOD STREET
 - SUMNER AVENUE (ROUTE 83) AT BEAUMONT STREET
 - SUMNER AVENUE (ROUTE 83) AT BELMONT AVENUE AND LENOX STREET
 - SUMNER AVENUE AT BELMONT AVENUE AND DICKINSON STREET
 - SUMNER AVENUE AT BELMONT AVENUE (ROUTE 83)
 - SUMNER AVENUE AT VENTURA STREET
 - SUMNER AVENUE AT ORMOND STREET
 - SUMNER AVENUE AT DAYTONA STREET
 - SUMNER AVENUE AT WHITE STREET
 - DICKINSON STREET AT BURLINGTON STREET AND GRENADA TERRACE
 - DICKINSON STREET AT CLIFWOOD STREET AND TRENTON STREET
 - DICKINSON STREET AT TRAFTON ROAD AND HOLLYWOOD STREET
 - BELMONT AVENUE AT OAKLAND STREET
 - BELMONT AVENUE AT BEAUMONT STREET
 - BELMONT AVENUE (ROUTE 83) AT COMMONWEALTH AVENUE
 - BELMONT AVENUE (ROUTE 83) AT ORMOND STREET
 - BELMONT AVENUE (ROUTE 83) AT WALDEN STREET
 - BELMONT AVENUE (ROUTE 83) AT HOLLYWOOD STREET AND DAYTONA STREET

INTERSECTION OPERATIONAL ANALYSIS

Capacity Analysis Methodology

Capacity analyses were performed for the study intersections with the 2015 Existing conditions and 2015 Design Year conditions with and without Sumner Avenue westbound left-turns at the "X" during the Weekday AM, Weekday Midday, and Weekday PM peak hours based on the methodology and procedures set forth in the *Highway Capacity Manual* (HCM).⁷ The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle.

The Sumner Avenue signalized intersections with Dickinson Street, Lenox Street, and Belmont Avenue (east) operate under the same traffic signal controller (i.e., cluster). Since the HCM 2010 methodology does not support signalized intersections that include clustered intersections or do not adhere to strict National Electrical Manufacturers Association (NEMA) phasing, the HCM 2000 methodology and procedures have been used to evaluate intersection operations under all conditions.

The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. A definition of LOS is provided in the Appendix.

Queue Length Analysis Methodology

Vehicle queue analyses were computed for the study area intersections using the *Trafficware SimTraffic* version 8.0 software program, a MassDOT approved traffic analysis tool. The quantitative measure of vehicle queue length is defined as the 50th and 95th percentile queue.

For signalized intersections, the quantitative measure of vehicle queue length is defined as the 50th and 95th percentile queue. The 50th percentile queue represents the average queue length during the peak hour and the 95th percentile queue represents the calculated maximum back of queue that has a probability of 5% or less of being exceeded during the peak hour.

For unsignalized intersections, the quantitative measure of vehicle queue length is defined as the 95th percentile queue. The 95th percentile queue represents the percent of time during the peak period being analyzed that the calculated maximum back of queue would be equal to or less than the percentile estimate (i.e., the maximum queue length that would be exceeded only 5% of the time).

Queue Length Analysis Methodology

The capacity and queue length analysis results are summarized in Table 2 for the 2015 Existing and 2015 Design Year traffic-volume conditions. The computer-generated analysis reports are provided in the Appendix.

⁷ *Highway Capacity Manual*. Washington, D.C.: Transportation Research Board, National Research Council, 2000.

TABLE 2
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Main Greeting Road								
<i>Weekday AM:</i>								
Sumner Avenue WB Left-Turns	0.04	0.0	A	27/85	0.39	0.0	A	16/45
Main Greeting Road NB Left/Right-Turns	0.10	17.5	C	10/36	0.10	18.1	C	10/34
<i>Weekday Midday:</i>								
Sumner Avenue WB Left-Turns	0.07	2.3	A	33/107	0.07	16.5	C	15/47
Main Greeting Road NB Left/Right-Turns	0.51	60.5	F	77/269	0.51	61.2	F	21/66
<i>Weekday PM:</i>								
Sumner Avenue WB Left-Turns	0.05	1.6	A	21/77	0.05	14.0	B	15/42
Main Greeting Road NB Left/Right-Turns	0.33	90.1	F	43/117	0.33	92.5	F	12/42

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Oakland Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left/Through	1.36	180.6	F	342/528	--	--	--	--
Sumner Avenue EB Left-Turns	--	--	--	--	0.67	16.2	B	57/101
Sumner Avenue EB Through	--	--	--	--	0.42	5.7	A	87/148
Sumner Avenue WB Through/Right	0.93	27.1	C	192/237	0.78	14.6	B	146/250
Oakland Street SB Left/Right-Turns	0.24	8.9	A	48/92	--	--	--	--
Oakland Street SB Left-Turns	--	--	--	--	0.58	23.1	C	70/126
Oakland Street SB Right-Turns	--	--	--	--	0.18	13.3	B	45/91
Overall Intersection	0.80	93.7	F	--	0.72	12.0	B	--
<i>Weekday Midday:</i>								
Sumner Avenue EB Left/Through	1.43	210.9	F	351/601	--	--	--	--
Sumner Avenue EB Left-Turns	--	--	--	--	0.58	12.8	B	52/101
Sumner Avenue EB Through	--	--	--	--	0.57	9.2	A	121/187
Sumner Avenue WB Through/Right	0.76	20.8	C	167/218	0.70	16.4	B	131/210
Oakland Street SB Left/Right-Turns	0.27	9.1	A	48/88	--	--	--	--
Oakland Street SB Left-Turns	--	--	--	--	0.78	30.4	C	135/222
Oakland Street SB Right-Turns	--	--	--	--	0.17	12.5	B	60/143
Overall Intersection	0.85	121.2	F	--	0.74	14.7	B	--
<i>Weekday PM:</i>								
Sumner Avenue EB Left/Through	1.72	340.2	F	480/585	--	--	--	--
Sumner Avenue EB Left-Turns	--	--	--	--	0.77	25.2	C	66/118
Sumner Avenue EB Through	--	--	--	--	0.59	9.6	A	149/221
Sumner Avenue WB Through/Right	0.80	21.3	C	166/248	0.71	16.8	B	146/247
Oakland Street SB Left/Right-Turns	0.36	10.0	A	56/97	--	--	--	--
Oakland Street SB Left-Turns	--	--	--	--	0.75	29.0	C	180/345
Oakland Street SB Right-Turns	--	--	--	--	0.26	13.9	B	117/229
Overall Intersection	1.04	189.6	F	--	0.81	15.3	B	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Beaumont Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left-Turns	0.01	0.5	A	7/33	0.02	0.5	A	7/31
Beaumont Street SB Left/Right-Turns	0.03	9.3	A	15/38	0.03	10.4	B	13/34
<i>Weekday Midday:</i>								
Sumner Avenue EB Left-Turns	0.04	1.1	A	20/65	0.04	1.1	A	17/58
Beaumont Street SB Left/Right-Turns	0.02	9.7	A	10/35	0.04	13.5	B	12/38
<i>Weekday PM:</i>								
Sumner Avenue EB Left-Turns	0.03	1.0	A	18/61	0.04	1.1	A	89/362
Beaumont Street SB Left/Right-Turns	0.07	10.4	B	25/51	0.20	20.6	C	88/274

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Cliftwood Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left-Turns	0.00	0.1	A	13/57	--	--	--	--
Sumner Avenue EB Left/Through	--	--	--	--	0.45	7.2	A	97/193
Sumner Avenue WB Left-Turns	0.02	0.4	A	11/55	--	--	--	--
Sumner Avenue WB Through/Right	--	--	--	--	0.52	3.7	A	72/149
Cliftwood Street NB Left/Through/Right	--	--	--	--	0.73	42.2	D	125/222
Driveway SB Left/Through/Right	0.00	9.2	A	1/10	0.00	28.3	C	0/6
Overall Intersection	--	--	--	--	0.57	8.7	A	--
<i>Weekday Midday:</i>								
Sumner Avenue EB Left-Turns	0.00	0.0	A	39/131	--	--	--	--
Sumner Avenue EB Left/Through	--	--	--	--	0.60	6.9	A	146/258
Sumner Avenue WB Left-Turns	0.04	1.1	A	39/114	--	--	--	--
Sumner Avenue WB Through/Right	--	--	--	--	0.44	2.4	A	71/167
Cliftwood Street NB Left/Through/Right	--	--	--	--	0.67	42.9	D	102/176
Driveway SB Left/Through/Right	0.00	0.0	A	0/0	0.00	0.0	A	0/0
Overall Intersection	--	--	--	--	0.61	7.3	A	--
<i>Weekday PM:</i>								
Sumner Avenue EB Left-Turns	0.00	0.0	A	40/160	--	--	--	--
Sumner Avenue EB Left/Through	--	--	--	--	0.53	4.6	A	242/439
Sumner Avenue WB Left-Turns	0.04	0.9	A	40/118	--	--	--	--
Sumner Avenue WB Through/Right	--	--	--	--	0.46	7.3	A	87/174
Cliftwood Street NB Left/Through/Right	--	--	--	--	0.60	43.9	D	75/136
Driveway SB Left/Through/Right	0.00	0.0	A	23/102	0.00	0.0	A	0/0
Overall Intersection	--	--	--	--	0.53	7.4	A	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Belmont Street (west) and Lenox Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left/Through	0.52	28.1	C	133/200	--	--	--	--
Sumner Avenue WB Left-Turns	--	--	--	--	0.02	0.6	A	14/67
Sumner Avenue WB Through/Right	0.65	13.7	B	136/209	--	--	--	--
Lenox Street NB Left-Turns	0.75	53.1	D	148/240	--	--	--	--
Lenox Street NB Through/Right	0.25	39.4	D	52/105	--	--	--	--
Belmont Avenue SB Left-Turns	0.56	42.6	D	74/102	--	--	--	--
Belmont Avenue SB Right-Turns	0.00	35.4	D	1/8	--	--	--	--
Overall Intersection	0.65	26.8	C	--	--	--	--	--
<i>Weekday Midday:</i>								
Sumner Avenue EB Left/Through	0.64	31.6	C	175/199	--	--	--	--
Sumner Avenue WB Left-Turns	--	--	--	--	0.05	1.8	A	36/102
Sumner Avenue WB Through/Right	0.59	14.8	B	110/179	--	--	--	--
Lenox Street NB Left-Turns	0.54	42.8	D	109/177	--	--	--	--
Lenox Street NB Through/Right	0.18	37.9	D	41/90	--	--	--	--
Belmont Avenue SB Left-Turns	0.94	79.6	E	82/99	--	--	--	--
Belmont Avenue SB Right-Turns	0.00	36.6	D	3/18	--	--	--	--
Overall Intersection	0.69	33.9	C	--	--	--	--	--
<i>Weekday PM:</i>								
Sumner Avenue EB Left/Through	0.74	34.5	C	175/189	--	--	--	--
Sumner Avenue WB Left-Turns	--	--	--	--	0.05	1.7	A	39/111
Sumner Avenue WB Through/Right	0.63	9.6	A	93/151	--	--	--	--
Lenox Street NB Left-Turns	0.46	41.2	D	96/167	--	--	--	--
Lenox Street NB Through/Right	0.10	37.0	D	26/62	--	--	--	--
Belmont Avenue SB Left-Turns	1.03	103.6	F	83/97	--	--	--	--
Belmont Avenue SB Right-Turns	0.00	36.9	D	5/26	--	--	--	--
Overall Intersection	0.74	36.7	D	--	--	--	--	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Dickinson Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Through	0.40	7.3	A	27/70	0.29	7.2	A	39/96
Sumner Avenue EB Right-Turns	0.49	5.0	A	33/93	0.39	6.7	A	66/153
Sumner Avenue WB Left-Turns	--	--	--	--	0.43	51.6	D	14/42
Sumner Avenue WB Through	0.56	3.1	A	15/58	0.61	6.8	A	151/235
Sumner Avenue WB Right-Turns	0.07	0.9	A	0/3	--	--	--	--
Dickinson Street NB Left-Turns	--	--	--	--	0.59	35.2	D	95/182
Dickinson Street NB Through/Right	--	--	--	--	0.73	39.0	D	132/210
Dickinson Street NB Left/Through/Right	0.84	60.0	E	250/395	--	--	--	--
Dickinson Street SB Left/Through/Right	0.61	45.6	D	186/373	0.55	33.0	C	101/189
Overall Intersection	0.66	13.1	B	--	0.69	13.5	B	--
<i>Weekday Midday:</i>								
Sumner Avenue EB T	0.49	8.1	A	37/90	0.36	9.3	A	72/143
Sumner Avenue EB R	0.77	12.8	B	112/201	0.63	12.6	B	125/217
Sumner Avenue WB L	--	--	--	--	0.57	51.9	D	28/72
Sumner Avenue WB T	0.45	2.3	A	4/23	0.49	6.3	A	109/201
Sumner Avenue WB R	0.07	1.0	A	0/0	--	--	--	--
Dickinson Street NB L	--	--	--	--	0.44	31.0	C	52/102
Dickinson Street NB T/R	--	--	--	--	0.57	32.4	C	117/191
Dickinson Street NB L/T/R	0.61	44.5	D	177/309	--	--	--	--
Dickinson Street SB L/T/R	0.93	80.6	F	401/560	0.91	65.0	E	167/313
Overall Intersection	0.74	16.5	B	--	0.72	17.1	B	--
<i>Weekday PM:</i>								
Sumner Avenue EB T	0.53	8.1	A	24/69	0.43	20.9	C	78/147
Sumner Avenue EB R	0.97	30.0	C	103/194	0.86	40.9	D	180/212
Sumner Avenue WB L	--	--	--	--	0.57	43.6	D	29/71
Sumner Avenue WB T	0.50	2.6	A	4/21	0.57	15.9	B	131/211
Sumner Avenue WB R	0.02	1.0	A	2/12	--	--	--	--
Dickinson Street NB L	--	--	--	--	0.43	27.2	C	58/109
Dickinson Street NB T/R	--	--	--	--	0.48	27.2	C	105/182
Dickinson Street NB L/T/R	0.65	45.8	D	186/337	--	--	--	--
Dickinson Street SB L/T/R	1.13	137.8	F	423/567	0.91	56.6	E	251/453
Overall Intersection	0.90	27.5	C	--	0.88	28.0	C	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Belmont Avenue (east)								
<i>Weekday AM:</i>								
Sumner Avenue EB Through	0.30	0.3	A	50/101	--	--	--	--
Sumner Avenue WB Through	0.51	27.8	C	56/70	--	--	--	--
Belmont Avenue NB Left/Right-Turns	0.96	80.8	F	101/109	--	--	--	--
Overall Intersection	0.59	29.6	C	--	--	--	--	--
<i>Weekday Midday:</i>								
Sumner Avenue EB Through	0.30	0.1	A	10/48	--	--	--	--
Sumner Avenue WB Through	0.40	27.5	C	56/71	--	--	--	--
Belmont Avenue NB Left/Right-Turns	0.90	69.5	E	100/110	--	--	--	--
Overall Intersection	0.51	24.9	C	--	--	--	--	--
<i>Weekday PM:</i>								
Sumner Avenue EB Through	0.33	0.1	A	9/33	--	--	--	--
Sumner Avenue WB Through	0.41	27.8	C	54/65	--	--	--	--
Belmont Avenue NB Left/Right-Turns	0.99	88.9	F	101/110	--	--	--	--
Overall Intersection	0.55	28.6	C	--	--	--	--	--
Sumner Avenue at Ventura Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left-Turns	0.02	0.5	A	12/45	0.02	0.7	A	22/85
Sumner Avenue WB Left-Turns	0.18	0.1	A	191/298	0.00	0.1	A	16/135
Commercial Driveway NB Left/Through/Right	0.04	39.8	E	2/14	0.04	43.4	E	1/10
Ventura Street SB Left/Through/Right	0.09	22.8	C	17/54	0.10	24.5	C	22/77
<i>Weekday Midday:</i>								
Sumner Avenue EB Left-Turns	0.01	0.5	A	9/38	0.02	0.6	A	21/79
Sumner Avenue WB Left-Turns	0.01	0.3	A	134/220	0.01	0.2	A	4/22
Commercial Driveway NB Left/Through/Right	0.08	20.6	C	7/27	0.08	20.9	C	7/28
Ventura Street SB Left/Through/Right	0.12	22.0	C	21/50	0.13	23.3	C	20/49
<i>Weekday PM:</i>								
Sumner Avenue EB Left-Turns	0.01	0.2	A	4/25	0.01	0.2	A	4/25
Sumner Avenue WB Left-Turns	0.00	0.1	A	154/245	0.00	0.1	A	1/12
Commercial Driveway NB Left/Through/Right	0.15	25.5	D	9/32	0.15	25.3	D	9/37
Ventura Street SB Left/Through/Right	0.25	29.5	D	26/53	0.27	32.1	D	27/64

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Ormond Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Through	--	--	--	--	0.27	2.4	A	66/137
Sumner Avenue WB Left-Turns	0.04	1.3	A	33/115	--	--	--	--
Sumner Avenue WB Through	--	--	--	--	0.36	6.8	A	180/250
Ormond Street NB Left/Right-Turns	0.52	26.0	D	57/107	0.72	36.1	D	185/271
Overall Intersection	--	--	--	--	0.45	13.2	B	--
<i>Weekday Midday:</i>								
Sumner Avenue EB Through	--	--	--	--	0.31	2.3	A	60/161
Sumner Avenue WB Left-Turns	0.08	2.6	A	26/68	--	--	--	--
Sumner Avenue WB Through	--	--	--	--	0.33	5.4	A	142/234
Ormond Street NB Left/Right-Turns	0.32	20.6	C	38/67	0.68	37.2	D	169/264
Overall Intersection	--	--	--	--	0.40	11.2	B	--
<i>Weekday PM:</i>								
Sumner Avenue EB Through	--	--	--	--	0.39	11.9	B	122/240
Sumner Avenue WB Left-Turns	0.08	2.8	A	35/111	--	--	--	--
Sumner Avenue WB Through	--	--	--	--	0.31	5.4	A	143/230
Ormond Street NB Left/Right-Turns	0.36	21.6	C	33/58	0.69	38.7	D	155/254
Overall Intersection	--	--	--	--	0.45	15.0	B	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at Daytona Street								
<i>Weekday AM:</i>								
Sumner Avenue WB Left-Turns	0.01	0.4	A	12/96				No Change
Daytona Street NB Left/Right-Turns	0.19	15.4	C	29/59				
<i>Weekday Midday:</i>								
Sumner Avenue WB Left-Turns	0.03	1.0	A	10/44				No Change
Daytona Street NB Left/Right-Turns	0.22	20.2	C	26/49				
<i>Weekday PM:</i>								
Sumner Avenue WB Left-Turns	0.04	1.3	A	17/71				No Change
Daytona Street NB Left/Right-Turns	0.25	22.6	C	27/53				

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Sumner Avenue at White Street								
<i>Weekday AM:</i>								
Sumner Avenue EB Left-Turns	0.84	44.2	D	129/215				
Sumner Avenue EB Through/Right	0.52	10.5	B	181/450				
Sumner Avenue WB Left-Turns	0.09	8.3	A	5/18				
Sumner Avenue WB Through/Right	0.73	13.6	B	93/151				
White Street NB Left-Turns	0.08	7.7	A	12/36		No Change		
White Street NB Through/Right	0.12	7.9	A	28/64				
White Street SB Left-Turns	0.10	7.9	A	13/37				
White Street SB Through/Right	0.14	8.1	A	39/80				
Overall Intersection	0.49	13.8	B	--				
<i>Weekday Midday:</i>								
Sumner Avenue EB Left-Turns	1.10	106.2	F	156/221				
Sumner Avenue EB Through/Right	0.65	12.0	B	461/854				
Sumner Avenue WB Left-Turns	0.26	11.5	B	19/63				
Sumner Avenue WB Through/Right	0.79	15.2	B	113/185				
White Street NB Left-Turns	0.10	8.0	A	16/40		No Change		
White Street NB Through/Right	0.25	8.8	A	52/95				
White Street SB Left-Turns	0.23	9.1	A	34/86				
White Street SB Through/Right	0.42	10.4	B	72/127				
Overall Intersection	0.76	19.1	B	--				
<i>Weekday PM:</i>								
Sumner Avenue EB Left-Turns	0.52	18.8	B	41/96				
Sumner Avenue EB Through/Right	0.71	13.1	B	85/153				
Sumner Avenue WB Left-Turns	0.19	10.1	B	13/48				
Sumner Avenue WB Through/Right	0.67	12.3	B	92/151				
White Street NB Left-Turns	0.17	8.8	A	18/46		No Change		
White Street NB Through/Right	0.38	10.0	B	69/116				
White Street SB Left-Turns	0.31	10.1	B	42/84				
White Street SB Through/Right	0.53	11.8	B	90/163				
Overall Intersection	0.62	12.3	B	--				

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Dickinson Street at Burlington Street and Granada Terrace								
<i>Weekday AM:</i>								
Burlington Street EB Left/Through/Right	0.11	15.7	C	17/44				
Grenada Terrace WB Left/Through/Right	0.21	13.2	B	33/95				
Dickinson Street NB Left-Turns	0.01	0.4	A	2/19			No Change	
Dickinson Street SB Left-Turns	0.03	1.4	A	18/95				
<i>Weekday Midday:</i>								
Burlington Street EB Left/Through/Right	0.21	21.1	C	61/141				
Grenada Terrace WB Left/Through/Right	0.28	15.7	C	109/260			No Change	
Dickinson Street NB Left-Turns	0.02	0.6	A	6/29				
Dickinson Street SB Left-Turns	0.06	1.9	A	315/691				
<i>Weekday PM:</i>								
Burlington Street EB Left/Through/Right	0.24	21.8	C	62/145				
Grenada Terrace WB Left/Through/Right	0.14	13.9	B	109/260			No Change	
Dickinson Street NB Left-Turns	0.02	0.6	A	9/51				
Dickinson Street SB Left-Turns	0.07	2.0	A	388/732				
Dickinson Street at Cliftwood Street								
<i>Weekday AM:</i>								
Cliftwood Street EB Left/Right-Turns	0.19	11.6	B	30/53	0.18	11.3	B	31/56
Dickinson Street NB Left-Turns	0.25	5.5	A	42/76	0.16	3.8	A	32/69
<i>Weekday Midday:</i>								
Cliftwood Street EB Left/Right-Turns	0.38	13.5	B	41/77	0.37	13.1	B	45/84
Dickinson Street NB Left-Turns	0.19	5.1	A	37/67	0.11	3.2	A	24/62
<i>Weekday PM:</i>								
Cliftwood Street EB Left/Right-Turns	0.31	12.7	B	40/80	0.31	12.9	B	39/76
Dickinson Street NB Left-Turns	0.16	4.5	A	35/71	0.08	2.3	A	24/61

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Dickinson Street at Trenton Street								
<i>Weekday AM:</i>								
Trenton Street WB Left/Right-Turns	0.00	0.0	A	0/0				
Dickinson Street SB Left-Turns	0.00	0.0	A	0/5			No Change	
<i>Weekday Midday:</i>								
Trenton Street WB Left/Right-Turns	0.00	0.0	A	0/0			No Change	
Dickinson Street SB Left-Turns	0.01	0.2	A	5/28			No Change	
<i>Weekday PM:</i>								
Trenton Street WB Left/Right-Turns	0.00	0.0	A	0/0			No Change	
Dickinson Street SB Left-Turns	0.00	0.0	A	0/0			No Change	
Dickinson Street at Trafton Road and Hollywood Street								
<i>Weekday AM:</i>								
Trafton Street EB Left/Right-Turns	0.28	28.3	D	25/49				
Hollywood Street WB Left/Through/Right	0.22	19.1	C	34/71			No Change	
Dickinson Street NB Left-Turns	0.00	0.0	A	1/14				
<i>Weekday Midday:</i>								
Trafton Street EB Left/Right-Turns	0.45	36.0	E	28/65				
Hollywood Street WB Left/Through/Right	0.35	22.2	C	35/64			No Change	
Dickinson Street NB Left-Turns	0.00	0.1	A	2/14				
<i>Weekday PM:</i>								
Trafton Street EB Left/Right-Turns	0.36	33.2	D	31/53				
Hollywood Street WB Left/Through/Right	0.42	26.7	D	38/66			No Change	
Dickinson Street NB Left-Turns	0.00	0.1	A	1/9				

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Belmont Avenue at Oakland Street								
<i>Weekday AM:</i>								
Belmont Avenue EB Left/Through/Right	0.63	19.8	B	151/390	0.32	7.9	A	66/125
Belmont Avenue WB Left/Through/Right	1.01	63.3	E	265/523	0.73	14.0	B	92/161
Oakland Street NB Left/Through	0.20	8.9	A	30/69	0.36	11.7	B	48/109
Oakland Street NB Right-Turns	0.03	7.7	A	11/39	0.01	10.0	A	4/18
Oakland Street SB Left/Through/Right	0.37	10.5	B	70/138	0.57	13.6	B	76/146
Overall Intersection	0.62	32.3	C	--	0.66	12.1	B	--
<i>Weekday Midday:</i>								
Belmont Avenue EB Left/Through/Right	1.02	65.0	E	588/1,101	0.65	12.0	B	117/226
Belmont Avenue WB Left/Through/Right	0.93	45.0	D	360/690	0.67	12.7	B	115/258
Oakland Street NB Left/Through	0.16	8.6	A	22/52	0.27	10.3	B	42/90
Oakland Street NB Right-Turns	0.01	7.6	A	7/25	0.00	9.1	A	3/16
Oakland Street SB Left/Through/Right	0.45	11.5	B	76/145	0.63	13.8	B	87/169
Overall Intersection	0.67	39.7	D	--	0.65	12.5	B	--
<i>Weekday PM:</i>								
Belmont Avenue EB Left/Through/Right	1.21	132.2	F	764/1,215	0.77	16.3	B	182/444
Belmont Avenue WB Left/Through/Right	0.79	26.9	C	263/566	0.54	10.1	B	111/269
Oakland Street NB Left/Through	0.16	8.6	A	30/68	0.28	11.4	B	38/83
Oakland Street NB Right-Turns	0.02	7.6	A	7/29	0.00	10.1	B	3/15
Oakland Street SB Left/Through/Right	0.45	11.5	B	71/128	0.65	15.4	B	99/181
Overall Intersection	0.75	61.8	E	--	0.72	14.0	B	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Belmont Avenue at Beaumont Street								
<i>Weekday AM:</i>								
Belmont Avenue EB Left-Turns	0.02	0.8	A	7/34	0.02	2.4	A	4/19
Belmont Avenue WB Left-Turns	0.00	0.1	A	5/49	0.00	0.1	A	1/8
Beaumont Street NB Left/Through/Right	0.08	17.5	C	13/36	0.31	17.3	C	32/55
Beaumont Street SB Left/Through/Right	0.10	16.0	C	18/44	0.07	12.5	B	18/46
<i>Weekday Midday:</i>								
Belmont Avenue EB Left-Turns	0.03	0.9	A	20/105	0.03	2.7	A	4/18
Belmont Avenue WB Left-Turns	0.00	0.1	A	15/110	0.00	0.1	A	1/12
Beaumont Street NB Left/Through/Right	0.14	17.0	C	23/53	0.23	14.1	B	33/50
Beaumont Street SB Left/Through/Right	0.09	15.0	C	22/47	0.06	11.2	B	22/43
<i>Weekday PM:</i>								
Belmont Avenue EB Left-Turns	0.03	0.8	A	118/411	0.03	2.1	A	30/199
Belmont Avenue WB Left-Turns	0.01	0.4	A	7/43	0.01	0.4	A	7/57
Beaumont Street NB Left/Through/Right	0.18	18.9	C	23/55	0.25	16.2	C	30/58
Beaumont Street SB Left/Through/Right	0.18	18.9	C	40/139	0.11	12.8	B	32/83

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Belmont Avenue at Commonwealth Avenue ^e								
<i>Weekday AM:</i>								
Belmont Avenue EB Approach	--	--	--	--	0.46	8.9	A	1/14
Belmont Avenue WB Left-Turns	0.09	2.5	A	274/434	--	--	--	--
Belmont Avenue WB Approach	--	--	--	--	0.06	3.8	A	21/52
Commonwealth Avenue NB Left/Right-Turns	0.16	11.7	B	33/95	--	--	--	--
Commonwealth Avenue NB Approach	--	--	--	--	0.14	6.3	A	27/51
Overall Intersection	--	--	--	--	--	8.0	A	--
<i>Weekday Midday:</i>								
Belmont Avenue EB Approach	--	--	--	--	0.61	11.7	B	34/122
Belmont Avenue WB Left-Turns	0.10	3.0	A	167/345	--	--	--	--
Belmont Avenue WB Approach	--	--	--	--	0.03	3.5	A	1/9
Commonwealth Avenue NB Left/Right-Turns	0.37	17.1	C	208/723	--	--	--	--
Commonwealth Avenue NB Approach	--	--	--	--	0.26	8.7	A	27/57
Overall Intersection	--	--	--	--	--	10.7	B	--
<i>Weekday PM:</i>								
Belmont Avenue EB Approach	--	--	--	--	0.76	17.2	C	66/162
Belmont Avenue WB Left-Turns	0.14	3.8	A	244/418	--	--	--	--
Belmont Avenue WB Approach	--	--	--	--	0.06	3.7	A	2/14
Commonwealth Avenue NB Left/Right-Turns	0.42	22.9	C	406/1,063	--	--	--	--
Commonwealth Avenue NB Approach	--	--	--	--	0.25	9.7	A	28/53
Overall Intersection	--	--	--	--	--	15.2	C	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

^e Roundabout analyses performed using HCM2010.

TABLE 2 (continued)
Intersection Operations Summary

Intersection/Peak Hour/ Critical Movement or Lane Group	2015 Existing				2015 Design Year			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue
Belmont Avenue at Ormond Street								
<i>Weekday AM:</i>								
Belmont Avenue EB Left-Turns	0.08	2.5	A	34/115	0.08	2.5	A	72/173
Ormond Street SB Left/Right-Turns	0.14	15.2	C	117/304	--	--	--	--
<i>Weekday Midday:</i>								
Belmont Avenue EB Left-Turns	0.06	1.5	A	32/98	0.07	1.9	A	52/137
Ormond Street SB Left/Right-Turns	0.27	16.8	C	36/69	--	--	--	--
<i>Weekday PM:</i>								
Belmont Avenue EB Left-Turns	0.05	1.2	A	22/82	0.07	1.7	A	69/194
Ormond Street SB Left/Right-Turns	0.29	19.5	C	80/210	--	--	--	--
Belmont Avenue at Walden Street								
<i>Weekday AM:</i>								
Walden Street NB Left/Right-Turns	0.12	12.4	B	60/185		No Change		
<i>Weekday Midday:</i>								
Walden Street NB Left/Right-Turns	0.16	13.6	B	19/38		No Change		
<i>Weekday PM:</i>								
Walden Street NB Left/Right-Turns	0.21	17.2	C	30/75		No Change		
Belmont Avenue at Daytona Street and Hollywood Street								
<i>Weekday AM:</i>								
Belmont Avenue EB Left-Turns	0.04	1.1	A	16/62		No Change		
Belmont Avenue WB Left-Turns	0.04	1.0	A	280/856		No Change		
Daytona Street SB Left/Right-Turns	0.16	29.4	D	17/49		No Change		
<i>Weekday Midday:</i>								
Belmont Avenue EB Left-Turns	0.03	0.8	A	24/82		No Change		
Belmont Avenue WB Left-Turns	0.06	1.6	A	37/107		No Change		
Daytona Street SB Left/Right-Turns	0.21	31.0	D	15/37		No Change		
<i>Weekday PM:</i>								
Belmont Avenue EB Left-Turns	0.02	0.7	A	15/68		No Change		
Belmont Avenue WB Left-Turns	0.06	1.6	A	78/304		No Change		
Daytona Street SB Left/Right-Turns	0.36	43.2	E	20/45		No Change		

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane or per critical movement.

APPENDIX

Neighborhood Meeting Presentation
Traffic Counts

PVTA Bus Route Schedules and Maps
Capacity Analysis Methodology
Capacity Analysis Worksheets
MassDOT Crash Rate Worksheets

Neighborhood Meeting Presentation

Springfield "X"

Neighborhood Meeting

October 6, 2015

Paul M. Furgal, P.E., PTOE
David L. Loring, P.E., ENV SP, LEED AP



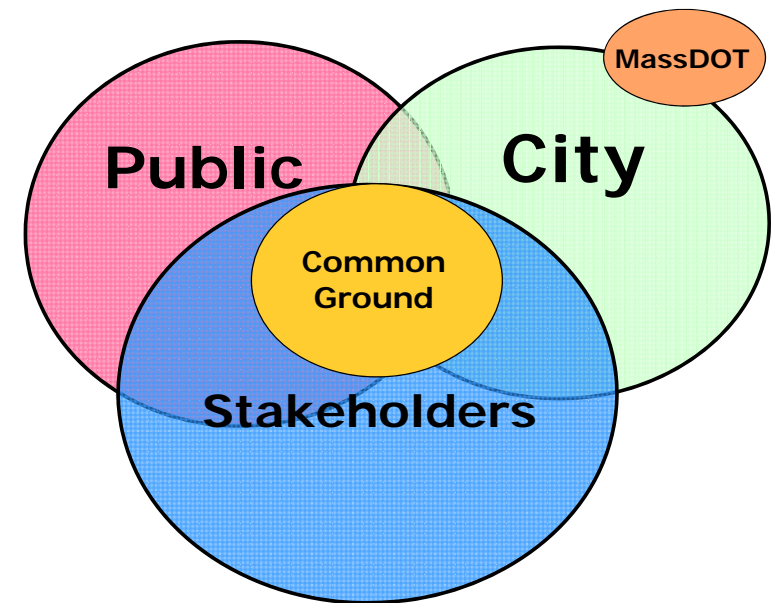
Project History

“the meanest street” – local media

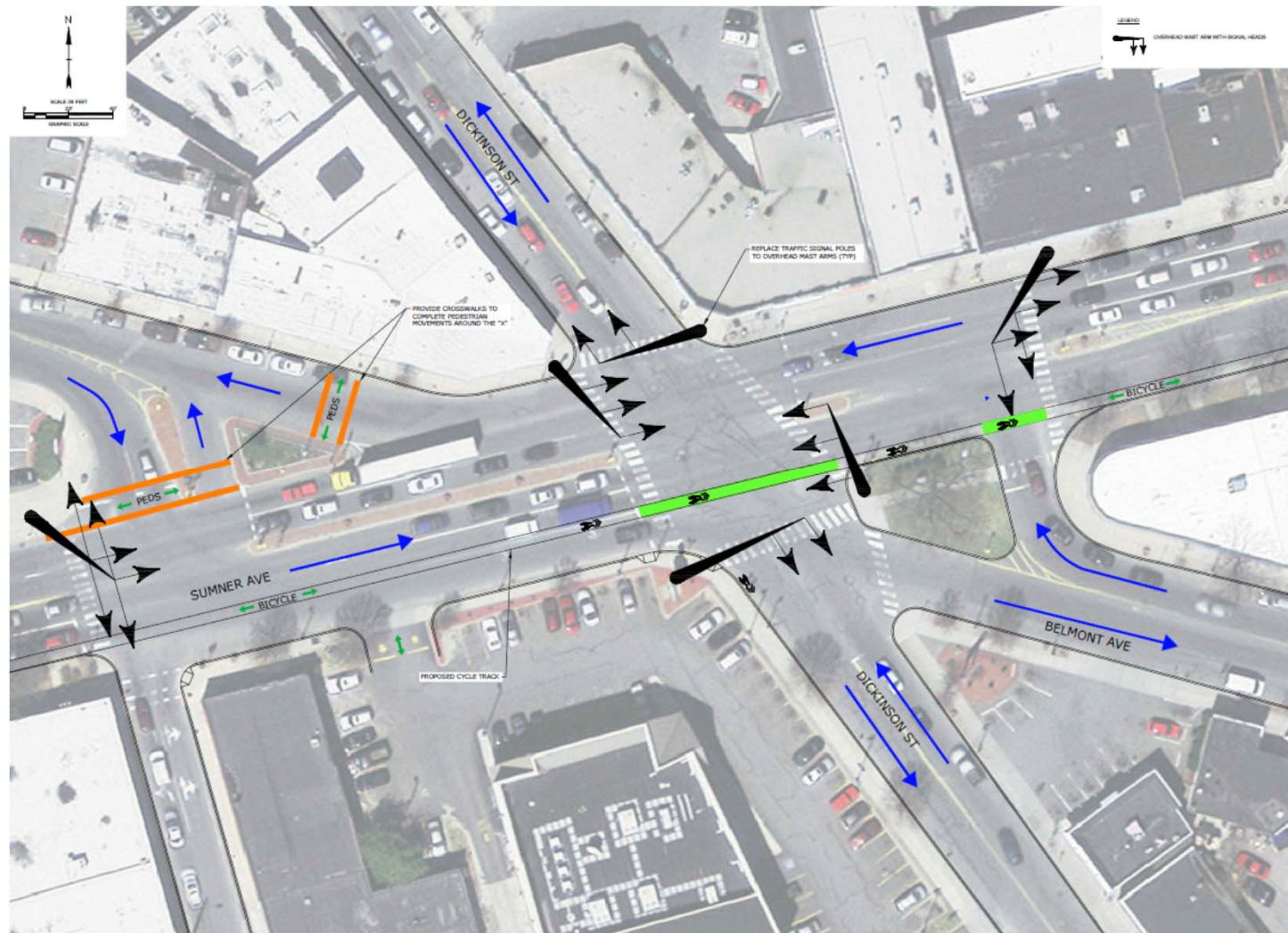
- **UMASS – Amherst Design Center Study**
- **Springfield - Complete Streets**
- **MassDOT Healthy Transportation Policy**
- **NACTO – Urban Street Design Guide**

Project Goals

- **Safety**
- **Traffic Improvements**
- **Economic Development**
- **Multi-Modal Accommodations**
- **Forest Park Access/Integration**
- **Streetscape**
- **Parking**



Concept 1



Concept 2



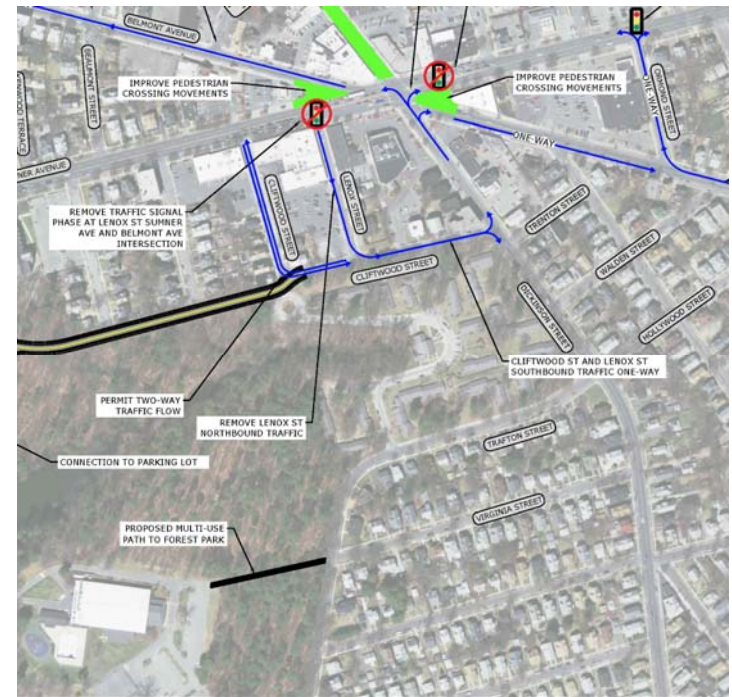
Concept 3



Concept 3



Forest Park Improvements



Proposed Park Drive



Before



After



Before



After



Before



After



Before



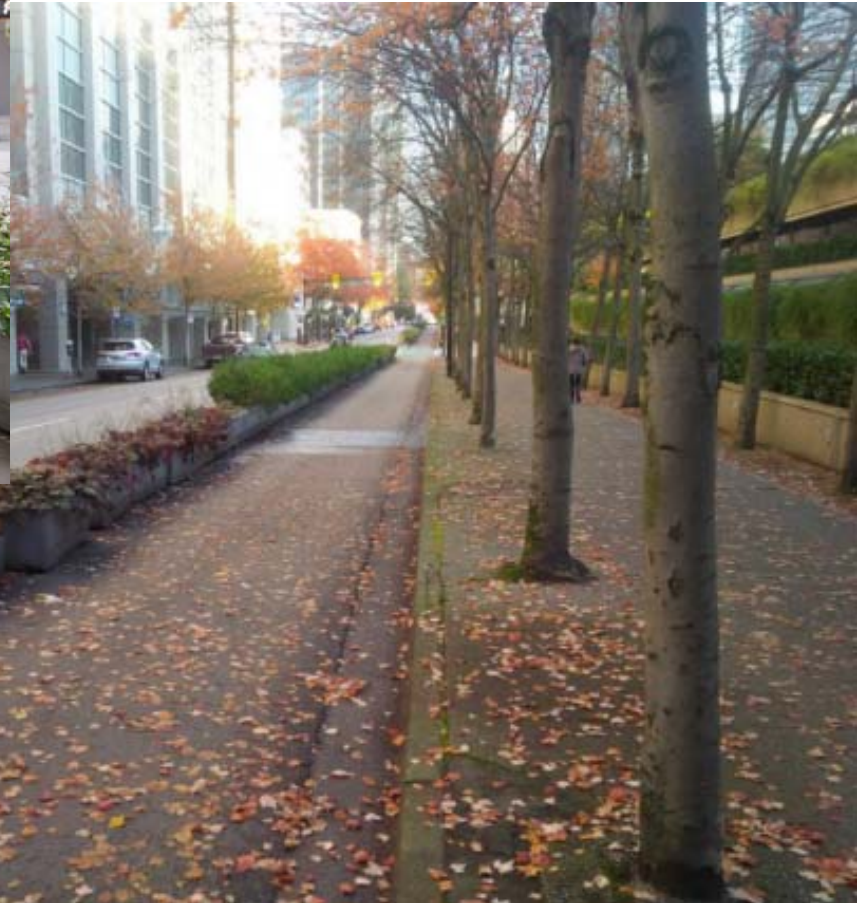
After



Design Details



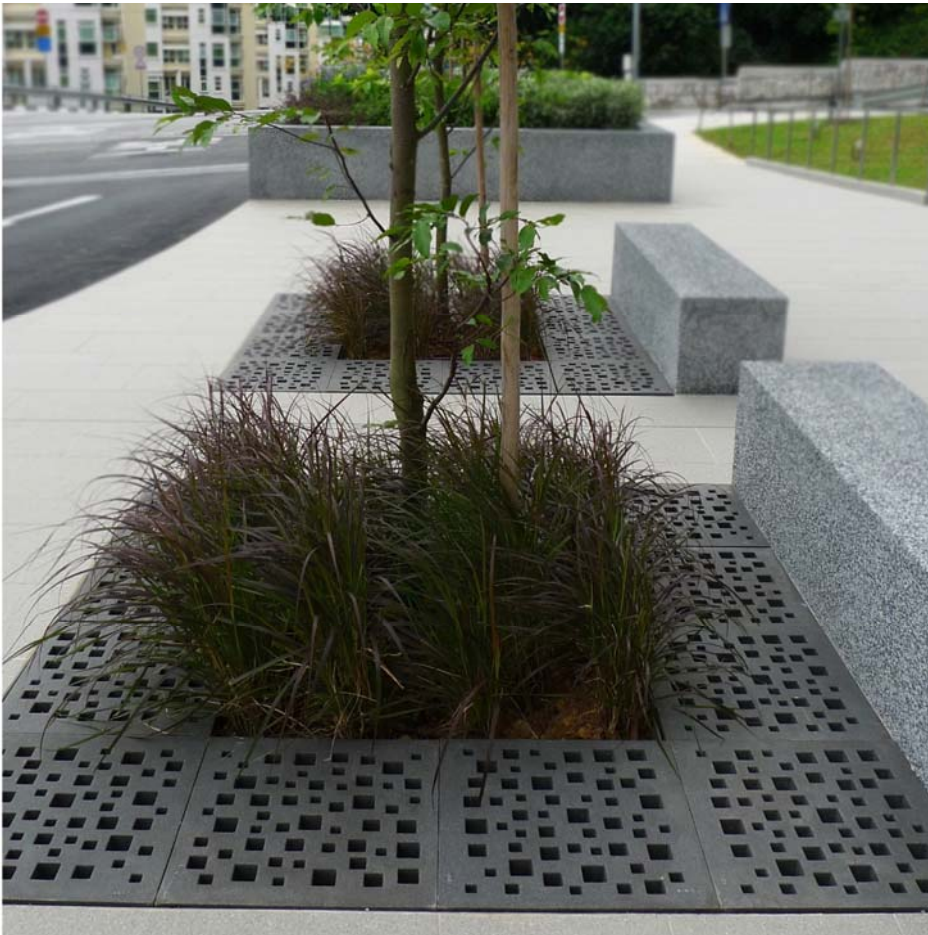
Bikeways



Pedestrians



Stormwater Management

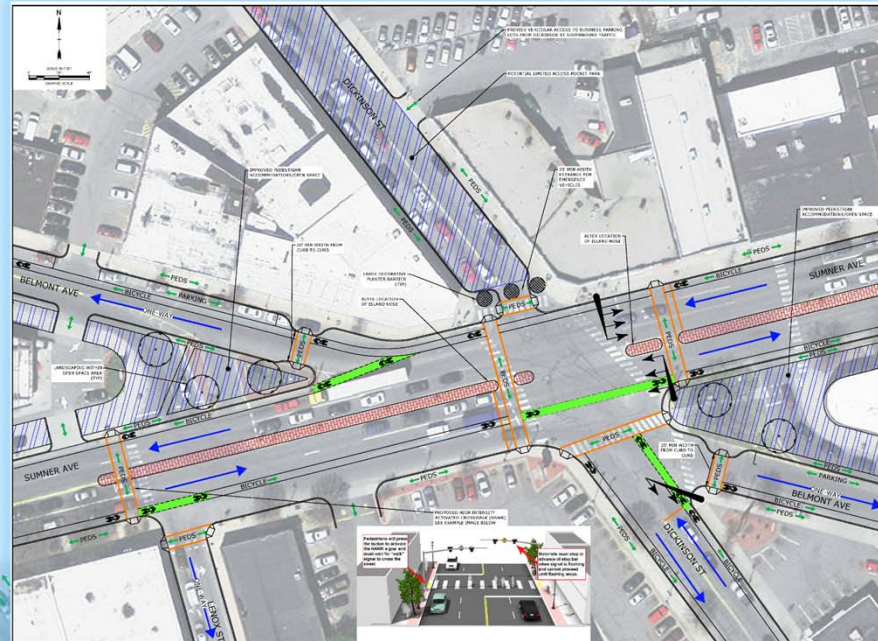


Porous pavement

allows rainwater to drain through the surface rather than run off the edges and erode soil.



" * " to " X "



- Improved Pedestrian & Bicycle Mobility/ Safety
- Simplified Layout & Operations
- No Interruption to Transit
- Enhanced Vehicle Progression
- Enriched Aesthetics
- Economic Growth Opportunities

The "X"



© 2014 Microsoft Corporation Pictometry Bird's Eye © 2012 M

Traffic Counts

Innovative Data, LLC

Location: Sumner Ave Westbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	Tue 05-May-1		Wed 06-May-1		Thu 07-May-1		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	14	142	23	156	21	156	19	151
12:15	20	148	14	156	19	132	18	145
12:30	22	169	12	166	19	163	18	166
12:45	11	149	22	166	16	166	16	160
01:00	4	138	14	164	14	171	11	158
01:15	14	162	12	160	14	128	13	150
01:30	9	156	10	167	10	164	10	162
01:45	12	130	7	180	6	158	8	156
02:00	12	164	12	188	6	161	10	171
02:15	9	166	8	174	5	167	7	169
02:30	12	162	8	152	13	172	11	162
02:45	8	174	7	154	6	164	7	164
03:00	10	176	10	186	8	176	9	179
03:15	11	166	14	196	18	183	14	182
03:30	18	197	15	178	12	204	15	193
03:45	20	203	19	184	18	206	19	198
04:00	18	196	20	190	23	170	20	185
04:15	22	174	27	197	29	200	26	190
04:30	31	203	22	213	38	200	30	205
04:45	32	184	38	193	27	178	32	185
05:00	44	184	48	223	46	202	46	203
05:15	63	199	72	181	72	206	69	195
05:30	112	198	88	183	90	175	97	185
05:45	86	160	114	164	104	202	101	175
06:00	117	150	110	172	104	182	110	168
06:15	164	160	142	164	134	166	147	163
06:30	192	145	182	164	175	176	183	162
06:45	186	142	204	148	202	142	197	144
07:00	220	143	205	127	174	136	200	135
07:15	232	137	226	132	254	117	237	129
07:30	239	108	264	126	257	109	253	114
07:45	230	116	222	149	244	113	232	126
08:00	194	126	230	102	220	132	215	120
08:15	212	130	230	111	236	122	226	121
08:30	232	110	218	112	244	107	231	110
08:45	214	106	201	115	210	99	208	107
09:00	201	84	166	102	170	110	179	99
09:15	196	98	152	99	213	104	187	100
09:30	154	96	166	94	171	102	164	97
09:45	175	74	170	84	172	88	172	82
10:00	160	98	128	88	144	78	144	88
10:15	150	82	146	64	146	76	147	74
10:30	158	68	128	66	168	92	151	75
10:45	148	60	148	57	132	49	143	55
11:00	132	42	102	39	140	50	125	44
11:15	158	40	174	46	150	50	161	45
11:30	146	40	176	26	154	37	159	34
11:45	152	35	164	30	172	31	163	32
Total	4976	6490	4890	6688	5020	6672	4960	6613
Combined Total	11466		11578		11692		11573	
Peak	07:00	03:45	07:30	04:15	07:15	04:30	07:15	04:30
Vol.	921	776	946	826	975	786	937	788
P.H.F.	0.963	0.956	0.896	0.926	0.948	0.954	0.926	0.961
ADT	ADT 11,573		AADT 11,573					

Innovative Data, LLC

Location: Sumner Ave Westbound
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 Client: Tighe & Bond

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Start Time	Tue 05-May-1		Wed 06-May-1		Thu 07-May-1		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	24	196	0	1	6	184	10	127
12:15	20	172	0	1	4	163	8	112
12:30	26	210	0	0	4	208	10	139
12:45	17	216	0	1	2	197	6	138
01:00	8	203	0	0	2	204	3	136
01:15	12	186	0	0	4	166	5	117
01:30	10	196	0	0	4	199	5	132
01:45	14	218	0	0	4	184	6	134
02:00	16	182	0	1	4	198	7	127
02:15	16	218	0	0	2	204	6	141
02:30	22	227	0	0	8	230	10	152
02:45	8	202	0	0	2	216	3	139
03:00	10	217	0	2	5	185	5	135
03:15	13	228	0	1	2	235	5	155
03:30	19	221	0	2	5	238	8	154
03:45	22	256	0	2	6	260	9	173
04:00	21	243	0	0	8	222	10	155
04:15	31	246	0	2	8	274	13	174
04:30	46	252	0	2	12	290	19	181
04:45	38	269	0	1	11	216	16	162
05:00	56	328	0	0	22	75	26	134
05:15	104	408	0	0	22	106	42	171
05:30	162	396	0	0	57	96	73	164
05:45	126	302	0	0	44	8	57	103
06:00	161	298	0	1	53	0	71	100
06:15	248	278	0	0	78	12	109	97
06:30	278	230	0	0	112	30	130	87
06:45	252	176	0	0	140	25	131	67
07:00	310	164	0	2	128	30	146	65
07:15	294	140	0	0	145	22	146	54
07:30	311	43	0	2	177	17	163	21
07:45	256	8	0	0	150	18	135	9
08:00	272	2	0	0	162	16	145	6
08:15	260	1	0	0	154	19	138	7
08:30	260	2	0	0	170	17	143	6
08:45	214	0	0	0	178	20	131	7
09:00	229	0	0	1	182	16	137	6
09:15	210	0	0	0	164	10	125	3
09:30	212	0	0	0	190	16	134	5
09:45	196	0	0	0	176	10	124	3
10:00	198	0	0	0	166	12	121	4
10:15	198	0	0	0	178	4	125	1
10:30	192	0	0	0	165	10	119	3
10:45	162	0	0	0	172	6	111	2
11:00	170	0	0	4	162	2	111	2
11:15	198	0	0	18	182	4	127	7
11:30	186	0	0	13	168	4	118	6
11:45	188	0	0	12	200	2	129	5
Total	6296	7134	0	69	4000	4880	3431	4028
Combined Total	13430		69		8880		7459	
Peak	07:00	05:00		11:00	08:45	03:45	07:00	03:45
Vol.	1171	1434		47	714	1046	590	683
P.H.F.	0.941	0.879		0.653	0.939	0.902	0.905	0.943
ADT	ADT 7,457		AADT 7,457					

Innovative Data, LLC

Location: Sumner Ave Eastbound
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	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	26	117	44	133	36	120	35	123
12:15	37	145	42	142	30	131	36	139
12:30	21	155	22	123	25	148	23	142
12:45	14	144	21	134	21	149	19	142
01:00	10	118	20	145	19	153	16	139
01:15	8	102	23	154	21	142	17	133
01:30	21	126	14	143	18	121	18	130
01:45	11	162	17	138	16	144	15	148
02:00	19	129	17	148	13	127	16	135
02:15	12	141	22	180	17	160	17	160
02:30	13	145	15	165	13	178	14	163
02:45	6	165	6	168	5	134	6	156
03:00	6	140	9	144	9	148	8	144
03:15	10	181	11	172	10	160	10	171
03:30	6	171	10	164	11	170	9	168
03:45	7	181	6	198	6	172	6	184
04:00	12	162	10	171	7	174	10	169
04:15	10	170	5	183	13	175	9	176
04:30	13	180	12	201	15	190	13	190
04:45	11	190	16	191	13	210	13	197
05:00	15	205	15	192	19	179	16	192
05:15	12	172	14	194	17	188	14	185
05:30	25	189	20	213	25	179	23	194
05:45	23	177	19	196	20	160	21	178
06:00	46	167	38	163	43	205	42	178
06:15	45	177	43	164	56	162	48	168
06:30	80	159	71	161	81	171	77	164
06:45	104	150	88	149	89	158	94	152
07:00	123	140	136	152	104	140	121	144
07:15	126	150	134	162	142	157	134	156
07:30	126	140	136	144	138	149	133	144
07:45	128	157	155	154	154	151	146	154
08:00	138	138	140	143	140	135	139	139
08:15	165	174	160	170	142	145	156	163
08:30	145	130	125	121	133	132	134	128
08:45	136	132	152	121	145	127	144	127
09:00	159	109	114	143	125	148	133	133
09:15	109	99	117	99	115	115	114	104
09:30	118	106	120	103	124	117	121	109
09:45	128	92	123	105	115	100	122	99
10:00	95	74	112	78	103	89	103	80
10:15	99	87	112	100	92	80	101	89
10:30	101	69	95	65	97	55	98	63
10:45	123	63	124	44	108	69	118	59
11:00	128	45	110	74	120	44	119	54
11:15	125	60	124	50	112	72	120	61
11:30	129	44	138	40	112	50	126	45
11:45	136	43	142	42	132	46	137	44
Total	3160	6472	3219	6739	3121	6629	3164	6615
Combined Total	9632		9958		9750		9779	
Peak	08:15	04:45	07:30	05:00	07:15	04:30	07:45	04:45
Vol.	605	756	591	795	574	767	575	768
P.H.F.	0.917	0.922	0.923	0.933	0.932	0.913	0.921	0.975
ADT	ADT 9,771		AADT 9,771					

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Sumner Ave Eastbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound																85th	95th
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76			
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
05/05/15	2	6	3	12	40	24	10	1	0	0	0	0	0	0	98	39	43
01:00	0	5	4	4	14	16	5	2	0	0	0	0	0	0	50	39	43
02:00	1	0	2	8	18	16	5	0	0	0	0	0	0	0	50	39	42
03:00	4	4	3	4	8	3	1	2	0	0	0	0	0	0	29	33	36
04:00	2	6	5	7	14	5	4	2	1	0	0	0	0	0	46	39	43
05:00	0	2	6	3	19	26	15	3	1	0	0	0	0	0	75	42	45
06:00	9	23	23	43	67	70	31	8	1	0	0	0	0	0	275	39	43
07:00	39	22	40	73	157	130	32	7	1	2	0	0	0	0	503	38	41
08:00	36	50	71	127	194	87	17	2	0	0	0	0	0	0	584	35	39
09:00	48	55	50	116	158	74	10	3	0	0	0	0	0	0	514	35	39
10:00	32	26	42	69	140	84	22	1	2	0	0	0	0	0	418	37	40
11:00	32	31	43	105	175	97	30	5	0	0	0	0	0	0	518	37	41
12 PM	52	59	69	105	156	86	29	5	0	0	0	0	0	0	561	36	40
13:00	46	29	44	92	171	93	30	3	0	0	0	0	0	0	508	37	41
14:00	44	28	58	111	189	116	29	5	0	0	0	0	0	0	580	37	41
15:00	60	73	90	142	177	92	26	11	2	0	0	0	0	0	673	36	40
16:00	66	60	85	145	210	115	20	0	1	0	0	0	0	0	702	35	39
17:00	69	49	72	160	260	109	19	5	0	0	0	0	0	0	743	35	39
18:00	57	55	54	168	187	102	27	3	0	0	0	0	0	0	653	36	40
19:00	50	56	67	151	134	101	22	3	2	1	0	0	0	0	587	36	40
20:00	55	29	56	169	188	65	10	2	0	0	0	0	0	0	574	34	38
21:00	25	29	30	110	144	52	12	2	0	1	1	0	0	0	406	35	39
22:00	9	27	26	65	98	54	11	2	1	0	0	0	0	0	293	36	40
23:00	7	6	4	16	83	50	21	4	1	0	0	0	0	0	192	39	43
Total	745	730	947	2005	3001	1667	438	81	13	4	1	0	0	0	9632		
Percent	7.7%	7.6%	9.8%	20.8%	31.2%	17.3%	4.5%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	09:00	08:00	08:00	08:00	07:00	07:00	06:00	10:00	07:00					08:00		
Vol.	48	55	71	127	194	130	32	8	2	2					584		
PM Peak	17:00	15:00	15:00	20:00	17:00	14:00	13:00	15:00	15:00	19:00	21:00				17:00		
Vol.	69	73	90	169	260	116	30	11	2	1	1				743		

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Eastbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th Percent	95th Percent	
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total		
05/06/15	4	10	8	13	47	34	10	2	1	0	0	0	0	0	129	38	42
01:00	0	4	2	12	27	20	7	2	0	0	0	0	0	0	74	39	43
02:00	2	2	0	9	18	17	6	4	2	0	0	0	0	0	60	43	48
03:00	1	4	3	4	8	14	1	1	0	0	0	0	0	0	36	38	40
04:00	1	2	1	6	10	13	7	3	0	0	0	0	0	0	43	42	46
05:00	1	4	7	6	14	20	12	2	1	1	0	0	0	0	68	41	44
06:00	14	10	14	28	60	76	33	5	0	0	0	0	0	0	240	40	44
07:00	38	27	33	91	203	132	29	7	1	0	0	0	0	0	561	37	41
08:00	56	40	58	124	182	89	27	1	0	0	0	0	0	0	577	36	40
09:00	33	24	43	101	137	110	23	3	0	0	0	0	0	0	474	37	40
10:00	29	28	45	91	144	89	15	2	0	0	0	0	0	0	443	36	40
11:00	41	39	53	112	164	83	19	2	1	0	0	0	0	0	514	36	39
12 PM	42	40	51	120	163	90	23	2	1	0	0	0	0	0	532	36	40
13:00	48	33	53	102	207	107	22	6	1	1	0	0	0	0	580	36	40
14:00	38	43	90	136	198	111	34	8	1	1	1	0	0	0	661	37	41
15:00	54	35	91	153	218	100	21	4	2	0	0	0	0	0	678	36	40
16:00	62	70	100	151	206	130	22	5	0	0	0	0	0	0	746	36	39
17:00	76	77	80	169	251	111	26	4	1	0	0	0	0	0	795	35	39
18:00	43	45	66	129	195	120	32	7	0	0	0	0	0	0	637	37	41
19:00	51	47	64	151	180	91	22	6	0	0	0	0	0	0	612	36	40
20:00	26	36	45	128	216	85	19	0	0	0	0	0	0	0	555	36	39
21:00	25	26	39	99	175	69	15	2	0	0	0	0	0	0	450	36	39
22:00	14	26	23	30	113	63	14	4	0	0	0	0	0	0	287	37	41
23:00	7	13	9	20	76	58	19	3	1	0	0	0	0	0	206	39	42
Total	706	685	978	1985	3212	1832	458	85	13	3	1	0	0	0	9958		
Percent	7.1%	6.9%	9.8%	19.9%	32.3%	18.4%	4.6%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	06:00	07:00	02:00	05:00					08:00		
Vol.	56	40	58	124	203	132	33	7	2	1					577		
PM Peak	17:00	17:00	16:00	17:00	17:00	16:00	14:00	14:00	15:00	13:00	14:00				17:00		
Vol.	76	77	100	169	251	130	34	8	2	1	1				795		

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Eastbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th Percent	95th Percent	
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	
05/07/15	5	4	8	10	32	35	14	1	3	0	0	0	0	0	112	40	43
01:00	1	4	1	8	29	16	8	6	1	0	0	0	0	0	74	41	47
02:00	3	4	0	9	9	20	3	0	0	0	0	0	0	0	48	38	40
03:00	1	3	1	11	7	11	2	0	0	0	0	0	0	0	36	38	40
04:00	2	1	3	9	12	13	7	0	1	0	0	0	0	0	48	41	44
05:00	4	5	8	5	19	23	15	2	0	0	0	0	0	0	81	41	44
06:00	24	11	28	33	59	72	33	7	2	0	0	0	0	0	269	40	44
07:00	37	31	37	72	158	142	51	9	1	0	0	0	0	0	538	39	43
08:00	53	36	53	107	150	121	32	8	0	0	0	0	0	0	560	37	41
09:00	43	24	42	65	165	98	38	3	1	0	0	0	0	0	479	38	41
10:00	29	28	25	52	131	92	31	10	2	0	0	0	0	0	400	38	43
11:00	37	32	40	69	145	115	31	3	4	0	0	0	0	0	476	38	42
12 PM	49	36	46	117	166	99	30	4	1	0	0	0	0	0	548	37	41
13:00	38	24	46	99	181	126	38	6	2	0	0	0	0	0	560	38	41
14:00	48	27	50	132	179	119	41	3	0	0	0	0	0	0	599	37	41
15:00	63	57	91	127	170	111	26	5	0	0	0	0	0	0	650	36	40
16:00	85	54	68	202	221	84	23	9	3	0	0	0	0	0	749	35	39
17:00	67	56	81	162	195	122	20	3	0	0	0	0	0	0	706	36	39
18:00	56	46	44	155	245	104	41	5	0	0	0	0	0	0	696	36	41
19:00	29	35	39	115	199	138	30	12	0	0	0	0	0	0	597	38	41
20:00	46	46	62	132	166	65	20	2	0	0	0	0	0	0	539	35	39
21:00	30	32	55	125	153	73	11	1	0	0	0	0	0	0	480	35	39
22:00	21	25	20	58	90	65	12	2	0	0	0	0	0	0	293	37	40
23:00	4	13	10	25	54	72	26	7	1	0	0	0	0	0	212	40	44
Total	775	634	858	1899	2935	1936	583	108	22	0	0	0	0	0	9750		
Percent	7.9%	6.5%	8.8%	19.5%	30.1%	19.9%	6.0%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	09:00	07:00	07:00	10:00	11:00						08:00		
Vol.	53	36	53	107	165	142	51	10	4						560		
PM Peak	16:00	15:00	15:00	16:00	18:00	19:00	14:00	19:00	16:00						16:00		
Vol.	85	57	91	202	245	138	41	12	3						749		
Total	2226	2049	2783	5889	9148	5435	1479	274	48	7	2	0	0	0	29340		
Percent	7.6%	7.0%	9.5%	20.1%	31.2%	18.5%	5.0%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 14 MPH
 50th Percentile : 29 MPH
 85th Percentile : 37 MPH
 95th Percentile : 41 MPH

Stats
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 13559
 Percent in Pace : 46.2%
 Number of Vehicles > 40 MPH : 2085
 Percent of Vehicles > 40 MPH : 7.1%
 Mean Speed(Average) : 28 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Sumner Ave Eastbound
 Location: between Belmont & Ormont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	2	71	18	0	4	0	0	2	0	0	0	0	0	1	98
01:00	0	36	12	0	1	0	0	0	0	0	0	0	0	1	50
02:00	0	37	11	1	0	0	0	0	0	0	0	0	0	1	50
03:00	1	20	2	0	2	0	0	0	0	0	0	0	0	4	29
04:00	0	35	5	0	1	1	0	1	1	0	0	0	0	2	46
05:00	1	55	6	1	9	1	0	1	1	0	0	0	0	0	75
06:00	3	173	46	7	26	3	0	3	4	0	0	1	0	9	275
07:00	2	326	94	6	27	0	0	10	0	1	1	0	0	36	503
08:00	8	393	114	9	23	2	1	4	2	3	0	0	0	25	584
09:00	3	342	92	6	26	1	0	6	0	1	0	0	0	37	514
10:00	8	250	101	1	25	0	0	6	1	0	0	0	0	26	418
11:00	4	353	93	1	32	0	0	6	1	0	1	0	0	27	518
12 PM	6	365	112	4	27	1	0	8	0	0	0	0	0	38	561
13:00	9	333	87	2	31	2	0	7	0	0	1	0	0	36	508
14:00	3	387	101	8	32	1	0	11	2	0	0	0	0	35	580
15:00	10	415	139	5	33	3	0	10	1	4	1	1	0	51	673
16:00	6	444	129	6	43	3	0	11	1	2	0	0	0	57	702
17:00	8	506	117	2	19	1	0	17	2	1	1	1	0	68	743
18:00	2	440	125	2	23	2	0	8	0	1	0	0	0	50	653
19:00	8	402	107	0	20	3	0	10	1	0	1	0	0	35	587
20:00	5	396	112	1	11	1	0	12	1	3	0	1	0	31	574
21:00	4	297	70	1	12	1	0	1	0	0	0	0	1	19	406
22:00	1	207	58	1	5	1	0	7	0	0	1	1	0	11	293
23:00	2	134	40	0	7	0	0	3	0	0	0	0	0	6	192
Total	96	6417	1791	64	439	27	1	144	18	16	7	5	1	606	9632
Percent	1.0%	66.6%	18.6%	0.7%	4.6%	0.3%	0.0%	1.5%	0.2%	0.2%	0.1%	0.1%	0.0%	6.3%	
AM Peak	08:00	08:00	08:00	08:00	11:00	06:00	08:00	07:00	06:00	08:00	07:00	06:00		09:00	
Vol.	8	393	114	9	32	3	1	10	4	3	1	1		37	
PM Peak	15:00	17:00	15:00	14:00	16:00	15:00		17:00	14:00	15:00	13:00	15:00	21:00	17:00	
Vol.	10	506	139	8	43	3		17	2	4	1	1	1	68	

Innovative Data, LLC

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Location: Sumner Ave Eastbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	3	94	21	0	6	1	0	0	0	0	0	0	0	4	129
01:00	0	52	18	0	4	0	0	0	0	0	0	0	0	0	74
02:00	0	43	10	0	4	0	0	1	0	0	0	0	0	2	60
03:00	0	26	5	1	2	0	0	0	0	0	0	0	0	2	36
04:00	0	30	7	0	3	1	0	0	1	0	0	0	0	1	43
05:00	0	47	12	1	6	0	0	0	1	0	0	0	0	1	68
06:00	6	133	50	10	20	0	1	6	0	2	1	0	0	11	240
07:00	3	374	98	5	30	2	0	12	2	0	0	2	0	33	561
08:00	6	369	117	7	24	0	0	16	1	0	1	0	0	36	577
09:00	7	269	107	4	41	2	0	11	0	0	0	0	0	33	474
10:00	6	262	103	7	22	5	0	11	1	1	0	0	1	24	443
11:00	5	333	96	10	33	1	0	7	0	0	0	0	0	29	514
12 PM	1	341	120	1	25	0	0	7	1	2	1	0	0	33	532
13:00	7	373	114	1	18	3	0	11	2	2	0	0	0	49	580
14:00	9	429	134	5	29	1	0	15	3	2	0	0	0	34	661
15:00	4	431	146	6	20	3	0	14	1	2	1	1	1	48	678
16:00	9	494	132	2	32	4	0	14	1	1	1	2	0	54	746
17:00	14	514	154	3	19	3	0	19	1	0	0	1	0	67	795
18:00	4	411	140	3	24	1	0	11	0	2	0	0	0	41	637
19:00	5	427	102	1	19	1	0	12	0	2	0	0	0	43	612
20:00	3	380	118	2	13	1	0	12	1	0	0	0	0	25	555
21:00	2	323	80	1	15	0	0	2	1	0	0	0	0	26	450
22:00	3	198	57	0	8	0	0	5	1	0	0	0	0	15	287
23:00	3	155	32	0	5	0	0	3	0	0	0	0	0	8	206
Total	100	6508	1973	70	422	29	1	189	18	16	5	6	2	619	9958
Percent	1.0%	65.4%	19.8%	0.7%	4.2%	0.3%	0.0%	1.9%	0.2%	0.2%	0.1%	0.1%	0.0%	6.2%	
AM Peak	09:00	07:00	08:00	06:00	09:00	10:00	06:00	08:00	07:00	06:00	06:00	07:00	10:00	08:00	
Vol.	7	374	117	10	41	5	1	16	2	2	1	2	1	36	
PM Peak	17:00	17:00	17:00	15:00	16:00	16:00		17:00	14:00	12:00	12:00	16:00	15:00	17:00	
Vol.	14	514	154	6	32	4		19	3	2	1	2	1	67	

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Location: Sumner Ave Eastbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	2	87	14	0	4	0	0	1	0	0	0	0	0	4	112
01:00	1	53	16	1	2	0	0	0	0	0	0	0	0	1	74
02:00	0	35	9	0	0	0	0	1	0	0	0	0	0	3	48
03:00	0	25	8	0	0	1	0	0	1	0	0	0	0	1	36
04:00	0	31	10	0	5	0	0	0	1	0	0	0	0	1	48
05:00	0	51	14	2	8	0	0	3	1	0	0	0	0	2	81
06:00	4	155	55	10	19	3	0	5	0	1	0	0	0	17	269
07:00	2	353	94	7	25	4	0	15	0	1	0	0	0	37	538
08:00	10	331	117	4	34	5	0	12	1	0	0	0	0	46	560
09:00	6	280	123	1	24	0	0	8	0	0	0	0	0	37	479
10:00	4	228	111	3	26	0	0	6	2	0	0	1	0	19	400
11:00	2	307	92	2	23	2	0	12	2	0	0	0	0	34	476
12 PM	7	337	109	4	37	0	0	9	1	2	0	1	1	40	548
13:00	10	320	141	2	37	0	0	8	1	2	1	0	0	38	560
14:00	8	370	142	1	21	1	0	16	0	1	0	0	0	39	599
15:00	4	401	135	2	26	2	0	18	3	1	0	0	1	57	650
16:00	12	456	148	4	28	4	0	13	0	0	0	0	0	84	749
17:00	10	439	158	2	23	3	0	9	1	1	0	0	2	58	706
18:00	9	459	132	1	27	0	0	16	0	2	0	0	0	50	696
19:00	6	398	129	1	15	0	0	16	0	0	2	0	1	29	597
20:00	6	360	105	0	14	1	0	11	0	1	1	0	0	40	539
21:00	4	338	97	1	8	0	0	4	0	0	0	0	0	28	480
22:00	3	200	65	0	6	0	0	2	0	0	0	0	0	17	293
23:00	0	153	47	0	3	0	0	3	0	0	0	0	0	6	212
Total	110	6167	2071	48	415	26	0	188	14	12	4	2	5	688	9750
Percent	1.1%	63.3%	21.2%	0.5%	4.3%	0.3%	0.0%	1.9%	0.1%	0.1%	0.0%	0.0%	0.1%	7.1%	
AM Peak	08:00	07:00	09:00	06:00	08:00	08:00		07:00	10:00	06:00		10:00		08:00	
Vol.	10	353	123	10	34	5		15	2	1		1		46	
PM Peak	16:00	18:00	17:00	12:00	12:00	16:00		15:00	15:00	12:00	19:00	12:00	17:00	16:00	
Vol.	12	459	158	4	37	4		18	3	2	2	1	2	84	
Grand Total	306	19092	5835	182	1276	82	2	521	50	44	16	13	8	1913	29340
Percent	1.0%	65.1%	19.9%	0.6%	4.3%	0.3%	0.0%	1.8%	0.2%	0.1%	0.1%	0.0%	0.0%	6.5%	

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedatalc.com or 1.413.668.5094

Start Time	05-May-1 Tue	Eastbound		Westbound		Combined		06-May Wed	Eastbound		Westbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		10	64	5	70	15	134		16	66	9	56	25	122
12:15		15	58	4	61	19	119		12	75	10	72	22	147
12:30		15	60	16	75	31	135		9	51	9	69	18	120
12:45		7	69	8	65	15	134		6	64	2	58	8	122
01:00		9	61	4	61	13	122		7	51	12	58	19	109
01:15		6	58	7	77	13	135		8	67	8	75	16	142
01:30		9	71	6	68	15	139		6	68	3	70	9	138
01:45		4	72	4	60	8	132		10	74	4	61	14	135
02:00		7	69	2	83	9	152		11	59	6	72	17	131
02:15		4	71	1	61	5	132		6	65	1	71	7	136
02:30		9	61	6	71	15	132		8	65	4	68	12	133
02:45		7	72	4	59	11	131		2	85	4	61	6	146
03:00		5	83	5	67	10	150		2	83	1	62	3	145
03:15		3	89	3	69	6	158		1	72	3	59	4	131
03:30		2	76	1	55	3	131		4	83	3	78	7	161
03:45		2	82	0	57	2	139		0	85	3	71	3	156
04:00		6	73	3	76	9	149		1	81	2	68	3	149
04:15		9	95	5	69	14	164		12	101	7	60	19	161
04:30		5	88	4	55	9	143		6	88	2	57	8	145
04:45		5	79	9	53	14	132		6	89	9	65	15	154
05:00		7	89	16	55	23	144		10	99	15	53	25	152
05:15		11	90	16	65	27	155		7	90	20	61	27	151
05:30		14	92	30	52	44	144		14	92	15	52	29	144
05:45		18	76	13	43	31	119		22	82	25	55	47	137
06:00		21	70	33	81	54	151		14	77	26	55	40	132
06:15		24	78	38	47	62	125		20	63	34	59	54	122
06:30		36	48	35	51	71	99		35	82	54	53	89	135
06:45		27	67	49	55	76	122		30	50	53	55	83	105
07:00		32	64	74	40	106	104		46	63	62	61	108	124
07:15		38	50	74	37	112	87		38	63	79	53	117	116
07:30		50	58	107	55	157	113		51	60	95	51	146	111
07:45		67	52	107	53	174	105		49	61	106	56	155	117
08:00		41	67	74	44	115	111		39	48	63	61	102	109
08:15		64	70	67	46	131	116		48	60	97	39	145	99
08:30		56	46	93	55	149	101		52	43	93	49	145	92
08:45		65	46	75	46	140	92		59	49	78	47	137	96
09:00		55	53	85	23	140	76		49	43	84	36	133	79
09:15		51	42	73	37	124	79		53	25	70	24	123	49
09:30		62	48	59	34	121	82		50	24	64	23	114	47
09:45		60	44	68	32	128	76		54	35	74	26	128	61
10:00		55	38	64	26	119	64		48	27	62	37	110	64
10:15		46	28	56	27	102	55		48	27	68	25	116	52
10:30		50	26	63	22	113	48		55	34	53	16	108	50
10:45		66	20	64	14	130	34		58	28	62	18	120	46
11:00		59	25	57	21	116	46		55	20	59	16	114	36
11:15		60	17	76	15	136	32		60	13	55	14	115	27
11:30		69	15	75	19	144	34		55	22	72	5	127	27
11:45		52	14	78	19	130	33		69	9	71	14	140	23
Total		1395	2884	1816	2426	3211	5310		1321	2861	1811	2425	3132	5286
Day Total		4279		4242		8521			4182		4236		8418	
% Total		16.4%	33.8%	21.3%	28.5%				15.7%	34.0%	21.5%	28.8%		
Peak		10:45	04:15	07:00	01:15	07:30	03:45		11:00	04:15	07:30	01:15	08:15	03:30
Vol.		254	351	362	288	577	595		239	377	361	278	560	627
P.H.F.		0.920	0.924	0.846	0.867	0.829	0.907		0.866	0.933	0.851	0.927	0.903	0.974

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	07-May-1 Thu	Eastbound		Westbound		Combined		08-May Fri	Eastbound		Westbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		17	75	7	57	24	132		0	*	0	*	0	*
12:15		13	54	14	59	27	113		*	*	*	*	*	*
12:30		6	69	4	71	10	140		*	*	*	*	*	*
12:45		7	61	5	75	12	136		*	*	*	*	*	*
01:00		6	66	6	64	12	130		*	*	*	*	*	*
01:15		8	61	5	49	13	110		*	*	*	*	*	*
01:30		5	64	4	70	9	134		*	*	*	*	*	*
01:45		8	62	1	57	9	119		*	*	*	*	*	*
02:00		6	66	6	58	12	124		*	*	*	*	*	*
02:15		7	65	5	66	12	131		*	*	*	*	*	*
02:30		9	65	6	69	15	134		*	*	*	*	*	*
02:45		4	89	7	19	11	108		*	*	*	*	*	*
03:00		7	109	4	0	11	109		*	*	*	*	*	*
03:15		2	84	6	60	8	144		*	*	*	*	*	*
03:30		2	92	1	62	3	154		*	*	*	*	*	*
03:45		4	79	5	70	9	149		*	*	*	*	*	*
04:00		7	75	2	62	9	137		*	*	*	*	*	*
04:15		5	84	4	67	9	151		*	*	*	*	*	*
04:30		9	92	3	67	12	159		*	*	*	*	*	*
04:45		8	95	3	62	11	157		*	*	*	*	*	*
05:00		3	89	14	52	17	141		*	*	*	*	*	*
05:15		11	89	13	80	24	169		*	*	*	*	*	*
05:30		16	94	21	39	37	133		*	*	*	*	*	*
05:45		23	86	19	72	42	158		*	*	*	*	*	*
06:00		22	75	30	54	52	129		*	*	*	*	*	*
06:15		26	64	33	55	59	119		*	*	*	*	*	*
06:30		31	72	60	67	91	139		*	*	*	*	*	*
06:45		35	59	56	47	91	106		*	*	*	*	*	*
07:00		28	68	69	62	97	130		*	*	*	*	*	*
07:15		39	72	85	50	124	122		*	*	*	*	*	*
07:30		49	53	101	39	150	92		*	*	*	*	*	*
07:45		46	62	117	45	163	107		*	*	*	*	*	*
08:00		44	58	78	60	122	118		*	*	*	*	*	*
08:15		64	54	80	46	144	100		*	*	*	*	*	*
08:30		55	84	97	38	152	122		*	*	*	*	*	*
08:45		52	56	88	39	140	95		*	*	*	*	*	*
09:00		51	61	54	31	105	92		*	*	*	*	*	*
09:15		58	49	74	26	132	75		*	*	*	*	*	*
09:30		64	45	73	38	137	83		*	*	*	*	*	*
09:45		62	41	68	34	130	75		*	*	*	*	*	*
10:00		59	44	76	37	135	81		*	*	*	*	*	*
10:15		52	36	61	34	113	70		*	*	*	*	*	*
10:30		48	31	55	27	103	58		*	*	*	*	*	*
10:45		52	25	61	23	113	48		*	*	*	*	*	*
11:00		73	21	58	23	131	44		*	*	*	*	*	*
11:15		72	22	76	19	148	41		*	*	*	*	*	*
11:30		68	20	68	13	136	33		*	*	*	*	*	*
11:45		63	17	69	10	132	27		*	*	*	*	*	*
Total		1406	3054	1852	2324	3258	5378		0	0	0	0	0	0
Day Total		4460		4176		8636			0	0	0	0	0	0
% Total		16.3%	35.4%	21.4%	26.9%				0.0%	0.0%	0.0%	0.0%		
Peak		11:00	02:45	07:15	00:15	07:45	04:30							
Vol.		276	374	381	269	581	626							
P.H.F.		0.945	0.858	0.814	0.897	0.891	0.926							

ADT ADT 8,520 AADT 8,520

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Eastbound																85th	95th
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76			
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
05/05/15	5	5	15	12	9	1	0	0	0	0	0	0	0	0	47	30	33
01:00	1	1	5	15	6	0	0	0	0	0	0	0	0	0	28	31	33
02:00	0	4	5	11	7	0	0	0	0	0	0	0	0	0	27	31	34
03:00	0	1	3	6	2	0	0	0	0	0	0	0	0	0	12	30	31
04:00	1	4	8	5	3	3	1	0	0	0	0	0	0	0	25	34	36
05:00	4	9	9	22	6	0	0	0	0	0	0	0	0	0	50	29	32
06:00	10	12	29	33	20	4	0	0	0	0	0	0	0	0	108	31	34
07:00	25	25	63	52	20	1	0	1	0	0	0	0	0	0	187	28	32
08:00	35	48	77	56	8	1	1	0	0	0	0	0	0	0	226	26	29
09:00	28	39	83	62	12	4	0	0	0	0	0	0	0	0	228	27	31
10:00	17	38	82	63	14	3	0	0	0	0	0	0	0	0	217	28	31
11:00	31	34	92	69	13	1	0	0	0	0	0	0	0	0	240	27	30
12 PM	58	44	71	49	24	5	0	0	0	0	0	0	0	0	251	28	32
13:00	27	47	91	66	29	2	0	0	0	0	0	0	0	0	262	28	32
14:00	37	33	108	75	15	5	0	0	0	0	0	0	0	0	273	28	31
15:00	141	94	58	31	6	0	0	0	0	0	0	0	0	0	330	21	26
16:00	167	55	70	40	3	0	0	0	0	0	0	0	0	0	335	22	26
17:00	178	86	48	34	1	0	0	0	0	0	0	0	0	0	347	20	26
18:00	65	65	72	51	9	1	0	0	0	0	0	0	0	0	263	25	29
19:00	25	45	77	62	15	0	0	0	0	0	0	0	0	0	224	28	31
20:00	37	47	107	35	2	1	0	0	0	0	0	0	0	0	229	25	28
21:00	36	19	65	53	13	1	0	0	0	0	0	0	0	0	187	28	31
22:00	6	7	34	40	21	4	0	0	0	0	0	0	0	0	112	31	34
23:00	2	3	12	34	15	3	2	0	0	0	0	0	0	0	71	32	35
Total	936	765	1284	976	273	40	4	1	0	0	0	0	0	0	4279		
Percent	21.9%	17.9%	30.0%	22.8%	6.4%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	11:00	11:00	06:00	06:00	04:00	07:00							11:00		
Vol.	35	48	92	69	20	4	1	1							240		
PM Peak	17:00	15:00	14:00	14:00	13:00	12:00	23:00								17:00		
Vol.	178	94	108	75	29	5	2								347		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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Eastbound																85th	95th	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Total	Percent	Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999				
05/06/15	2	4	11	17	5	4	0	0	0	0	0	0	0	0	0	43	32	36
01:00	0	5	5	13	8	0	0	0	0	0	0	0	0	0	0	31	31	34
02:00	0	1	7	9	7	3	0	0	0	0	0	0	0	0	0	27	34	36
03:00	0	1	4	2	0	0	0	0	0	0	0	0	0	0	0	7	25	25
04:00	3	3	6	7	5	0	1	0	0	0	0	0	0	0	0	25	30	33
05:00	4	6	14	14	13	2	0	0	0	0	0	0	0	0	0	53	31	34
06:00	10	6	20	37	20	6	0	0	0	0	0	0	0	0	0	99	32	36
07:00	24	20	47	63	29	0	1	0	0	0	0	0	0	0	0	184	30	33
08:00	15	24	43	79	34	3	0	0	0	0	0	0	0	0	0	198	30	34
09:00	13	30	72	70	18	3	0	0	0	0	0	0	0	0	0	206	29	32
10:00	27	35	87	46	13	1	0	0	0	0	0	0	0	0	0	209	27	30
11:00	33	55	82	59	9	1	0	0	0	0	0	0	0	0	0	239	27	30
12 PM	41	60	96	50	9	0	0	0	0	0	0	0	0	0	0	256	26	29
13:00	43	68	96	42	9	2	0	0	0	0	0	0	0	0	0	260	25	29
14:00	40	57	86	77	12	2	0	0	0	0	0	0	0	0	0	274	27	30
15:00	122	86	70	41	4	0	0	0	0	0	0	0	0	0	0	323	23	27
16:00	259	87	11	1	1	0	0	0	0	0	0	0	0	0	0	359	15	19
17:00	232	77	28	22	4	0	0	0	0	0	0	0	0	0	0	363	17	23
18:00	67	57	76	66	6	0	0	0	0	0	0	0	0	0	0	272	26	29
19:00	24	35	103	68	15	2	0	0	0	0	0	0	0	0	0	247	27	31
20:00	14	31	81	60	13	1	0	0	0	0	0	0	0	0	0	200	28	31
21:00	8	13	50	44	10	1	0	1	0	0	0	0	0	0	0	127	29	31
22:00	7	7	35	41	23	3	0	0	0	0	0	0	0	0	0	116	31	34
23:00	2	2	17	31	10	2	0	0	0	0	0	0	0	0	0	64	31	34
Total	990	770	1147	959	277	36	2	1	0	0	0	0	0	0	0	4182		
Percent	23.7%	18.4%	27.4%	22.9%	6.6%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	10:00	08:00	08:00	06:00	04:00									11:00		
Vol.	33	55	87	79	34	6	1									239		
PM Peak	16:00	16:00	19:00	14:00	22:00	22:00	21:00									17:00		
Vol.	259	87	103	77	23	3	1									363		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Eastbound																85th	95th	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Percent	Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999				
05/07/15	1	5	10	19	5	2	1	0	0	0	0	0	0	0	0	43	30	34
01:00	0	2	6	12	7	0	0	0	0	0	0	0	0	0	0	27	32	34
02:00	1	1	7	12	4	1	0	0	0	0	0	0	0	0	0	26	31	33
03:00	1	2	2	7	3	0	0	0	0	0	0	0	0	0	0	15	31	32
04:00	2	3	4	12	8	0	0	0	0	0	0	0	0	0	0	29	31	34
05:00	3	10	12	15	7	6	0	0	0	0	0	0	0	0	0	53	32	37
06:00	3	12	29	42	26	2	0	0	0	0	0	0	0	0	0	114	31	34
07:00	18	20	40	51	25	8	0	0	0	0	0	0	0	0	0	162	31	35
08:00	22	31	73	62	24	3	0	0	0	0	0	0	0	0	0	215	29	32
09:00	27	56	78	59	13	0	2	0	0	0	0	0	0	0	0	235	27	30
10:00	30	40	63	67	11	0	0	0	0	0	0	0	0	0	0	211	27	30
11:00	46	49	86	74	18	3	0	0	0	0	0	0	0	0	0	276	27	31
12 PM	41	63	77	58	18	2	0	0	0	0	0	0	0	0	0	259	27	31
13:00	25	30	103	83	9	3	0	0	0	0	0	0	0	0	0	253	28	30
14:00	118	40	77	46	3	1	0	0	0	0	0	0	0	0	0	285	24	27
15:00	262	43	33	23	3	0	0	0	0	0	0	0	0	0	0	364	16	24
16:00	172	76	71	24	3	0	0	0	0	0	0	0	0	0	0	346	21	25
17:00	225	55	58	20	0	0	0	0	0	0	0	0	0	0	0	358	19	24
18:00	72	64	81	42	10	1	0	0	0	0	0	0	0	0	0	270	25	29
19:00	33	43	99	58	18	3	1	0	0	0	0	0	0	0	0	255	27	31
20:00	43	29	97	75	8	0	0	0	0	0	0	0	0	0	0	252	27	30
21:00	22	40	74	52	7	1	0	0	0	0	0	0	0	0	0	196	27	30
22:00	5	22	40	49	17	3	0	0	0	0	0	0	0	0	0	136	30	33
23:00	3	9	21	24	18	3	1	1	0	0	0	0	0	0	0	80	32	35
Total	1175	745	1241	986	265	42	5	1	0	0	0	0	0	0	0	4460		
Percent	26.3%	16.7%	27.8%	22.1%	5.9%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	11:00	11:00	06:00	07:00	09:00									11:00		
Vol.	46	56	86	74	26	8	2									276		
PM Peak	15:00	16:00	13:00	13:00	12:00	13:00	19:00	23:00								15:00		
Vol.	262	76	103	83	18	3	1	1								364		
Total	3101	2280	3672	2921	815	118	11	3	0	0	0	0	0	0	0	12921		
Percent	24.0%	17.6%	28.4%	22.6%	6.3%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 7 MPH
 50th Percentile : 18 MPH
 85th Percentile : 27 MPH
 95th Percentile : 31 MPH

Stats
 10 MPH Pace Speed : 19-28 MPH
 Number in Pace : 4950
 Percent in Pace : 38.3%
 Number of Vehicles > 40 MPH : 21
 Percent of Vehicles > 40 MPH : 0.2%
 Mean Speed(Average) : 18 MPH

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Westbound																85th	95th
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76			
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
05/05/15	4	1	9	7	9	2	1	0	0	0	0	0	0	0	33	32	35
01:00	1	2	2	7	4	1	3	1	0	0	0	0	0	0	21	34	42
02:00	2	2	2	4	2	1	0	0	0	0	0	0	0	0	13	29	29
03:00	1	0	1	1	1	3	2	0	0	0	0	0	0	0	9	38	38
04:00	0	1	1	9	5	4	0	1	0	0	0	0	0	0	21	36	38
05:00	2	2	8	16	27	17	1	2	0	0	0	0	0	0	75	36	39
06:00	3	5	18	48	53	23	4	1	0	0	0	0	0	0	155	36	39
07:00	28	18	51	127	108	25	5	0	0	0	0	0	0	0	362	33	37
08:00	14	12	74	120	75	13	1	0	0	0	0	0	0	0	309	32	35
09:00	21	19	52	113	66	13	1	0	0	0	0	0	0	0	285	32	35
10:00	14	12	47	100	58	16	0	0	0	0	0	0	0	0	247	32	36
11:00	18	17	66	93	80	12	0	0	0	0	0	0	0	0	286	32	35
12 PM	37	13	43	95	72	8	2	1	0	0	0	0	0	0	271	32	35
13:00	20	5	43	92	91	13	2	0	0	0	0	0	0	0	266	33	35
14:00	10	16	45	110	74	19	0	0	0	0	0	0	0	0	274	33	36
15:00	24	17	52	95	52	7	1	0	0	0	0	0	0	0	248	31	34
16:00	20	32	50	80	61	7	2	1	0	0	0	0	0	0	253	32	35
17:00	48	26	32	59	42	6	2	0	0	0	0	0	0	0	215	31	34
18:00	27	19	49	86	48	5	0	0	0	0	0	0	0	0	234	31	34
19:00	17	18	45	76	22	6	0	1	0	0	0	0	0	0	185	30	34
20:00	6	14	42	83	40	4	2	0	0	0	0	0	0	0	191	31	34
21:00	11	4	26	50	22	8	2	0	1	2	0	0	0	0	126	32	36
22:00	1	4	15	36	27	5	1	0	0	0	0	0	0	0	89	33	36
23:00	6	3	5	26	26	6	1	1	0	0	0	0	0	0	74	34	37
Total	335	262	778	1533	1065	224	33	9	1	2	0	0	0	0	4242		
Percent	7.9%	6.2%	18.3%	36.1%	25.1%	5.3%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	08:00	07:00	07:00	07:00	07:00	05:00							07:00		
Vol.	28	19	74	127	108	25	5	2							362		
PM Peak	17:00	16:00	15:00	14:00	13:00	14:00	12:00	12:00	21:00	21:00					14:00		
Vol.	48	32	52	110	91	19	2	1	1	2					274		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Westbound																	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th	95th	
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	
05/06/15	0	2	4	8	12	2	2	0	0	0	0	0	0	0	30	34	35
01:00	0	4	3	11	6	1	2	0	0	0	0	0	0	0	27	32	34
02:00	0	2	1	5	4	2	1	0	0	0	0	0	0	0	15	34	35
03:00	0	1	0	3	4	2	0	0	0	0	0	0	0	0	10	34	35
04:00	0	3	2	7	1	6	0	1	0	0	0	0	0	0	20	37	39
05:00	1	4	11	13	29	13	3	1	0	0	0	0	0	0	75	37	40
06:00	3	4	13	47	56	38	4	2	0	0	0	0	0	0	167	37	40
07:00	13	17	21	125	124	34	7	1	0	0	0	0	0	0	342	34	38
08:00	11	14	62	143	86	14	1	0	0	0	0	0	0	0	331	32	35
09:00	8	19	62	128	67	7	1	0	0	0	0	0	0	0	292	32	34
10:00	9	17	54	104	50	10	1	0	0	0	0	0	0	0	245	32	35
11:00	19	17	76	98	36	10	1	0	0	0	0	0	0	0	257	31	35
12 PM	23	27	62	89	39	15	0	0	0	0	0	0	0	0	255	31	36
13:00	22	23	71	98	39	11	0	0	0	0	0	0	0	0	264	31	34
14:00	15	30	57	85	67	17	1	0	0	0	0	0	0	0	272	33	36
15:00	32	33	65	85	46	8	1	0	0	0	0	0	0	0	270	30	34
16:00	49	19	78	69	30	5	0	0	0	0	0	0	0	0	250	29	33
17:00	43	33	62	54	21	8	0	0	0	0	0	0	0	0	221	29	33
18:00	18	20	55	75	37	15	2	0	0	0	0	0	0	0	222	32	36
19:00	19	25	44	86	35	10	2	0	0	0	0	0	0	0	221	31	35
20:00	11	10	39	96	35	5	0	0	0	0	0	0	0	0	196	31	34
21:00	3	4	13	47	33	8	1	0	0	0	0	0	0	0	109	33	36
22:00	4	5	18	31	28	9	1	0	0	0	0	0	0	0	96	33	37
23:00	0	1	4	18	18	4	3	1	0	0	0	0	0	0	49	36	41
Total	303	334	877	1525	903	254	34	6	0	0	0	0	0	0	4236		
Percent	7.2%	7.9%	20.7%	36.0%	21.3%	6.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	11:00	08:00	07:00	06:00	07:00	06:00							07:00		
Vol.	19	19	76	143	124	38	7	2							342		
PM Peak	16:00	15:00	16:00	13:00	14:00	14:00	23:00	23:00							14:00		
Vol.	49	33	78	98	67	17	3	1							272		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Westbound																		
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/07/15	0	1	3	9	12	5	0	0	0	0	0	0	0	0	0	30	35	38
01:00	1	0	4	4	6	1	0	0	0	0	0	0	0	0	0	16	33	35
02:00	0	0	7	8	7	1	1	0	0	0	0	0	0	0	0	24	32	34
03:00	0	0	2	6	2	5	1	0	0	0	0	0	0	0	0	16	38	40
04:00	0	1	1	1	5	3	1	0	0	0	0	0	0	0	0	12	36	37
05:00	2	3	5	16	24	11	4	2	0	0	0	0	0	0	0	67	38	42
06:00	2	7	16	46	67	31	8	1	1	0	0	0	0	0	0	179	36	40
07:00	17	5	28	143	132	44	3	0	0	0	0	0	0	0	0	372	34	38
08:00	16	16	36	148	105	20	2	0	0	0	0	0	0	0	0	343	33	36
09:00	20	26	60	99	54	10	0	0	0	0	0	0	0	0	0	269	31	34
10:00	8	17	48	102	64	12	2	0	0	0	0	0	0	0	0	253	32	35
11:00	33	25	68	105	31	9	0	0	0	0	0	0	0	0	0	271	30	34
12 PM	26	10	59	102	57	8	0	0	0	0	0	0	0	0	0	262	31	34
13:00	13	17	44	89	62	15	0	0	0	0	0	0	0	0	0	240	33	36
14:00	23	17	41	77	44	10	0	0	0	0	0	0	0	0	0	212	32	35
15:00	22	22	41	63	39	4	1	0	0	0	0	0	0	0	0	192	31	34
16:00	41	28	59	86	39	5	0	0	0	0	0	0	0	0	0	258	30	33
17:00	48	22	50	70	43	10	0	0	0	0	0	0	0	0	0	243	31	34
18:00	22	25	51	78	36	10	1	0	0	0	0	0	0	0	0	223	31	35
19:00	15	13	35	76	51	6	0	0	0	0	0	0	0	0	0	196	32	35
20:00	16	13	56	64	30	3	1	0	0	0	0	0	0	0	0	183	30	33
21:00	7	6	32	44	27	11	1	0	0	0	1	0	0	0	0	129	33	37
22:00	7	4	10	37	52	10	1	0	0	0	0	0	0	0	0	121	34	37
23:00	1	5	11	17	16	13	2	0	0	0	0	0	0	0	0	65	36	39
Total	340	283	767	1490	1005	257	29	3	1	0	1	0	0	0	0	4176		
Percent	8.1%	6.8%	18.4%	35.7%	24.1%	6.2%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	11:00	08:00	07:00	07:00	06:00	05:00	06:00									07:00
Vol.	33	26	68	148	132	44	8	2	1									372
PM Peak	17:00	16:00	12:00	12:00	13:00	13:00	23:00				21:00							12:00
Vol.	48	28	59	102	62	15	2				1							262
Total	978	879	2422	4548	2973	735	96	18	2	2	1	0	0	0	0	12654		
Percent	7.7%	6.9%	19.1%	35.9%	23.5%	5.8%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 14 MPH
 50th Percentile : 26 MPH
 85th Percentile : 32 MPH
 95th Percentile : 36 MPH

Stats
 10 MPH Pace Speed : 24-33 MPH
 Number in Pace : 6658
 Percent in Pace : 52.6%
 Number of Vehicles > 40 MPH : 178
 Percent of Vehicles > 40 MPH : 1.4%
 Mean Speed(Average) : 25 MPH

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/05/15	9	6	24	19	18	3	1	0	0	0	0	0	0	0	0	80	32	35
01:00	2	3	7	22	10	1	3	1	0	0	0	0	0	0	0	49	32	35
02:00	2	6	7	15	9	1	0	0	0	0	0	0	0	0	0	40	31	34
03:00	1	1	4	7	3	3	2	0	0	0	0	0	0	0	0	21	36	38
04:00	1	5	9	14	8	7	1	1	0	0	0	0	0	0	0	46	34	38
05:00	6	11	17	38	33	17	1	2	0	0	0	0	0	0	0	125	34	38
06:00	13	17	47	81	73	27	4	1	0	0	0	0	0	0	0	263	34	38
07:00	53	43	114	179	128	26	5	1	0	0	0	0	0	0	0	549	32	35
08:00	49	60	151	176	83	14	2	0	0	0	0	0	0	0	0	535	30	34
09:00	49	58	135	175	78	17	1	0	0	0	0	0	0	0	0	513	30	34
10:00	31	50	129	163	72	19	0	0	0	0	0	0	0	0	0	464	31	34
11:00	49	51	158	162	93	13	0	0	0	0	0	0	0	0	0	526	31	34
12 PM	95	57	114	144	96	13	2	1	0	0	0	0	0	0	0	522	30	34
13:00	47	52	134	158	120	15	2	0	0	0	0	0	0	0	0	528	31	34
14:00	47	49	153	185	89	24	0	0	0	0	0	0	0	0	0	547	31	35
15:00	165	111	110	126	58	7	1	0	0	0	0	0	0	0	0	578	28	32
16:00	187	87	120	120	64	7	2	1	0	0	0	0	0	0	0	588	28	32
17:00	226	112	80	93	43	6	2	0	0	0	0	0	0	0	0	562	26	31
18:00	92	84	121	137	57	6	0	0	0	0	0	0	0	0	0	497	29	32
19:00	42	63	122	138	37	6	0	1	0	0	0	0	0	0	0	409	29	32
20:00	43	61	149	118	42	5	2	0	0	0	0	0	0	0	0	420	29	32
21:00	47	23	91	103	35	9	2	0	1	2	0	0	0	0	0	313	29	33
22:00	7	11	49	76	48	9	1	0	0	0	0	0	0	0	0	201	32	35
23:00	8	6	17	60	41	9	3	1	0	0	0	0	0	0	0	145	33	37
Total	1271	1027	2062	2509	1338	264	37	10	1	2	0	0	0	0	0	8521		
Percent	14.9%	12.1%	24.2%	29.4%	15.7%	3.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	11:00	07:00	07:00	06:00	07:00	05:00								07:00		
Vol.	53	60	158	179	128	27	5	2								549		
PM Peak	17:00	17:00	14:00	14:00	13:00	14:00	23:00	12:00	21:00	21:00						16:00		
Vol.	226	112	153	185	120	24	3	1	1	2						588		

Innovative Data, LLC

Location: Belmont Avenue
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 Client: Tighe & Bond

PO Box 468
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Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/06/15	2	6	15	25	17	6	2	0	0	0	0	0	0	0	0	73	34	38
01:00	0	9	8	24	14	1	2	0	0	0	0	0	0	0	0	58	32	34
02:00	0	3	8	14	11	5	1	0	0	0	0	0	0	0	0	42	35	39
03:00	0	2	4	5	4	2	0	0	0	0	0	0	0	0	0	17	33	35
04:00	3	6	8	14	6	6	1	1	0	0	0	0	0	0	0	45	34	38
05:00	5	10	25	27	42	15	3	1	0	0	0	0	0	0	0	128	34	38
06:00	13	10	33	84	76	44	4	2	0	0	0	0	0	0	0	266	36	39
07:00	37	37	68	188	153	34	8	1	0	0	0	0	0	0	0	526	33	36
08:00	26	38	105	222	120	17	1	0	0	0	0	0	0	0	0	529	32	35
09:00	21	49	134	198	85	10	1	0	0	0	0	0	0	0	0	498	31	34
10:00	36	52	141	150	63	11	1	0	0	0	0	0	0	0	0	454	30	34
11:00	52	72	158	157	45	11	1	0	0	0	0	0	0	0	0	496	29	33
12 PM	64	87	158	139	48	15	0	0	0	0	0	0	0	0	0	511	29	33
13:00	65	91	167	140	48	13	0	0	0	0	0	0	0	0	0	524	28	33
14:00	55	87	143	162	79	19	1	0	0	0	0	0	0	0	0	546	30	34
15:00	154	119	135	126	50	8	1	0	0	0	0	0	0	0	0	593	27	32
16:00	308	106	89	70	31	5	0	0	0	0	0	0	0	0	0	609	23	29
17:00	275	110	90	76	25	8	0	0	0	0	0	0	0	0	0	584	23	29
18:00	85	77	131	141	43	15	2	0	0	0	0	0	0	0	0	494	29	33
19:00	43	60	147	154	50	12	2	0	0	0	0	0	0	0	0	468	29	33
20:00	25	41	120	156	48	6	0	0	0	0	0	0	0	0	0	396	30	33
21:00	11	17	63	91	43	9	1	1	0	0	0	0	0	0	0	236	31	35
22:00	11	12	53	72	51	12	1	0	0	0	0	0	0	0	0	212	32	36
23:00	2	3	21	49	28	6	3	1	0	0	0	0	0	0	0	113	33	38
Total	1293	1104	2024	2484	1180	290	36	7	0	0	0	0	0	0	0	8418		
Percent	15.4%	13.1%	24.0%	29.5%	14.0%	3.4%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	08:00	07:00	06:00	07:00	06:00										08:00
Vol.	52	72	158	222	153	44	8	2										529
PM Peak	16:00	15:00	13:00	14:00	14:00	14:00	23:00	21:00										16:00
Vol.	308	119	167	162	79	19	3	1										609

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/07/15	1	6	13	28	17	7	1	0	0	0	0	0	0	0	0	73	33	37
01:00	1	2	10	16	13	1	0	0	0	0	0	0	0	0	0	43	33	35
02:00	1	1	14	20	11	2	1	0	0	0	0	0	0	0	0	50	32	34
03:00	1	2	4	13	5	5	1	0	0	0	0	0	0	0	0	31	35	38
04:00	2	4	5	13	13	3	1	0	0	0	0	0	0	0	0	41	33	36
05:00	5	13	17	31	31	17	4	2	0	0	0	0	0	0	0	120	36	40
06:00	5	19	45	88	93	33	8	1	1	0	0	0	0	0	0	293	35	38
07:00	35	25	68	194	157	52	3	0	0	0	0	0	0	0	0	534	34	37
08:00	38	47	109	210	129	23	2	0	0	0	0	0	0	0	0	558	32	35
09:00	47	82	138	158	67	10	2	0	0	0	0	0	0	0	0	504	30	33
10:00	38	57	111	169	75	12	2	0	0	0	0	0	0	0	0	464	30	34
11:00	79	74	154	179	49	12	0	0	0	0	0	0	0	0	0	547	29	32
12 PM	67	73	136	160	75	10	0	0	0	0	0	0	0	0	0	521	30	33
13:00	38	47	147	172	71	18	0	0	0	0	0	0	0	0	0	493	30	34
14:00	141	57	118	123	47	11	0	0	0	0	0	0	0	0	0	497	28	32
15:00	284	65	74	86	42	4	1	0	0	0	0	0	0	0	0	556	25	31
16:00	213	104	130	110	42	5	0	0	0	0	0	0	0	0	0	604	26	30
17:00	273	77	108	90	43	10	0	0	0	0	0	0	0	0	0	601	25	31
18:00	94	89	132	120	46	11	1	0	0	0	0	0	0	0	0	493	28	32
19:00	48	56	134	134	69	9	1	0	0	0	0	0	0	0	0	451	30	34
20:00	59	42	153	139	38	3	1	0	0	0	0	0	0	0	0	435	28	32
21:00	29	46	106	96	34	12	1	0	0	0	1	0	0	0	0	325	29	34
22:00	12	26	50	86	69	13	1	0	0	0	0	0	0	0	0	257	33	35
23:00	4	14	32	41	34	16	3	1	0	0	0	0	0	0	0	145	34	38
Total	1515	1028	2008	2476	1270	299	34	4	1	0	1	0	0	0	0	8636		
Percent	17.5%	11.9%	23.3%	28.7%	14.7%	3.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	11:00	08:00	07:00	07:00	06:00	05:00	06:00									08:00
Vol.	79	82	154	210	157	52	8	2	1									558
PM Peak	15:00	16:00	20:00	13:00	12:00	13:00	23:00	23:00			21:00							16:00
Vol.	284	104	153	172	75	18	3	1			1							604
Total	4079	3159	6094	7469	3788	853	107	21	2	2	1	0	0	0	0	25575		
Percent	15.9%	12.4%	23.8%	29.2%	14.8%	3.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 9 MPH
 50th Percentile : 22 MPH
 85th Percentile : 30 MPH
 95th Percentile : 34 MPH

Stats
 10 MPH Pace Speed : 22-31 MPH
 Number in Pace : 10793
 Percent in Pace : 42.2%
 Number of Vehicles > 40 MPH : 187
 Percent of Vehicles > 40 MPH : 0.7%
 Mean Speed(Average) : 21 MPH

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Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

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Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	45	1	0	0	0	0	0	1	0	0	0	0	0	47
01:00	0	25	1	0	0	0	0	0	1	0	0	0	0	1	28
02:00	0	22	4	0	0	0	0	0	0	0	0	0	0	1	27
03:00	0	11	1	0	0	0	0	0	0	0	0	0	0	0	12
04:00	0	16	5	1	2	1	0	0	0	0	0	0	0	0	25
05:00	0	39	5	3	2	1	0	0	0	0	0	0	0	0	50
06:00	1	77	11	7	6	0	0	1	0	0	0	0	0	5	108
07:00	3	135	22	3	5	1	0	0	0	1	0	0	0	17	187
08:00	1	170	25	5	7	4	0	2	1	0	0	0	0	11	226
09:00	1	173	25	3	8	2	0	1	0	0	0	0	0	15	228
10:00	4	161	36	3	3	1	0	1	0	0	1	0	0	7	217
11:00	2	189	28	3	3	0	0	0	0	0	0	0	0	15	240
12 PM	5	201	16	3	4	0	0	0	0	0	0	0	0	22	251
13:00	2	215	28	3	2	2	0	0	0	0	0	0	0	10	262
14:00	3	212	32	4	7	2	0	0	2	0	0	0	0	11	273
15:00	4	234	28	4	6	0	0	2	1	0	0	0	0	51	330
16:00	8	239	29	4	6	1	0	1	0	0	1	0	0	46	335
17:00	6	244	23	2	1	1	0	4	1	0	0	0	0	65	347
18:00	4	214	18	2	1	0	0	2	0	0	0	0	0	22	263
19:00	3	197	14	1	0	1	0	0	0	0	0	0	0	8	224
20:00	2	197	13	1	2	0	0	0	0	0	0	0	0	14	229
21:00	3	138	17	1	2	0	0	0	0	0	0	0	0	26	187
22:00	1	103	6	0	0	0	0	0	0	0	0	0	0	2	112
23:00	0	65	4	0	1	0	0	0	0	0	0	0	0	1	71
Total	53	3322	392	53	68	17	0	14	7	1	2	0	0	350	4279
Percent	1.2%	77.6%	9.2%	1.2%	1.6%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	8.2%	
AM Peak	10:00	11:00	10:00	06:00	09:00	08:00		08:00	00:00	07:00	10:00			07:00	
Vol.	4	189	36	7	8	4		2	1	1	1			17	
PM Peak	16:00	17:00	14:00	14:00	14:00	13:00		17:00	14:00		16:00			17:00	
Vol.	8	244	32	4	7	2		4	2		1			65	

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05/06/15	0	38	5	0	0	0	0	0	0	0	0	0	0	0	43
01:00	0	26	3	0	1	0	0	0	0	0	0	0	0	1	31
02:00	1	23	3	0	0	0	0	0	0	0	0	0	0	0	27
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:00	1	15	4	1	1	1	0	0	0	0	0	0	0	2	25
05:00	0	38	8	3	4	0	0	0	0	0	0	0	0	0	53
06:00	0	78	9	4	1	1	0	0	0	0	0	0	0	6	99
07:00	4	129	25	3	8	0	0	0	0	0	0	0	0	15	184
08:00	2	153	24	6	4	0	0	0	0	0	0	0	0	9	198
09:00	0	156	29	3	5	1	0	0	0	0	0	0	0	12	206
10:00	0	169	17	7	4	0	0	1	0	0	0	0	0	11	209
11:00	0	179	41	2	4	0	0	0	0	0	0	0	0	13	239
12 PM	3	205	29	7	2	1	0	2	0	0	0	0	0	7	256
13:00	4	210	21	3	5	1	0	0	0	0	0	0	0	16	260
14:00	2	223	22	1	4	1	0	1	0	0	0	0	0	20	274
15:00	2	226	33	5	9	2	0	2	0	0	0	0	0	44	323
16:00	11	217	24	5	1	0	0	0	1	0	1	0	0	99	359
17:00	8	249	26	2	4	1	0	3	0	0	0	0	0	70	363
18:00	2	215	26	2	4	2	0	1	0	0	0	0	0	20	272
19:00	2	213	18	1	1	1	0	0	0	0	0	0	0	11	247
20:00	3	180	11	1	1	0	0	0	0	0	0	0	0	4	200
21:00	1	107	13	2	1	0	0	0	0	0	0	0	0	3	127
22:00	2	99	8	0	0	0	0	1	0	0	0	0	0	6	116
23:00	0	59	5	0	0	0	0	0	0	0	0	0	0	0	64
Total	48	3213	405	58	64	12	0	11	1	0	1	0	0	369	4182
Percent	1.1%	76.8%	9.7%	1.4%	1.5%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	
AM Peak	07:00	11:00	11:00	10:00	07:00	04:00		10:00						07:00	
Vol.	4	179	41	7	8	1		1						15	
PM Peak	16:00	17:00	15:00	12:00	15:00	15:00		17:00	16:00		16:00			16:00	
Vol.	11	249	33	7	9	2		3	1		1			99	

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05/07/15	0	38	4	0	0	0	0	0	0	0	0	0	0	1	43
01:00	0	27	0	0	0	0	0	0	0	0	0	0	0	0	27
02:00	1	20	4	0	0	0	0	0	0	0	0	0	0	1	26
03:00	0	12	2	0	0	1	0	0	0	0	0	0	0	0	15
04:00	0	23	5	1	0	0	0	0	0	0	0	0	0	0	29
05:00	0	41	6	3	3	0	0	0	0	0	0	0	0	0	53
06:00	0	90	13	6	2	0	0	1	1	0	0	0	0	1	114
07:00	2	126	17	3	5	0	0	1	0	0	0	0	0	8	162
08:00	3	157	25	4	8	1	0	1	0	0	0	0	0	16	215
09:00	3	191	21	2	5	3	0	0	0	0	0	0	0	10	235
10:00	0	166	27	2	2	0	0	0	0	0	0	0	0	14	211
11:00	3	216	26	3	5	2	0	1	1	0	0	0	0	19	276
12 PM	0	209	24	3	1	0	0	1	0	0	0	0	0	21	259
13:00	2	208	23	2	5	0	0	0	0	0	0	0	0	13	253
14:00	2	155	24	4	5	0	0	1	0	1	0	0	0	93	285
15:00	3	155	18	3	2	2	0	1	0	1	0	0	0	179	364
16:00	3	252	21	2	4	1	0	1	0	0	0	0	0	62	346
17:00	14	220	25	1	2	2	0	2	1	0	0	0	0	91	358
18:00	0	220	16	2	1	0	0	1	0	0	0	0	0	30	270
19:00	5	220	16	1	1	1	0	0	0	1	0	0	0	10	255
20:00	3	208	21	0	4	1	0	0	0	0	0	0	0	15	252
21:00	0	173	13	1	2	1	0	0	0	0	0	0	0	6	196
22:00	0	117	12	0	2	1	0	1	0	0	0	0	0	3	136
23:00	0	70	8	0	0	0	0	1	0	0	0	0	0	1	80
Total	44	3314	371	43	59	16	0	13	3	3	0	0	0	594	4460
Percent	1.0%	74.3%	8.3%	1.0%	1.3%	0.4%	0.0%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	13.3%	
AM Peak	08:00	11:00	10:00	06:00	08:00	09:00		06:00	06:00					11:00	
Vol.	3	216	27	6	8	3		1	1					19	
PM Peak	17:00	16:00	17:00	14:00	13:00	15:00		17:00	17:00	14:00				15:00	
Vol.	14	252	25	4	5	2		2	1	1				179	
Grand Total	145	9849	1168	154	191	45	0	38	11	4	3	0	0	1313	12921
Percent	1.1%	76.2%	9.0%	1.2%	1.5%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	10.2%	

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Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	28	4	0	0	0	0	0	0	0	0	0	0	1	33
01:00	0	19	1	0	0	0	0	0	0	0	0	0	0	1	21
02:00	0	10	3	0	0	0	0	0	0	0	0	0	0	0	13
03:00	0	7	1	0	1	0	0	0	0	0	0	0	0	0	9
04:00	0	15	5	0	0	1	0	0	0	0	0	0	0	0	21
05:00	0	57	15	2	1	0	0	0	0	0	0	0	0	0	75
06:00	1	95	42	6	6	1	0	1	0	0	0	0	0	3	155
07:00	2	271	51	7	9	2	0	0	0	0	0	0	0	20	362
08:00	1	237	51	7	2	0	0	0	1	0	0	0	0	10	309
09:00	3	208	52	5	3	2	0	0	0	0	0	0	0	12	285
10:00	2	194	35	2	4	0	0	2	0	0	0	0	0	8	247
11:00	2	219	40	4	6	0	0	1	0	0	0	0	0	14	286
12 PM	3	197	42	2	6	1	0	1	0	0	0	0	0	19	271
13:00	2	198	39	4	10	2	0	0	0	0	0	0	0	11	266
14:00	1	201	51	4	7	0	0	0	1	0	0	0	0	9	274
15:00	1	177	32	9	6	2	0	0	0	0	0	0	0	21	248
16:00	2	188	40	4	2	0	0	0	0	0	0	0	0	17	253
17:00	6	147	15	0	6	1	0	0	0	0	0	0	0	40	215
18:00	1	187	22	3	1	1	0	0	0	0	0	0	0	19	234
19:00	3	148	22	1	2	0	0	2	0	0	0	0	0	7	185
20:00	2	168	17	1	0	0	0	1	0	0	0	0	0	2	191
21:00	1	101	13	2	1	0	0	0	0	0	0	0	0	8	126
22:00	1	76	11	0	0	0	0	0	0	0	0	0	0	1	89
23:00	0	64	8	0	1	0	0	0	0	0	0	0	0	1	74
Total	34	3212	612	63	74	13	0	8	2	0	0	0	0	224	4242
Percent	0.8%	75.7%	14.4%	1.5%	1.7%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	
AM Peak	09:00	07:00	09:00	07:00	07:00	07:00		10:00	08:00					07:00	
Vol.	3	271	52	7	9	2		2	1					20	
PM Peak	17:00	14:00	14:00	15:00	13:00	13:00		19:00	14:00					17:00	
Vol.	6	201	51	9	10	2		2	1					40	

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05/06/15	1	23	5	0	1	0	0	0	0	0	0	0	0	0	30
01:00	0	22	5	0	0	0	0	0	0	0	0	0	0	0	27
02:00	0	13	1	0	1	0	0	0	0	0	0	0	0	0	15
03:00	0	7	2	0	1	0	0	0	0	0	0	0	0	0	10
04:00	1	16	2	0	0	0	0	0	1	0	0	0	0	0	20
05:00	0	52	21	2	0	0	0	0	0	0	0	0	0	0	75
06:00	1	113	40	6	4	1	0	0	0	0	0	0	0	2	167
07:00	3	261	56	3	5	2	0	1	0	0	0	0	0	11	342
08:00	2	254	54	7	3	1	0	1	1	0	0	0	0	8	331
09:00	2	220	49	5	8	2	0	1	0	0	0	0	0	5	292
10:00	0	194	36	3	5	0	0	0	0	0	0	0	0	7	245
11:00	1	195	42	4	6	1	0	0	0	0	0	0	0	8	257
12 PM	3	193	38	3	4	0	0	1	1	0	0	0	0	12	255
13:00	6	190	44	3	7	0	0	3	0	0	0	0	0	11	264
14:00	0	217	38	3	3	0	0	1	0	0	0	0	0	10	272
15:00	3	182	42	9	6	2	0	0	0	0	0	0	0	26	270
16:00	2	167	35	3	3	3	0	1	0	0	0	0	0	36	250
17:00	5	156	18	3	3	1	0	1	0	0	0	0	0	34	221
18:00	0	178	23	4	2	0	0	0	0	0	0	0	0	15	222
19:00	4	176	26	0	2	0	0	0	0	0	0	0	0	13	221
20:00	3	163	20	1	2	0	0	0	0	0	0	0	0	7	196
21:00	0	91	13	1	1	0	0	0	0	0	0	0	0	3	109
22:00	0	81	11	2	1	0	0	0	0	0	0	0	0	1	96
23:00	1	44	3	0	1	0	0	0	0	0	0	0	0	0	49
Total	38	3208	624	62	69	13	0	10	3	0	0	0	0	209	4236
Percent	0.9%	75.7%	14.7%	1.5%	1.6%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	4.9%	
AM Peak	07:00	07:00	07:00	08:00	09:00	07:00		07:00	04:00					07:00	
Vol.	3	261	56	7	8	2		1	1					11	
PM Peak	13:00	14:00	13:00	15:00	13:00	16:00		13:00	12:00					16:00	
Vol.	6	217	44	9	7	3		3	1					36	

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Westbound																
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total	
05/07/15	0	24	5	0	1	0	0	0	0	0	0	0	0	0	30	
01:00	0	12	4	0	0	0	0	0	0	0	0	0	0	0	16	
02:00	0	17	3	1	1	1	0	0	1	0	0	0	0	0	24	
03:00	0	9	6	0	1	0	0	0	0	0	0	0	0	0	16	
04:00	0	11	1	0	0	0	0	0	0	0	0	0	0	0	12	
05:00	0	47	16	1	3	0	0	0	0	0	0	0	0	0	67	
06:00	2	122	45	5	3	0	0	1	0	0	0	0	0	1	179	
07:00	2	291	53	5	7	1	0	1	1	0	0	0	0	11	372	
08:00	4	256	59	6	3	0	0	0	0	0	0	0	0	15	343	
09:00	3	202	36	5	8	0	0	1	0	0	0	0	0	14	269	
10:00	1	208	31	4	5	2	0	0	0	0	0	0	0	2	253	
11:00	4	202	36	2	9	1	0	0	1	0	0	0	0	16	271	
12 PM	4	187	47	1	6	0	0	1	0	0	0	0	0	16	262	
13:00	3	182	40	5	2	0	0	1	0	0	0	0	0	7	240	
14:00	2	164	21	3	7	0	0	1	0	0	0	0	0	14	212	
15:00	1	142	24	4	3	0	0	0	0	0	0	0	0	18	192	
16:00	4	183	32	2	6	0	0	0	0	0	0	0	0	31	258	
17:00	14	165	24	1	3	0	0	1	0	0	0	0	0	35	243	
18:00	2	166	35	3	1	1	0	0	0	0	0	0	0	15	223	
19:00	6	162	15	1	3	0	0	0	0	0	0	0	0	9	196	
20:00	2	150	19	0	3	0	0	0	0	0	0	0	0	9	183	
21:00	2	107	12	1	3	0	0	0	0	0	0	0	0	4	129	
22:00	0	106	11	0	2	0	0	0	0	0	0	0	0	2	121	
23:00	0	59	5	0	0	0	0	0	0	0	0	0	0	1	65	
Total	56	3174	580	50	80	6	0	7	3	0	0	0	0	220	4176	
Percent	1.3%	76.0%	13.9%	1.2%	1.9%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	5.3%		
AM Peak	08:00	07:00	08:00	08:00	11:00	10:00		06:00	02:00					11:00		
Vol.	4	291	59	6	9	2		1	1					16		
PM Peak	17:00	12:00	12:00	13:00	14:00	18:00		12:00						17:00		
Vol.	14	187	47	5	7	1		1						35		
Grand Total	128	9594	1816	175	223	32	0	25	8	0	0	0	0	653	12654	
Percent	1.0%	75.8%	14.4%	1.4%	1.8%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	5.2%		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	73	5	0	0	0	0	0	1	0	0	0	0	1	80
01:00	0	44	2	0	0	0	0	0	1	0	0	0	0	2	49
02:00	0	32	7	0	0	0	0	0	0	0	0	0	0	1	40
03:00	0	18	2	0	1	0	0	0	0	0	0	0	0	0	21
04:00	0	31	10	1	2	2	0	0	0	0	0	0	0	0	46
05:00	0	96	20	5	3	1	0	0	0	0	0	0	0	0	125
06:00	2	172	53	13	12	1	0	2	0	0	0	0	0	8	263
07:00	5	406	73	10	14	3	0	0	0	1	0	0	0	37	549
08:00	2	407	76	12	9	4	0	2	2	0	0	0	0	21	535
09:00	4	381	77	8	11	4	0	1	0	0	0	0	0	27	513
10:00	6	355	71	5	7	1	0	3	0	0	1	0	0	15	464
11:00	4	408	68	7	9	0	0	1	0	0	0	0	0	29	526
12 PM	8	398	58	5	10	1	0	1	0	0	0	0	0	41	522
13:00	4	413	67	7	12	4	0	0	0	0	0	0	0	21	528
14:00	4	413	83	8	14	2	0	0	3	0	0	0	0	20	547
15:00	5	411	60	13	12	2	0	2	1	0	0	0	0	72	578
16:00	10	427	69	8	8	1	0	1	0	0	1	0	0	63	588
17:00	12	391	38	2	7	2	0	4	1	0	0	0	0	105	562
18:00	5	401	40	5	2	1	0	2	0	0	0	0	0	41	497
19:00	6	345	36	2	2	1	0	2	0	0	0	0	0	15	409
20:00	4	365	30	2	2	0	0	1	0	0	0	0	0	16	420
21:00	4	239	30	3	3	0	0	0	0	0	0	0	0	34	313
22:00	2	179	17	0	0	0	0	0	0	0	0	0	0	3	201
23:00	0	129	12	0	2	0	0	0	0	0	0	0	0	2	145
Total	87	6534	1004	116	142	30	0	22	9	1	2	0	0	574	8521
Percent	1.0%	76.7%	11.8%	1.4%	1.7%	0.4%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	6.7%	
AM Peak	10:00	11:00	09:00	06:00	07:00	08:00		10:00	08:00	07:00	10:00			07:00	
Vol.	6	408	77	13	14	4		3	2	1	1			37	
PM Peak	17:00	16:00	14:00	15:00	14:00	13:00		17:00	14:00		16:00			17:00	
Vol.	12	427	83	13	14	4		4	3		1			105	

Innovative Data, LLC

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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	61	10	0	1	0	0	0	0	0	0	0	0	0	73
01:00	0	48	8	0	1	0	0	0	0	0	0	0	0	1	58
02:00	1	36	4	0	1	0	0	0	0	0	0	0	0	0	42
03:00	0	13	3	0	1	0	0	0	0	0	0	0	0	0	17
04:00	2	31	6	1	1	1	0	0	1	0	0	0	0	2	45
05:00	0	90	29	5	4	0	0	0	0	0	0	0	0	0	128
06:00	1	191	49	10	5	2	0	0	0	0	0	0	0	8	266
07:00	7	390	81	6	13	2	0	1	0	0	0	0	0	26	526
08:00	4	407	78	13	7	1	0	1	1	0	0	0	0	17	529
09:00	2	376	78	8	13	3	0	1	0	0	0	0	0	17	498
10:00	0	363	53	10	9	0	0	1	0	0	0	0	0	18	454
11:00	1	374	83	6	10	1	0	0	0	0	0	0	0	21	496
12 PM	6	398	67	10	6	1	0	3	1	0	0	0	0	19	511
13:00	10	400	65	6	12	1	0	3	0	0	0	0	0	27	524
14:00	2	440	60	4	7	1	0	2	0	0	0	0	0	30	546
15:00	5	408	75	14	15	4	0	2	0	0	0	0	0	70	593
16:00	13	384	59	8	4	3	0	1	1	0	1	0	0	135	609
17:00	13	405	44	5	7	2	0	4	0	0	0	0	0	104	584
18:00	2	393	49	6	6	2	0	1	0	0	0	0	0	35	494
19:00	6	389	44	1	3	1	0	0	0	0	0	0	0	24	468
20:00	6	343	31	2	3	0	0	0	0	0	0	0	0	11	396
21:00	1	198	26	3	2	0	0	0	0	0	0	0	0	6	236
22:00	2	180	19	2	1	0	0	1	0	0	0	0	0	7	212
23:00	1	103	8	0	1	0	0	0	0	0	0	0	0	0	113
Total	86	6421	1029	120	133	25	0	21	4	0	1	0	0	578	8418
Percent	1.0%	76.3%	12.2%	1.4%	1.6%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	6.9%	
AM Peak	07:00	08:00	11:00	08:00	07:00	09:00		07:00	04:00					07:00	
Vol.	7	407	83	13	13	3		1	1					26	
PM Peak	16:00	14:00	15:00	15:00	15:00	15:00		17:00	12:00		16:00			16:00	
Vol.	13	440	75	14	15	4		4	1		1			135	

Innovative Data, LLC

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Belchertown, Massachusetts

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Location: Belmont Avenue

Location: between Sumner & Burlington

Location: Springfield, Massachusetts

Client: Tighe & Bond

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	62	9	0	1	0	0	0	0	0	0	0	0	1	73
01:00	0	39	4	0	0	0	0	0	0	0	0	0	0	0	43
02:00	1	37	7	1	1	1	0	0	1	0	0	0	0	1	50
03:00	0	21	8	0	1	1	0	0	0	0	0	0	0	0	31
04:00	0	34	6	1	0	0	0	0	0	0	0	0	0	0	41
05:00	0	88	22	4	6	0	0	0	0	0	0	0	0	0	120
06:00	2	212	58	11	5	0	0	2	1	0	0	0	0	2	293
07:00	4	417	70	8	12	1	0	2	1	0	0	0	0	19	534
08:00	7	413	84	10	11	1	0	1	0	0	0	0	0	31	558
09:00	6	393	57	7	13	3	0	1	0	0	0	0	0	24	504
10:00	1	374	58	6	7	2	0	0	0	0	0	0	0	16	464
11:00	7	418	62	5	14	3	0	1	2	0	0	0	0	35	547
12 PM	4	396	71	4	7	0	0	2	0	0	0	0	0	37	521
13:00	5	390	63	7	7	0	0	1	0	0	0	0	0	20	493
14:00	4	319	45	7	12	0	0	2	0	1	0	0	0	107	497
15:00	4	297	42	7	5	2	0	1	0	1	0	0	0	197	556
16:00	7	435	53	4	10	1	0	1	0	0	0	0	0	93	604
17:00	28	385	49	2	5	2	0	3	1	0	0	0	0	126	601
18:00	2	386	51	5	2	1	0	1	0	0	0	0	0	45	493
19:00	11	382	31	2	4	1	0	0	0	1	0	0	0	19	451
20:00	5	358	40	0	7	1	0	0	0	0	0	0	0	24	435
21:00	2	280	25	2	5	1	0	0	0	0	0	0	0	10	325
22:00	0	223	23	0	4	1	0	1	0	0	0	0	0	5	257
23:00	0	129	13	0	0	0	0	1	0	0	0	0	0	2	145
Total	100	6488	951	93	139	22	0	20	6	3	0	0	0	814	8636
Percent	1.2%	75.1%	11.0%	1.1%	1.6%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	9.4%	
AM Peak	08:00	11:00	08:00	06:00	11:00	09:00		06:00	11:00					11:00	
Vol.	7	418	84	11	14	3		2	2					35	
PM Peak	17:00	16:00	12:00	13:00	14:00	15:00		17:00	17:00	14:00				15:00	
Vol.	28	435	71	7	12	2		3	1	1				197	
Grand Total	273	19443	2984	329	414	77	0	63	19	4	3	0	0	1966	25575
Percent	1.1%	76.0%	11.7%	1.3%	1.6%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	7.7%	

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedatalc.com or 1.413.668.5094

Start Time	05-May-1 Tue	Northbound		Southbound		Combined		06-May Wed	Northbound		Southbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		16	93	19	92	35	185		14	91	24	106	38	197
12:15		10	102	18	108	28	210		8	111	15	104	23	215
12:30		12	88	17	111	29	199		7	98	19	111	26	209
12:45		12	125	10	86	22	211		9	109	17	103	26	212
01:00		11	100	13	125	24	225		6	111	9	100	15	211
01:15		2	106	13	108	15	214		7	102	9	107	16	209
01:30		8	108	6	113	14	221		6	106	8	86	14	192
01:45		2	97	9	117	11	214		3	106	7	92	10	198
02:00		9	115	5	115	14	230		8	104	13	99	21	203
02:15		5	100	8	127	13	227		2	104	7	90	9	194
02:30		10	110	5	114	15	224		4	88	5	111	9	199
02:45		4	110	3	110	7	220		6	86	2	148	8	234
03:00		4	99	7	109	11	208		1	102	6	134	7	236
03:15		7	91	8	120	15	211		6	117	2	134	8	251
03:30		3	90	6	99	9	189		4	104	3	108	7	212
03:45		3	75	5	108	8	183		5	100	3	132	8	232
04:00		7	92	3	121	10	213		9	100	3	137	12	237
04:15		6	97	7	154	13	251		7	97	14	136	21	233
04:30		13	90	12	125	25	215		8	102	12	135	20	237
04:45		13	108	11	133	24	241		10	101	15	141	25	242
05:00		33	118	12	166	45	284		24	112	10	112	34	224
05:15		37	107	14	154	51	261		28	108	15	138	43	246
05:30		40	106	22	155	62	261		43	114	24	133	67	247
05:45		39	111	25	127	64	238		44	92	22	139	66	231
06:00		59	108	27	133	86	241		56	107	24	141	80	248
06:15		75	83	37	136	112	219		68	112	35	107	103	219
06:30		94	86	64	110	158	196		94	97	52	110	146	207
06:45		97	86	64	103	161	189		91	103	57	106	148	209
07:00		111	75	63	106	174	181		109	69	64	106	173	175
07:15		118	62	88	98	206	160		101	92	76	99	177	191
07:30		118	85	88	105	206	190		113	70	73	108	186	178
07:45		96	88	90	100	186	188		97	83	95	106	192	189
08:00		105	82	61	104	166	186		113	70	87	93	200	163
08:15		103	72	91	119	194	191		91	94	96	100	187	194
08:30		110	78	93	77	203	155		128	84	79	104	207	188
08:45		101	49	95	85	196	134		108	77	85	100	193	177
09:00		108	68	81	73	189	141		110	55	72	65	182	120
09:15		106	58	93	61	199	119		96	51	83	66	179	117
09:30		100	47	105	73	205	120		93	52	108	54	201	106
09:45		87	47	86	63	173	110		84	47	96	57	180	104
10:00		99	51	97	56	196	107		87	65	77	56	164	121
10:15		79	39	76	34	155	73		97	36	73	48	170	84
10:30		112	36	109	52	221	88		106	33	94	68	200	101
10:45		96	30	105	35	201	65		91	33	109	40	200	73
11:00		110	30	88	40	198	70		95	19	111	34	206	53
11:15		98	32	100	43	198	75		101	27	99	29	200	56
11:30		92	23	116	30	208	53		83	16	85	25	168	41
11:45		114	22	113	23	227	45		107	22	88	28	195	50
Total		2694	3875	2288	4756	4982	8631		2588	3979	2182	4686	4770	8665
Day Total		6569		7044		13613			6567		6868		13435	
% Total		19.8%	28.5%	16.8%	34.9%				19.3%	29.6%	16.2%	34.9%		
Peak		06:45	05:00	11:00	04:45	11:00	04:45		08:30	04:45	10:30	05:15	10:30	05:15
Vol.		444	442	417	608	831	1047		442	435	413	551	806	972
P.H.F.		0.941	0.936	0.899	0.916	0.915	0.922		0.863	0.929	0.930	0.977	0.973	0.980

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Ormond
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Start Time	07-May-1 Thu	Northbound		Southbound		Combined		08-May Fri	Northbound		Southbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		20	93	24	94	44	187		0	*	0	*	0	*
12:15		14	112	18	98	32	210		*	*	*	*	*	*
12:30		9	108	14	100	23	208		*	*	*	*	*	*
12:45		2	112	12	100	14	212		*	*	*	*	*	*
01:00		9	97	12	91	21	188		*	*	*	*	*	*
01:15		3	88	13	89	16	177		*	*	*	*	*	*
01:30		4	119	9	119	13	238		*	*	*	*	*	*
01:45		4	84	7	110	11	194		*	*	*	*	*	*
02:00		8	101	10	103	18	204		*	*	*	*	*	*
02:15		8	111	10	115	18	226		*	*	*	*	*	*
02:30		8	107	3	128	11	235		*	*	*	*	*	*
02:45		9	101	11	113	20	214		*	*	*	*	*	*
03:00		2	93	4	143	6	236		*	*	*	*	*	*
03:15		9	83	6	121	15	204		*	*	*	*	*	*
03:30		6	99	9	143	15	242		*	*	*	*	*	*
03:45		6	95	4	129	10	224		*	*	*	*	*	*
04:00		8	104	12	135	20	239		*	*	*	*	*	*
04:15		9	104	8	151	17	255		*	*	*	*	*	*
04:30		11	102	12	119	23	221		*	*	*	*	*	*
04:45		16	98	15	141	31	239		*	*	*	*	*	*
05:00		27	107	8	146	35	253		*	*	*	*	*	*
05:15		24	104	11	134	35	238		*	*	*	*	*	*
05:30		42	96	28	162	70	258		*	*	*	*	*	*
05:45		45	98	24	136	69	234		*	*	*	*	*	*
06:00		52	106	23	134	75	240		*	*	*	*	*	*
06:15		77	99	33	116	110	215		*	*	*	*	*	*
06:30		83	104	52	129	135	233		*	*	*	*	*	*
06:45		106	85	66	109	172	194		*	*	*	*	*	*
07:00		90	103	70	130	160	233		*	*	*	*	*	*
07:15		114	86	84	112	198	198		*	*	*	*	*	*
07:30		123	86	83	84	206	170		*	*	*	*	*	*
07:45		99	74	87	113	186	187		*	*	*	*	*	*
08:00		100	84	92	88	192	172		*	*	*	*	*	*
08:15		110	87	67	97	177	184		*	*	*	*	*	*
08:30		110	62	89	96	199	158		*	*	*	*	*	*
08:45		106	65	91	89	197	154		*	*	*	*	*	*
09:00		90	72	103	80	193	152		*	*	*	*	*	*
09:15		88	66	81	80	169	146		*	*	*	*	*	*
09:30		124	60	90	68	214	128		*	*	*	*	*	*
09:45		95	50	89	62	184	112		*	*	*	*	*	*
10:00		81	64	105	90	186	154		*	*	*	*	*	*
10:15		99	41	90	45	189	86		*	*	*	*	*	*
10:30		109	40	79	53	188	93		*	*	*	*	*	*
10:45		95	42	98	52	193	94		*	*	*	*	*	*
11:00		85	36	94	41	179	77		*	*	*	*	*	*
11:15		97	28	109	30	206	58		*	*	*	*	*	*
11:30		95	23	94	42	189	65		*	*	*	*	*	*
11:45		98	9	126	34	224	43		*	*	*	*	*	*
Total		2629	3988	2279	4894	4908	8882		0	0	0	0	0	0
Day Total		6617		7173		13790			0	0	0	0	0	0
% Total		19.1%	28.9%	16.5%	35.5%				0.0%	0.0%	0.0%	0.0%		
Peak		07:15	00:15	11:00	04:45	11:00	04:45							
Vol.		436	429	423	583	798	988							
P.H.F.		0.886	0.958	0.839	0.900	0.891	0.957							

ADT ADT 13,603 AADT 13,603

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/05/15	1	5	14	19	11	0	0	0	0	0	0	0	0	0	0	50	31	33
01:00	1	2	10	8	2	0	0	0	0	0	0	0	0	0	0	23	29	31
02:00	0	7	6	13	2	0	0	0	0	0	0	0	0	0	0	28	29	30
03:00	0	3	4	5	5	0	0	0	0	0	0	0	0	0	0	17	32	34
04:00	1	3	4	10	16	5	0	0	0	0	0	0	0	0	0	39	35	38
05:00	7	14	31	56	37	4	0	0	0	0	0	0	0	0	0	149	32	34
06:00	17	48	150	95	15	0	0	0	0	0	0	0	0	0	0	325	27	30
07:00	200	88	114	39	2	0	0	0	0	0	0	0	0	0	0	443	22	25
08:00	259	57	84	15	4	0	0	0	0	0	0	0	0	0	0	419	20	24
09:00	107	110	120	61	3	0	0	0	0	0	0	0	0	0	0	401	24	27
10:00	53	95	154	82	1	1	0	0	0	0	0	0	0	0	0	386	25	28
11:00	104	107	140	60	3	0	0	0	0	0	0	0	0	0	0	414	24	27
12 PM	72	84	152	88	12	0	0	0	0	0	0	0	0	0	0	408	26	29
13:00	88	91	140	86	6	0	0	0	0	0	0	0	0	0	0	411	25	28
14:00	122	82	150	72	8	1	0	0	0	0	0	0	0	0	0	435	25	28
15:00	183	83	58	28	3	0	0	0	0	0	0	0	0	0	0	355	20	25
16:00	95	111	102	75	4	0	0	0	0	0	0	0	0	0	0	387	25	28
17:00	89	95	149	96	13	0	0	0	0	0	0	0	0	0	0	442	26	29
18:00	39	59	141	105	17	2	0	0	0	0	0	0	0	0	0	363	27	30
19:00	38	65	104	86	15	1	1	0	0	0	0	0	0	0	0	310	27	30
20:00	34	49	110	77	11	0	0	0	0	0	0	0	0	0	0	281	27	30
21:00	23	48	67	63	16	3	0	0	0	0	0	0	0	0	0	220	28	31
22:00	4	29	60	44	19	0	0	0	0	0	0	0	0	0	0	156	29	32
23:00	5	15	31	37	18	0	0	1	0	0	0	0	0	0	0	107	30	33
Total	1542	1350	2095	1320	243	17	1	1	0	0	0	0	0	0	0	6569		
Percent	23.5%	20.6%	31.9%	20.1%	3.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	09:00	10:00	06:00	05:00	04:00												
Vol.	259	110	154	95	37	5												07:00 443
PM Peak	15:00	16:00	12:00	18:00	22:00	21:00	19:00	23:00										
Vol.	183	111	152	105	19	3	1	1										17:00 442

Innovative Data, LLC

Location: Belmont Avenue
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 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	0	10	8	13	7	0	0	0	0	0	0	0	0	0	38	30	33
01:00	0	5	9	5	3	0	0	0	0	0	0	0	0	0	22	29	31
02:00	0	3	4	8	4	1	0	0	0	0	0	0	0	0	20	32	34
03:00	0	1	3	9	3	0	0	0	0	0	0	0	0	0	16	30	32
04:00	0	3	5	14	9	1	2	0	0	0	0	0	0	0	34	32	34
05:00	4	7	33	59	33	3	0	0	0	0	0	0	0	0	139	32	34
06:00	12	31	85	154	25	2	0	0	0	0	0	0	0	0	309	29	31
07:00	227	102	60	30	1	0	0	0	0	0	0	0	0	0	420	19	25
08:00	160	109	121	49	1	0	0	0	0	0	0	0	0	0	440	23	26
09:00	90	73	124	85	10	1	0	0	0	0	0	0	0	0	383	26	29
10:00	53	76	138	99	14	1	0	0	0	0	0	0	0	0	381	27	30
11:00	100	102	130	46	7	1	0	0	0	0	0	0	0	0	386	24	28
12 PM	144	94	114	54	3	0	0	0	0	0	0	0	0	0	409	23	27
13:00	164	85	101	74	1	0	0	0	0	0	0	0	0	0	425	24	27
14:00	67	75	158	69	13	0	0	0	0	0	0	0	0	0	382	26	29
15:00	190	77	111	39	6	0	0	0	0	0	0	0	0	0	423	22	26
16:00	209	68	81	34	8	0	0	0	0	0	0	0	0	0	400	22	26
17:00	212	74	82	49	9	0	0	0	0	0	0	0	0	0	426	22	27
18:00	90	83	145	93	8	0	0	0	0	0	0	0	0	0	419	26	29
19:00	29	71	115	82	17	0	0	0	0	0	0	0	0	0	314	27	30
20:00	31	60	116	109	9	0	0	0	0	0	0	0	0	0	325	27	30
21:00	7	35	81	72	9	0	0	1	0	0	0	0	0	0	205	28	30
22:00	10	38	46	53	19	1	0	0	0	0	0	0	0	0	167	29	32
23:00	2	16	23	32	10	1	0	0	0	0	0	0	0	0	84	29	32
Total	1801	1298	1893	1331	229	12	2	1	0	0	0	0	0	0	6567		
Percent	27.4%	19.8%	28.8%	20.3%	3.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	10:00	06:00	05:00	05:00	04:00									08:00	
Vol.	227	109	138	154	33	3	2									440	
PM Peak	17:00	12:00	14:00	20:00	22:00	22:00		21:00								17:00	
Vol.	212	94	158	109	19	1		1								426	

Innovative Data, LLC

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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/07/15	1	5	12	24	3	0	0	0	0	0	0	0	0	0	0	45	29	30
01:00	0	4	3	7	5	1	0	0	0	0	0	0	0	0	0	20	31	33
02:00	0	3	6	17	7	0	0	0	0	0	0	0	0	0	0	33	31	34
03:00	0	4	7	8	3	1	0	0	0	0	0	0	0	0	0	23	30	32
04:00	1	2	4	19	17	1	0	0	0	0	0	0	0	0	0	44	33	35
05:00	4	11	19	59	40	5	0	0	0	0	0	0	0	0	0	138	32	35
06:00	16	25	91	137	46	3	0	0	0	0	0	0	0	0	0	318	30	33
07:00	147	73	106	83	15	2	0	0	0	0	0	0	0	0	0	426	25	29
08:00	199	98	105	24	0	0	0	0	0	0	0	0	0	0	0	426	21	25
09:00	74	80	162	75	5	1	0	0	0	0	0	0	0	0	0	397	25	28
10:00	91	81	124	78	9	1	0	0	0	0	0	0	0	0	0	384	25	29
11:00	73	63	121	103	15	0	0	0	0	0	0	0	0	0	0	375	27	30
12 PM	112	110	136	62	5	0	0	0	0	0	0	0	0	0	0	425	24	28
13:00	45	67	139	122	14	1	0	0	0	0	0	0	0	0	0	388	27	30
14:00	130	105	120	60	5	0	0	0	0	0	0	0	0	0	0	420	24	28
15:00	152	88	97	29	4	0	0	0	0	0	0	0	0	0	0	370	22	26
16:00	129	101	124	47	7	0	0	0	0	0	0	0	0	0	0	408	23	27
17:00	142	83	108	67	5	0	0	0	0	0	0	0	0	0	0	405	24	28
18:00	62	90	151	83	7	1	0	0	0	0	0	0	0	0	0	394	26	29
19:00	47	80	111	89	20	2	0	0	0	0	0	0	0	0	0	349	27	30
20:00	30	73	109	81	4	1	0	0	0	0	0	0	0	0	0	298	26	29
21:00	20	45	74	87	22	0	0	0	0	0	0	0	0	0	0	248	28	31
22:00	8	40	59	63	15	2	0	0	0	0	0	0	0	0	0	187	28	31
23:00	4	8	28	41	11	3	1	0	0	0	0	0	0	0	0	96	30	33
Total	1487	1339	2016	1465	284	25	1	0	0	0	0	0	0	0	0	6617		
Percent	22.5%	20.2%	30.5%	22.1%	4.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	09:00	06:00	06:00	05:00												07:00
Vol.	199	98	162	137	46	5												426
PM Peak	15:00	12:00	18:00	13:00	21:00	23:00	23:00											12:00
Vol.	152	110	151	122	22	3	1											425
Total	4830	3987	6004	4116	756	54	4	2	0	0	0	0	0	0	0	19753		
Percent	24.5%	20.2%	30.4%	20.8%	3.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 7 MPH
 50th Percentile : 17 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH

Stats
 10 MPH Pace Speed : 19-28 MPH
 Number in Pace : 7766
 Percent in Pace : 39.3%
 Number of Vehicles > 40 MPH : 9
 Percent of Vehicles > 40 MPH : 0.0%
 Mean Speed(Average) : 18 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	0	1	4	8	12	22	13	4	0	0	0	0	0	0	64	42	45
01:00	0	0	4	4	9	12	5	7	0	0	0	0	0	0	41	45	49
02:00	0	1	1	1	5	8	5	0	0	0	0	0	0	0	21	42	44
03:00	0	1	8	3	8	5	0	0	1	0	0	0	0	0	26	36	38
04:00	1	0	2	5	4	9	6	3	1	1	1	0	0	0	33	44	47
05:00	2	4	6	14	13	26	5	3	0	0	0	0	0	0	73	40	44
06:00	20	11	18	25	57	38	20	2	0	1	0	0	0	0	192	38	42
07:00	51	24	63	79	70	30	8	4	0	0	0	0	0	0	329	33	38
08:00	68	52	88	68	46	13	3	2	0	0	0	0	0	0	340	29	34
09:00	37	34	74	99	90	23	7	1	0	0	0	0	0	0	365	33	37
10:00	28	44	85	95	91	41	2	0	1	0	0	0	0	0	387	33	37
11:00	50	29	75	141	68	43	8	3	0	0	0	0	0	0	417	33	38
12 PM	38	25	74	111	97	43	7	1	1	0	0	0	0	0	397	34	38
13:00	48	37	85	116	120	46	10	1	0	0	0	0	0	0	463	34	38
14:00	53	22	101	131	107	43	8	1	0	0	0	0	0	0	466	33	37
15:00	85	35	90	118	82	22	4	0	0	0	0	0	0	0	436	31	35
16:00	83	46	121	125	114	33	8	2	0	1	0	0	0	0	533	32	36
17:00	55	25	132	144	185	46	14	1	0	0	0	0	0	0	602	34	38
18:00	35	35	78	108	125	86	11	2	1	1	0	0	0	0	482	36	39
19:00	19	15	86	116	107	56	6	3	1	0	0	0	0	0	409	35	39
20:00	25	27	84	91	106	43	8	1	0	0	0	0	0	0	385	34	38
21:00	13	12	27	76	73	51	15	1	1	1	0	0	0	0	270	37	40
22:00	4	7	21	36	38	56	10	5	0	0	0	0	0	0	177	39	43
23:00	7	7	17	17	39	33	14	2	0	0	0	0	0	0	136	39	42
Total	722	494	1344	1731	1666	828	197	49	7	5	1	0	0	0	7044		
Percent	10.2%	7.0%	19.1%	24.6%	23.7%	11.8%	2.8%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	11:00	10:00	11:00	06:00	01:00	03:00	04:00	04:00				11:00		
Vol.	68	52	88	141	91	43	20	7	1	1	1				417		
PM Peak	15:00	16:00	17:00	17:00	17:00	18:00	21:00	22:00	12:00	16:00					17:00		
Vol.	85	46	132	144	185	86	15	5	1	1					602		

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	0	4	4	12	18	22	8	6	1	0	0	0	0	0	75	41	47
01:00	0	1	3	3	8	10	7	1	0	0	0	0	0	0	33	40	44
02:00	0	0	1	4	6	11	3	1	0	1	0	0	0	0	27	40	42
03:00	0	0	1	2	1	6	2	1	1	0	0	0	0	0	14	40	41
04:00	0	1	1	6	11	10	10	3	0	1	0	0	0	1	44	43	46
05:00	2	0	1	11	22	22	5	7	1	0	0	0	0	0	71	41	47
06:00	11	5	29	26	52	31	10	3	0	0	1	0	0	0	168	37	41
07:00	51	29	57	63	71	28	9	0	0	0	0	0	0	0	308	33	38
08:00	38	21	72	108	79	22	7	0	0	0	0	0	0	0	347	33	37
09:00	41	23	68	89	90	39	8	1	0	0	0	0	0	0	359	34	38
10:00	53	28	47	87	83	41	10	3	1	0	0	0	0	0	353	34	39
11:00	52	26	82	107	77	33	5	1	0	0	0	0	0	0	383	33	37
12 PM	66	50	88	122	72	22	3	1	0	0	0	0	0	0	424	31	35
13:00	48	30	68	109	99	29	1	1	0	0	0	0	0	0	385	33	36
14:00	41	19	87	125	102	54	17	2	0	1	0	0	0	0	448	35	39
15:00	69	45	96	158	100	39	1	0	0	0	0	0	0	0	508	32	36
16:00	51	41	111	165	135	41	4	0	0	1	0	0	0	0	549	33	36
17:00	61	41	110	150	117	32	9	0	0	1	1	0	0	0	522	33	36
18:00	42	22	99	122	122	45	10	1	0	1	0	0	0	0	464	34	38
19:00	34	34	73	104	93	61	18	2	0	0	0	0	0	0	419	35	40
20:00	30	28	64	87	129	51	6	2	0	0	0	0	0	0	397	35	38
21:00	16	10	26	46	92	36	14	2	0	0	0	0	0	0	242	36	40
22:00	5	5	22	49	66	41	23	1	0	0	0	0	0	0	212	39	42
23:00	1	5	14	14	31	34	14	3	0	0	0	0	0	0	116	40	43
Total	712	468	1224	1769	1676	760	204	42	4	6	2	0	0	1	6868		
Percent	10.4%	6.8%	17.8%	25.8%	24.4%	11.1%	3.0%	0.6%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	07:00	11:00	08:00	09:00	10:00	04:00	05:00	00:00	02:00	06:00			04:00	11:00		
Vol.	53	29	82	108	90	41	10	7	1	1	1			1	383		
PM Peak	15:00	12:00	16:00	16:00	16:00	19:00	22:00	23:00		14:00	17:00				16:00		
Vol.	69	50	111	165	135	61	23	3		1	1				549		

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/07/15	1	2	7	11	15	18	12	1	1	0	0	0	0	0	68	41	43
01:00	0	2	2	4	13	10	7	2	1	0	0	0	0	0	41	41	45
02:00	0	0	3	5	7	12	5	2	0	0	0	0	0	0	34	42	45
03:00	2	0	4	2	4	5	2	4	0	0	0	0	0	0	23	45	47
04:00	2	1	6	8	6	13	7	3	1	0	0	0	0	0	47	42	46
05:00	3	2	9	8	10	29	8	2	0	0	0	0	0	0	71	40	43
06:00	15	7	17	30	45	42	12	6	0	0	0	0	0	0	174	38	43
07:00	48	10	39	83	75	47	18	4	0	0	0	0	0	0	324	36	41
08:00	53	26	76	66	84	26	6	2	0	0	0	0	0	0	339	33	37
09:00	36	18	65	82	111	40	7	2	2	0	0	0	0	0	363	34	38
10:00	53	40	72	68	95	36	7	1	0	0	0	0	0	0	372	33	37
11:00	45	24	69	116	103	50	14	2	0	0	0	0	0	0	423	35	39
12 PM	52	34	73	101	85	39	7	0	1	0	0	0	0	0	392	33	37
13:00	40	16	59	105	121	45	16	6	0	1	0	0	0	0	409	35	40
14:00	58	30	76	120	125	39	11	0	0	0	0	0	0	0	459	34	38
15:00	75	42	146	147	96	26	4	0	0	0	0	0	0	0	536	31	35
16:00	93	51	131	132	93	42	4	0	0	0	0	0	0	0	546	32	36
17:00	70	33	116	178	127	41	9	3	1	0	0	0	0	0	578	33	37
18:00	42	37	85	135	124	55	9	1	0	0	0	0	0	0	488	34	38
19:00	30	31	69	93	127	67	19	3	0	0	0	0	0	0	439	36	40
20:00	19	24	51	87	136	44	9	0	0	0	0	0	0	0	370	35	38
21:00	23	10	30	73	95	48	7	4	0	0	0	0	0	0	290	36	39
22:00	5	12	21	59	80	42	12	9	0	0	0	0	0	0	240	38	43
23:00	7	4	21	25	29	36	17	6	1	1	0	0	0	0	147	40	45
Total	772	456	1247	1738	1806	852	229	63	8	2	0	0	0	0	7173		
Percent	10.8%	6.4%	17.4%	24.2%	25.2%	11.9%	3.2%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	08:00	11:00	09:00	11:00	07:00	06:00	09:00						11:00		
Vol.	53	40	76	116	111	50	18	6	2						423		
PM Peak	16:00	16:00	15:00	17:00	20:00	19:00	19:00	22:00	12:00	13:00					17:00		
Vol.	93	51	146	178	136	67	19	9	1	1					578		
Total	2206	1418	3815	5238	5148	2440	630	154	19	13	3	0	0	1	21085		
Percent	10.5%	6.7%	18.1%	24.8%	24.4%	11.6%	3.0%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 11 MPH
 50th Percentile : 26 MPH
 85th Percentile : 35 MPH
 95th Percentile : 39 MPH

Stats
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 8909
 Percent in Pace : 42.3%
 Number of Vehicles > 40 MPH : 927
 Percent of Vehicles > 40 MPH : 4.4%
 Mean Speed(Average) : 26 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedata.com or 1.413.668.5094

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th Percent	95th Percent	
05/05/15	1	6	18	27	23	22	13	4	0	0	0	0	0	0	114	40	44
01:00	1	2	14	12	11	12	5	7	0	0	0	0	0	0	64	42	48
02:00	0	8	7	14	7	8	5	0	0	0	0	0	0	0	49	38	42
03:00	0	4	12	8	13	5	0	0	1	0	0	0	0	0	43	34	37
04:00	2	3	6	15	20	14	6	3	1	1	1	0	0	0	72	39	44
05:00	9	18	37	70	50	30	5	3	0	0	0	0	0	0	222	35	39
06:00	37	59	168	120	72	38	20	2	0	1	0	0	0	0	517	33	39
07:00	251	112	177	118	72	30	8	4	0	0	0	0	0	0	772	28	34
08:00	327	109	172	83	50	13	3	2	0	0	0	0	0	0	759	24	31
09:00	144	144	194	160	93	23	7	1	0	0	0	0	0	0	766	29	34
10:00	81	139	239	177	92	42	2	0	1	0	0	0	0	0	773	30	35
11:00	154	136	215	201	71	43	8	3	0	0	0	0	0	0	831	29	35
12 PM	110	109	226	199	109	43	7	1	1	0	0	0	0	0	805	30	35
13:00	136	128	225	202	126	46	10	1	0	0	0	0	0	0	874	31	35
14:00	175	104	251	203	115	44	8	1	0	0	0	0	0	0	901	30	35
15:00	268	118	148	146	85	22	4	0	0	0	0	0	0	0	791	28	33
16:00	178	157	223	200	118	33	8	2	0	1	0	0	0	0	920	30	34
17:00	144	120	281	240	198	46	14	1	0	0	0	0	0	0	1044	31	35
18:00	74	94	219	213	142	88	11	2	1	1	0	0	0	0	845	33	37
19:00	57	80	190	202	122	57	7	3	1	0	0	0	0	0	719	32	37
20:00	59	76	194	168	117	43	8	1	0	0	0	0	0	0	666	32	36
21:00	36	60	94	139	89	54	15	1	1	1	0	0	0	0	490	34	39
22:00	8	36	81	80	57	56	10	5	0	0	0	0	0	0	333	36	40
23:00	12	22	48	54	57	33	14	3	0	0	0	0	0	0	243	36	41
Total	2264	1844	3439	3051	1909	845	198	50	7	5	1	0	0	0	13613		
Percent	16.6%	13.5%	25.3%	22.4%	14.0%	6.2%	1.5%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	09:00	10:00	11:00	09:00	11:00	06:00	10:00	11:00	03:00	04:00	04:00			11:00		
Vol.	327	144	239	201	93	43	20	7	1	1	1				831		
PM Peak	15:00	16:00	17:00	17:00	17:00	18:00	21:00	22:00	12:00	16:00					17:00		
Vol.	268	157	281	240	198	88	15	5	1	1					1044		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	0	14	12	25	25	22	8	6	1	0	0	0	0	0	113	39	45
01:00	0	6	12	8	11	10	7	1	0	0	0	0	0	0	55	39	43
02:00	0	3	5	12	10	12	3	1	0	1	0	0	0	0	47	38	41
03:00	0	1	4	11	4	6	2	1	1	0	0	0	0	0	30	37	40
04:00	0	4	6	20	20	11	12	3	0	1	0	0	0	1	78	40	44
05:00	6	7	34	70	55	25	5	7	1	0	0	0	0	0	210	36	41
06:00	23	36	114	180	77	33	10	3	0	0	1	0	0	0	477	32	38
07:00	278	131	117	93	72	28	9	0	0	0	0	0	0	0	728	27	34
08:00	198	130	193	157	80	22	7	0	0	0	0	0	0	0	787	28	33
09:00	131	96	192	174	100	40	8	1	0	0	0	0	0	0	742	30	35
10:00	106	104	185	186	97	42	10	3	1	0	0	0	0	0	734	31	36
11:00	152	128	212	153	84	34	5	1	0	0	0	0	0	0	769	29	34
12 PM	210	144	202	176	75	22	3	1	0	0	0	0	0	0	833	28	32
13:00	212	115	169	183	100	29	1	1	0	0	0	0	0	0	810	29	34
14:00	108	94	245	194	115	54	17	2	0	1	0	0	0	0	830	31	37
15:00	259	122	207	197	106	39	1	0	0	0	0	0	0	0	931	29	34
16:00	260	109	192	199	143	41	4	0	0	1	0	0	0	0	949	30	34
17:00	273	115	192	199	126	32	9	0	0	1	1	0	0	0	948	29	34
18:00	132	105	244	215	130	45	10	1	0	1	0	0	0	0	883	31	35
19:00	63	105	188	186	110	61	18	2	0	0	0	0	0	0	733	32	38
20:00	61	88	180	196	138	51	6	2	0	0	0	0	0	0	722	32	36
21:00	23	45	107	118	101	36	14	3	0	0	0	0	0	0	447	34	38
22:00	15	43	68	102	85	42	23	1	0	0	0	0	0	0	379	35	40
23:00	3	21	37	46	41	35	14	3	0	0	0	0	0	0	200	37	42
Total	2513	1766	3117	3100	1905	772	206	43	4	6	2	0	0	1	13435		
Percent	18.7%	13.1%	23.2%	23.1%	14.2%	5.7%	1.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	11:00	10:00	09:00	10:00	04:00	05:00	10:00	02:00	06:00			04:00	08:00		
Vol.	278	131	212	186	100	42	12	7	1	1	1			1	787		
PM Peak	17:00	12:00	14:00	18:00	16:00	19:00	22:00	21:00		14:00	17:00				16:00		
Vol.	273	144	245	215	143	61	23	3		1	1				949		

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/07/15	2	7	19	35	18	18	12	1	1	0	0	0	0	0	0	113	38	42
01:00	0	6	5	11	18	11	7	2	1	0	0	0	0	0	0	61	39	44
02:00	0	3	9	22	14	12	5	2	0	0	0	0	0	0	0	67	38	43
03:00	2	4	11	10	7	6	2	4	0	0	0	0	0	0	0	46	39	46
04:00	3	3	10	27	23	14	7	3	1	0	0	0	0	0	0	91	37	43
05:00	7	13	28	67	50	34	8	2	0	0	0	0	0	0	0	209	36	40
06:00	31	32	108	167	91	45	12	6	0	0	0	0	0	0	0	492	34	39
07:00	195	83	145	166	90	49	18	4	0	0	0	0	0	0	0	750	31	37
08:00	252	124	181	90	84	26	6	2	0	0	0	0	0	0	0	765	27	34
09:00	110	98	227	157	116	41	7	2	2	0	0	0	0	0	0	760	31	35
10:00	144	121	196	146	104	37	7	1	0	0	0	0	0	0	0	756	30	35
11:00	118	87	190	219	118	50	14	2	0	0	0	0	0	0	0	798	31	36
12 PM	164	144	209	163	90	39	7	0	1	0	0	0	0	0	0	817	29	35
13:00	85	83	198	227	135	46	16	6	0	1	0	0	0	0	0	797	32	37
14:00	188	135	196	180	130	39	11	0	0	0	0	0	0	0	0	879	30	35
15:00	227	130	243	176	100	26	4	0	0	0	0	0	0	0	0	906	28	33
16:00	222	152	255	179	100	42	4	0	0	0	0	0	0	0	0	954	29	34
17:00	212	116	224	245	132	41	9	3	1	0	0	0	0	0	0	983	30	35
18:00	104	127	236	218	131	56	9	1	0	0	0	0	0	0	0	882	31	36
19:00	77	111	180	182	147	69	19	3	0	0	0	0	0	0	0	788	33	38
20:00	49	97	160	168	140	45	9	0	0	0	0	0	0	0	0	668	32	36
21:00	43	55	104	160	117	48	7	4	0	0	0	0	0	0	0	538	33	37
22:00	13	52	80	122	95	44	12	9	0	0	0	0	0	0	0	427	35	40
23:00	11	12	49	66	40	39	18	6	1	1	0	0	0	0	0	243	38	43
Total	2259	1795	3263	3203	2090	877	230	63	8	2	0	0	0	0	0	13790		
Percent	16.4%	13.0%	23.7%	23.2%	15.2%	6.4%	1.7%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	09:00	11:00	11:00	11:00	07:00	06:00	09:00							11:00		
Vol.	252	124	227	219	118	50	18	6	2							798		
PM Peak	15:00	16:00	16:00	17:00	19:00	19:00	19:00	22:00	12:00	13:00						17:00		
Vol.	227	152	255	245	147	69	19	9	1	1						983		
Total	7036	5405	9819	9354	5904	2494	634	156	19	13	3	0	0	1	40838			
Percent	17.2%	13.2%	24.0%	22.9%	14.5%	6.1%	1.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 8 MPH
 50th Percentile : 21 MPH
 85th Percentile : 31 MPH
 95th Percentile : 36 MPH

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 15140
 Percent in Pace : 37.1%
 Number of Vehicles > 40 MPH : 871
 Percent of Vehicles > 40 MPH : 2.1%
 Mean Speed(Average) : 21 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	43	5	0	0	0	0	1	0	0	0	0	0	1	50
01:00	0	21	1	0	0	0	0	0	1	0	0	0	0	0	23
02:00	0	25	2	0	0	1	0	0	0	0	0	0	0	0	28
03:00	0	16	1	0	0	0	0	0	0	0	0	0	0	0	17
04:00	0	37	2	0	0	0	0	0	0	0	0	0	0	0	39
05:00	1	122	19	2	0	0	0	0	0	0	0	0	0	5	149
06:00	3	258	39	7	2	2	0	4	1	0	0	0	0	9	325
07:00	9	320	28	2	2	1	0	1	0	0	0	1	0	79	443
08:00	13	282	19	2	3	1	0	1	0	1	0	0	0	97	419
09:00	5	313	32	3	3	1	0	4	0	0	0	0	0	40	401
10:00	1	318	32	3	3	0	0	2	1	0	0	0	0	26	386
11:00	7	321	18	3	7	4	0	3	1	0	0	0	0	50	414
12 PM	6	340	32	3	1	1	0	1	0	0	1	0	0	23	408
13:00	3	328	27	3	2	2	0	0	0	0	0	0	0	46	411
14:00	4	355	15	3	4	3	0	0	2	0	0	0	0	49	435
15:00	7	253	14	1	2	2	0	0	0	0	0	0	0	76	355
16:00	6	298	21	3	1	2	0	0	1	0	0	0	0	55	387
17:00	6	353	18	3	1	2	0	0	0	0	0	0	0	59	442
18:00	3	314	16	2	2	2	0	0	0	0	0	0	0	24	363
19:00	5	268	13	1	0	0	0	0	2	0	0	0	0	21	310
20:00	2	246	10	0	1	0	0	1	1	0	0	0	0	20	281
21:00	0	200	5	2	1	1	0	0	0	0	0	0	0	11	220
22:00	2	141	9	0	0	1	0	0	0	0	0	0	0	3	156
23:00	0	100	2	0	0	0	0	0	0	0	0	0	0	5	107
Total	83	5272	380	43	35	26	0	18	10	1	1	1	0	699	6569
Percent	1.3%	80.3%	5.8%	0.7%	0.5%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	10.6%	
AM Peak	08:00	11:00	06:00	06:00	11:00	11:00		06:00	01:00	08:00		07:00		08:00	
Vol.	13	321	39	7	7	4		4	1	1		1		97	
PM Peak	15:00	14:00	12:00	12:00	14:00	14:00		12:00	14:00		12:00			15:00	
Vol.	7	355	32	3	4	3		1	2		1			76	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	37	0	0	0	0	0	0	0	0	0	0	0	0	38
01:00	0	21	0	0	0	0	0	0	1	0	0	0	0	0	22
02:00	0	18	2	0	0	0	0	0	0	0	0	0	0	0	20
03:00	0	14	2	0	0	0	0	0	0	0	0	0	0	0	16
04:00	1	30	3	0	0	0	0	0	0	0	0	0	0	0	34
05:00	2	115	15	3	1	1	0	0	0	0	0	0	0	2	139
06:00	3	247	40	8	1	0	0	0	0	0	0	0	0	10	309
07:00	7	294	24	3	2	2	0	1	0	0	0	0	0	87	420
08:00	7	338	28	4	3	1	0	1	0	0	0	0	0	58	440
09:00	6	296	26	3	3	3	0	2	3	0	0	0	0	41	383
10:00	10	312	30	3	3	1	0	3	1	0	0	0	0	18	381
11:00	1	298	35	5	5	1	0	2	0	0	0	0	0	39	386
12 PM	4	301	36	3	0	3	0	0	0	0	0	0	0	62	409
13:00	2	313	28	3	2	2	0	2	1	0	0	0	0	72	425
14:00	6	308	26	4	2	1	0	0	0	0	0	0	0	35	382
15:00	7	295	19	1	3	3	1	1	0	0	0	0	0	93	423
16:00	7	273	13	3	1	2	0	0	0	0	0	0	0	101	400
17:00	8	283	16	1	0	0	0	1	0	0	1	1	0	115	426
18:00	4	350	16	3	1	0	0	1	1	0	0	0	0	43	419
19:00	2	280	9	1	0	1	0	0	1	0	0	0	0	20	314
20:00	6	293	8	1	1	0	0	1	0	0	0	0	0	15	325
21:00	0	193	5	2	1	1	0	0	0	0	0	0	0	3	205
22:00	1	158	4	0	1	0	0	0	0	0	0	0	0	3	167
23:00	1	80	1	0	1	0	0	0	0	0	0	0	0	1	84
Total	86	5147	386	51	31	22	1	15	8	0	1	1	0	818	6567
Percent	1.3%	78.4%	5.9%	0.8%	0.5%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	12.5%	
AM Peak	10:00	08:00	06:00	06:00	11:00	09:00		10:00	09:00					07:00	
Vol.	10	338	40	8	5	3		3	3					87	
PM Peak	17:00	18:00	12:00	14:00	15:00	12:00	15:00	13:00	13:00		17:00	17:00		17:00	
Vol.	8	350	36	4	3	3	1	2	1		1	1		115	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	1	42	1	0	0	0	0	0	0	0	0	0	0	1	45
01:00	0	17	1	0	0	0	0	1	1	0	0	0	0	0	20
02:00	0	30	1	0	1	0	0	0	1	0	0	0	0	0	33
03:00	0	17	2	1	0	0	0	0	3	0	0	0	0	0	23
04:00	0	36	7	0	0	1	0	0	0	0	0	0	0	0	44
05:00	1	116	17	1	1	0	0	1	0	0	0	0	0	1	138
06:00	1	252	41	8	2	0	0	2	1	0	0	0	0	11	318
07:00	8	309	24	2	2	4	0	1	1	0	0	0	0	75	426
08:00	5	305	24	2	2	3	0	2	0	0	0	0	0	83	426
09:00	5	312	24	2	5	2	0	0	1	0	0	0	0	46	397
10:00	3	300	23	4	4	2	1	0	1	0	0	0	0	46	384
11:00	3	299	28	3	4	2	0	1	0	0	0	0	0	35	375
12 PM	7	342	15	2	0	2	0	4	3	0	0	0	0	50	425
13:00	6	324	22	4	1	0	0	1	0	0	0	0	0	30	388
14:00	11	319	17	7	2	3	0	1	1	0	0	0	0	59	420
15:00	11	260	20	3	1	1	0	1	0	0	0	0	0	73	370
16:00	8	303	21	2	0	1	1	0	0	0	0	0	0	72	408
17:00	11	285	18	2	1	4	0	0	0	0	0	0	0	84	405
18:00	6	332	17	3	1	1	0	0	2	0	0	0	0	32	394
19:00	2	305	7	0	1	1	0	0	1	0	0	0	0	32	349
20:00	2	262	14	0	1	0	0	0	0	0	0	0	0	19	298
21:00	5	217	9	1	1	0	0	0	0	0	0	0	0	15	248
22:00	2	173	5	0	1	0	0	1	0	0	0	0	0	5	187
23:00	0	94	0	0	0	0	0	0	0	0	0	0	0	2	96
Total	98	5251	358	47	31	27	2	16	16	0	0	0	0	771	6617
Percent	1.5%	79.4%	5.4%	0.7%	0.5%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	11.7%	
AM Peak	07:00	09:00	06:00	06:00	09:00	07:00	10:00	06:00	03:00					08:00	
Vol.	8	312	41	8	5	4	1	2	3					83	
PM Peak	14:00	12:00	13:00	14:00	14:00	17:00	16:00	12:00	12:00					17:00	
Vol.	11	342	22	7	2	4	1	4	3					84	
Grand Total	267	15670	1124	141	97	75	3	49	34	1	2	2	0	2288	19753
Percent	1.4%	79.3%	5.7%	0.7%	0.5%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	11.6%	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	34	24	0	4	0	0	1	1	0	0	0	0	0	64
01:00	1	14	24	0	1	0	0	0	1	0	0	0	0	0	41
02:00	0	6	13	0	2	0	0	0	0	0	0	0	0	0	21
03:00	0	14	10	0	1	0	0	1	0	0	0	0	0	0	26
04:00	1	7	21	1	2	0	0	0	0	0	0	0	0	1	33
05:00	0	26	31	4	6	1	0	1	2	0	0	0	0	2	73
06:00	0	77	72	7	18	1	0	1	0	0	0	0	0	16	192
07:00	4	153	100	3	20	2	0	1	0	0	0	0	0	46	329
08:00	4	190	72	3	15	5	0	1	0	0	0	0	0	50	340
09:00	4	189	95	5	34	1	0	1	1	0	0	0	0	35	365
10:00	3	209	111	3	30	6	0	2	2	0	0	0	0	21	387
11:00	3	211	122	4	31	0	0	4	1	0	0	0	0	41	417
12 PM	2	201	132	4	23	0	0	0	2	0	0	0	0	33	397
13:00	5	251	141	5	18	0	0	2	1	0	0	0	0	40	463
14:00	8	252	118	4	27	3	0	3	1	0	0	0	0	50	466
15:00	5	242	91	8	21	1	1	3	0	0	0	0	0	64	436
16:00	6	330	110	1	23	1	0	3	0	0	0	0	0	59	533
17:00	12	370	150	1	22	0	0	4	0	0	0	0	0	43	602
18:00	4	278	150	1	15	0	0	0	3	0	0	0	0	31	482
19:00	6	250	123	1	9	0	0	1	0	0	0	0	0	19	409
20:00	4	242	105	2	8	1	0	0	0	0	0	0	0	23	385
21:00	1	141	101	2	13	0	0	0	0	0	0	0	0	12	270
22:00	2	97	63	0	11	0	0	0	0	0	0	0	0	4	177
23:00	0	70	55	0	4	0	0	0	0	0	0	0	0	7	136
Total	75	3854	2034	59	358	22	1	29	15	0	0	0	0	597	7044
Percent	1.1%	54.7%	28.9%	0.8%	5.1%	0.3%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	8.5%	
AM Peak	07:00	11:00	11:00	06:00	09:00	10:00		11:00	05:00					08:00	
Vol.	4	211	122	7	34	6		4	2					50	
PM Peak	17:00	17:00	17:00	15:00	14:00	14:00	15:00	17:00	18:00					15:00	
Vol.	12	370	150	8	27	3	1	4	3					64	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	36	35	1	2	0	0	0	1	0	0	0	0	0	75
01:00	0	14	16	0	2	0	0	0	0	0	0	0	1	0	33
02:00	0	14	10	0	3	0	0	0	0	0	0	0	0	0	27
03:00	0	4	9	0	1	0	0	0	0	0	0	0	0	0	14
04:00	1	14	25	1	3	0	0	0	0	0	0	0	0	0	44
05:00	0	32	26	4	7	0	0	0	0	0	0	0	0	2	71
06:00	2	75	63	4	10	2	0	0	1	0	0	0	0	11	168
07:00	3	172	63	4	12	5	0	3	1	0	0	0	0	45	308
08:00	5	176	98	3	29	0	0	3	1	0	0	0	0	32	347
09:00	7	177	100	3	29	3	0	4	0	0	0	0	0	36	359
10:00	4	179	99	2	21	3	0	2	1	1	0	0	0	41	353
11:00	2	199	108	3	22	5	0	1	1	0	0	0	0	42	383
12 PM	7	241	98	3	16	2	0	4	1	0	0	0	0	52	424
13:00	6	213	96	5	21	1	1	1	0	0	0	0	0	41	385
14:00	4	262	120	4	19	3	0	1	0	1	0	0	0	34	448
15:00	6	302	112	7	19	2	0	2	0	0	0	0	0	58	508
16:00	5	350	114	3	24	5	0	0	1	0	1	0	0	46	549
17:00	10	328	103	3	23	1	0	4	0	0	0	0	0	50	522
18:00	8	265	131	1	19	1	0	0	1	0	0	0	0	38	464
19:00	3	263	110	1	14	2	0	1	0	0	0	0	0	25	419
20:00	2	246	103	0	17	1	0	1	0	0	0	0	0	27	397
21:00	2	134	82	1	8	0	0	0	0	0	0	0	0	15	242
22:00	0	112	86	0	8	0	0	0	0	0	0	0	0	6	212
23:00	1	60	48	0	5	0	0	0	1	0	0	0	0	1	116
Total	78	3868	1855	53	334	36	1	27	10	2	1	0	1	602	6868
Percent	1.1%	56.3%	27.0%	0.8%	4.9%	0.5%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	8.8%	
AM Peak	09:00	11:00	11:00	05:00	08:00	07:00		09:00	00:00	10:00			01:00	07:00	
Vol.	7	199	108	4	29	5		4	1	1			1	45	
PM Peak	17:00	16:00	18:00	15:00	16:00	16:00	13:00	12:00	12:00	14:00	16:00			15:00	
Vol.	10	350	131	7	24	5	1	4	1	1	1			58	

Innovative Data, LLC

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.llc.com or 1.413.668.5094

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	37	27	0	3	0	0	1	0	0	0	0	0	0	68
01:00	0	23	17	0	0	0	0	0	0	0	0	0	0	1	41
02:00	0	13	18	1	1	0	0	0	1	0	0	0	0	0	34
03:00	0	9	11	0	2	0	0	0	0	0	0	0	0	1	23
04:00	0	22	21	1	1	0	0	0	0	0	0	0	0	2	47
05:00	0	25	31	3	6	0	0	0	2	0	0	0	0	4	71
06:00	0	69	66	6	16	0	0	2	0	1	0	0	0	14	174
07:00	2	153	100	3	16	2	1	2	1	0	0	0	0	44	324
08:00	6	177	84	4	21	1	0	1	0	0	0	0	0	45	339
09:00	2	190	104	6	21	3	0	2	0	1	0	0	0	34	363
10:00	6	174	118	3	23	1	0	2	2	1	0	0	0	42	372
11:00	3	226	125	3	22	4	0	0	0	0	0	0	1	39	423
12 PM	5	205	124	1	13	0	0	1	1	0	0	0	1	41	392
13:00	4	200	138	2	24	3	1	2	0	0	0	0	0	35	409
14:00	7	256	111	6	26	1	1	3	0	0	0	0	0	48	459
15:00	8	307	126	5	20	4	1	2	1	0	0	0	0	62	536
16:00	6	327	106	5	27	1	0	0	2	0	0	0	0	72	546
17:00	9	354	130	3	24	0	0	3	0	0	1	0	0	54	578
18:00	0	292	135	2	22	0	0	2	0	1	0	0	0	34	488
19:00	8	262	131	1	11	1	0	0	0	0	0	0	0	25	439
20:00	4	226	110	1	9	0	0	1	0	0	0	0	0	19	370
21:00	3	168	86	2	12	1	0	0	0	0	0	0	0	18	290
22:00	4	143	77	0	11	0	0	1	0	0	0	0	0	4	240
23:00	1	86	47	0	6	0	0	0	0	1	0	0	0	6	147
Total	78	3944	2043	58	337	22	4	25	10	5	1	0	2	644	7173
Percent	1.1%	55.0%	28.5%	0.8%	4.7%	0.3%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	9.0%	
AM Peak	08:00	11:00	11:00	06:00	10:00	11:00	07:00	06:00	05:00	06:00			11:00	08:00	
Vol.	6	226	125	6	23	4	1	2	2	1			1	45	
PM Peak	17:00	17:00	13:00	14:00	16:00	15:00	13:00	14:00	16:00	18:00	17:00		12:00	16:00	
Vol.	9	354	138	6	27	4	1	3	2	1	1		1	72	
Grand Total	231	11666	5932	170	1029	80	6	81	35	7	2	0	3	1843	21085
Percent	1.1%	55.3%	28.1%	0.8%	4.9%	0.4%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	8.7%	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	77	29	0	4	0	0	2	1	0	0	0	0	1	114
01:00	1	35	25	0	1	0	0	0	2	0	0	0	0	0	64
02:00	0	31	15	0	2	1	0	0	0	0	0	0	0	0	49
03:00	0	30	11	0	1	0	0	1	0	0	0	0	0	0	43
04:00	1	44	23	1	2	0	0	0	0	0	0	0	0	1	72
05:00	1	148	50	6	6	1	0	1	2	0	0	0	0	7	222
06:00	3	335	111	14	20	3	0	5	1	0	0	0	0	25	517
07:00	13	473	128	5	22	3	0	2	0	0	0	1	0	125	772
08:00	17	472	91	5	18	6	0	2	0	1	0	0	0	147	759
09:00	9	502	127	8	37	2	0	5	1	0	0	0	0	75	766
10:00	4	527	143	6	33	6	0	4	3	0	0	0	0	47	773
11:00	10	532	140	7	38	4	0	7	2	0	0	0	0	91	831
12 PM	8	541	164	7	24	1	0	1	2	0	1	0	0	56	805
13:00	8	579	168	8	20	2	0	2	1	0	0	0	0	86	874
14:00	12	607	133	7	31	6	0	3	3	0	0	0	0	99	901
15:00	12	495	105	9	23	3	1	3	0	0	0	0	0	140	791
16:00	12	628	131	4	24	3	0	3	1	0	0	0	0	114	920
17:00	18	723	168	4	23	2	0	4	0	0	0	0	0	102	1044
18:00	7	592	166	3	17	2	0	0	3	0	0	0	0	55	845
19:00	11	518	136	2	9	0	0	1	2	0	0	0	0	40	719
20:00	6	488	115	2	9	1	0	1	1	0	0	0	0	43	666
21:00	1	341	106	4	14	1	0	0	0	0	0	0	0	23	490
22:00	4	238	72	0	11	1	0	0	0	0	0	0	0	7	333
23:00	0	170	57	0	4	0	0	0	0	0	0	0	0	12	243
Total	158	9126	2414	102	393	48	1	47	25	1	1	1	0	1296	13613
Percent	1.2%	67.0%	17.7%	0.7%	2.9%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	9.5%	
AM Peak	08:00	11:00	10:00	06:00	11:00	08:00		11:00	10:00	08:00		07:00		08:00	
Vol.	17	532	143	14	38	6		7	3	1		1		147	
PM Peak	17:00	17:00	13:00	15:00	14:00	14:00	15:00	17:00	14:00		12:00			15:00	
Vol.	18	723	168	9	31	6	1	4	3		1			140	

Innovative Data, LLC

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Location: Belmont Avenue

Location: between Sumner & Ormond

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	73	35	1	2	0	0	0	1	0	0	0	0	0	113
01:00	0	35	16	0	2	0	0	0	1	0	0	0	1	0	55
02:00	0	32	12	0	3	0	0	0	0	0	0	0	0	0	47
03:00	0	18	11	0	1	0	0	0	0	0	0	0	0	0	30
04:00	2	44	28	1	3	0	0	0	0	0	0	0	0	0	78
05:00	2	147	41	7	8	1	0	0	0	0	0	0	0	4	210
06:00	5	322	103	12	11	2	0	0	1	0	0	0	0	21	477
07:00	10	466	87	7	14	7	0	4	1	0	0	0	0	132	728
08:00	12	514	126	7	32	1	0	4	1	0	0	0	0	90	787
09:00	13	473	126	6	32	6	0	6	3	0	0	0	0	77	742
10:00	14	491	129	5	24	4	0	5	2	1	0	0	0	59	734
11:00	3	497	143	8	27	6	0	3	1	0	0	0	0	81	769
12 PM	11	542	134	6	16	5	0	4	1	0	0	0	0	114	833
13:00	8	526	124	8	23	3	1	3	1	0	0	0	0	113	810
14:00	10	570	146	8	21	4	0	1	0	1	0	0	0	69	830
15:00	13	597	131	8	22	5	1	3	0	0	0	0	0	151	931
16:00	12	623	127	6	25	7	0	0	1	0	1	0	0	147	949
17:00	18	611	119	4	23	1	0	5	0	0	1	1	0	165	948
18:00	12	615	147	4	20	1	0	1	2	0	0	0	0	81	883
19:00	5	543	119	2	14	3	0	1	1	0	0	0	0	45	733
20:00	8	539	111	1	18	1	0	2	0	0	0	0	0	42	722
21:00	2	327	87	3	9	1	0	0	0	0	0	0	0	18	447
22:00	1	270	90	0	9	0	0	0	0	0	0	0	0	9	379
23:00	2	140	49	0	6	0	0	0	1	0	0	0	0	2	200
Total	164	9015	2241	104	365	58	2	42	18	2	2	1	1	1420	13435
Percent	1.2%	67.1%	16.7%	0.8%	2.7%	0.4%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	10.6%	
AM Peak	10:00	08:00	11:00	06:00	08:00	07:00		09:00	09:00	10:00			01:00	07:00	
Vol.	14	514	143	12	32	7		6	3	1			1	132	
PM Peak	17:00	16:00	18:00	13:00	16:00	16:00	13:00	17:00	18:00	14:00	16:00	17:00		17:00	
Vol.	18	623	147	8	25	7	1	5	2	1	1	1		165	

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Location: Belmont Avenue
 Location: between Sumner & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	1	79	28	0	3	0	0	1	0	0	0	0	0	1	113
01:00	0	40	18	0	0	0	0	1	1	0	0	0	0	1	61
02:00	0	43	19	1	2	0	0	0	2	0	0	0	0	0	67
03:00	0	26	13	1	2	0	0	0	3	0	0	0	0	1	46
04:00	0	58	28	1	1	1	0	0	0	0	0	0	0	2	91
05:00	1	141	48	4	7	0	0	1	2	0	0	0	0	5	209
06:00	1	321	107	14	18	0	0	4	1	1	0	0	0	25	492
07:00	10	462	124	5	18	6	1	3	2	0	0	0	0	119	750
08:00	11	482	108	6	23	4	0	3	0	0	0	0	0	128	765
09:00	7	502	128	8	26	5	0	2	1	1	0	0	0	80	760
10:00	9	474	141	7	27	3	1	2	3	1	0	0	0	88	756
11:00	6	525	153	6	26	6	0	1	0	0	0	0	1	74	798
12 PM	12	547	139	3	13	2	0	5	4	0	0	0	1	91	817
13:00	10	524	160	6	25	3	1	3	0	0	0	0	0	65	797
14:00	18	575	128	13	28	4	1	4	1	0	0	0	0	107	879
15:00	19	567	146	8	21	5	1	3	1	0	0	0	0	135	906
16:00	14	630	127	7	27	2	1	0	2	0	0	0	0	144	954
17:00	20	639	148	5	25	4	0	3	0	0	1	0	0	138	983
18:00	6	624	152	5	23	1	0	2	2	1	0	0	0	66	882
19:00	10	567	138	1	12	2	0	0	1	0	0	0	0	57	788
20:00	6	488	124	1	10	0	0	1	0	0	0	0	0	38	668
21:00	8	385	95	3	13	1	0	0	0	0	0	0	0	33	538
22:00	6	316	82	0	12	0	0	2	0	0	0	0	0	9	427
23:00	1	180	47	0	6	0	0	0	0	1	0	0	0	8	243
Total	176	9195	2401	105	368	49	6	41	26	5	1	0	2	1415	13790
Percent	1.3%	66.7%	17.4%	0.8%	2.7%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	10.3%	
AM Peak	08:00	11:00	11:00	06:00	10:00	07:00	07:00	06:00	03:00	06:00			11:00	08:00	
Vol.	11	525	153	14	27	6	1	4	3	1			1	128	
PM Peak	17:00	17:00	13:00	14:00	14:00	15:00	13:00	12:00	12:00	18:00	17:00		12:00	16:00	
Vol.	20	639	160	13	28	5	1	5	4	1	1		1	144	
Grand Total	498	27336	7056	311	1126	155	9	130	69	8	4	2	3	4131	40838
Percent	1.2%	66.9%	17.3%	0.8%	2.8%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	10.1%	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedatalc.com or 1.413.668.5094

Start Time	05-May-1 Tue	Northbound		Southbound		Combined		06-May Wed	Northbound		Southbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		10	57	7	61	17	118		8	68	8	69	16	137
12:15		14	68	13	70	27	138		6	64	11	50	17	114
12:30		5	77	4	54	9	131		8	80	5	54	13	134
12:45		5	59	2	57	7	116		6	60	7	63	13	123
01:00		5	67	1	70	6	137		7	60	4	66	11	126
01:15		3	58	14	66	17	124		9	69	7	63	16	132
01:30		6	64	1	62	7	126		4	65	3	60	7	125
01:45		5	69	4	53	9	122		1	57	3	60	4	117
02:00		4	61	3	72	7	133		3	71	5	60	8	131
02:15		2	64	1	72	3	136		4	72	1	62	5	134
02:30		6	77	1	66	7	143		3	52	3	77	6	129
02:45		5	70	2	57	7	127		5	71	1	55	6	126
03:00		1	52	3	50	4	102		0	67	1	62	1	129
03:15		2	61	3	46	5	107		2	65	2	57	4	122
03:30		5	66	3	75	8	141		0	71	2	64	2	135
03:45		3	48	5	50	8	98		1	66	6	69	7	135
04:00		3	41	2	55	5	96		3	54	8	48	11	102
04:15		4	52	3	73	7	125		2	64	1	74	3	138
04:30		5	59	6	66	11	125		2	60	2	65	4	125
04:45		5	52	4	74	9	126		6	49	3	63	9	112
05:00		9	51	3	63	12	114		8	55	3	75	11	130
05:15		8	51	5	63	13	114		9	51	4	60	13	111
05:30		14	49	11	60	25	109		11	68	15	78	26	146
05:45		10	45	9	66	19	111		15	57	15	67	30	124
06:00		18	57	15	49	33	106		15	42	14	44	29	86
06:15		33	49	24	62	57	111		17	49	27	60	44	109
06:30		49	70	32	60	81	130		47	58	31	65	78	123
06:45		53	58	35	46	88	104		50	67	34	50	84	117
07:00		57	41	23	54	80	95		53	55	32	48	85	103
07:15		84	44	34	50	118	94		74	53	27	61	101	114
07:30		74	44	40	50	114	94		73	54	52	55	125	109
07:45		83	59	46	56	129	115		70	66	42	54	112	120
08:00		94	57	40	64	134	121		93	46	52	61	145	107
08:15		72	54	47	57	119	111		98	64	53	43	151	107
08:30		76	57	56	39	132	96		100	51	65	52	165	103
08:45		102	40	45	45	147	85		93	33	49	49	142	82
09:00		86	39	46	45	132	84		71	46	52	44	123	90
09:15		76	50	54	36	130	86		75	43	50	37	125	80
09:30		65	42	57	32	122	74		64	32	43	43	107	75
09:45		50	29	60	36	110	65		63	28	56	26	119	54
10:00		60	38	47	26	107	64		60	27	44	24	104	51
10:15		66	29	42	20	108	49		62	36	40	27	102	63
10:30		67	22	57	30	124	52		58	31	56	33	114	64
10:45		62	29	64	24	126	53		59	37	54	22	113	59
11:00		55	38	56	19	111	57		54	27	58	24	112	51
11:15		68	27	51	24	119	51		69	17	69	18	138	35
11:30		55	19	60	16	115	35		68	16	63	11	131	27
11:45		70	10	65	13	135	23		60	16	59	12	119	28
Total		1714	2420	1206	2454	2920	4874		1669	2510	1242	2484	2911	4994
Day Total		4134		3660		7794			4179		3726		7905	
% Total		22.0%	31.0%	15.5%	31.5%				21.1%	31.8%	15.7%	31.4%		
Peak		08:00	02:00	11:00	04:15	08:30	02:00		08:00	02:45	11:00	05:00	08:00	03:00
Vol.		344	272	232	276	541	539		384	274	249	280	603	521
P.H.F.		0.843	0.883	0.892	0.932	0.920	0.942		0.960	0.856	0.902	0.897	0.914	0.965

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	07-May-1 Thu	Northbound		Southbound		Combined		08-May Fri	Northbound		Southbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		14	67	9	50	23	117		0	*	0	*	0	*
12:15		6	66	9	65	15	131		*	*	*	*	*	*
12:30		13	59	10	36	23	95		*	*	*	*	*	*
12:45		13	74	8	50	21	124		*	*	*	*	*	*
01:00		8	56	7	72	15	128		*	*	*	*	*	*
01:15		6	68	5	60	11	128		*	*	*	*	*	*
01:30		3	54	4	63	7	117		*	*	*	*	*	*
01:45		3	77	8	54	11	131		*	*	*	*	*	*
02:00		6	58	2	60	8	118		*	*	*	*	*	*
02:15		5	82	1	66	6	148		*	*	*	*	*	*
02:30		4	66	2	66	6	132		*	*	*	*	*	*
02:45		1	58	3	66	4	124		*	*	*	*	*	*
03:00		2	76	2	59	4	135		*	*	*	*	*	*
03:15		1	73	3	67	4	140		*	*	*	*	*	*
03:30		2	60	2	66	4	126		*	*	*	*	*	*
03:45		2	63	4	60	6	123		*	*	*	*	*	*
04:00		5	42	3	58	8	100		*	*	*	*	*	*
04:15		3	49	3	55	6	104		*	*	*	*	*	*
04:30		1	35	4	51	5	86		*	*	*	*	*	*
04:45		6	62	2	79	8	141		*	*	*	*	*	*
05:00		7	58	3	67	10	125		*	*	*	*	*	*
05:15		6	44	7	67	13	111		*	*	*	*	*	*
05:30		16	55	12	48	28	103		*	*	*	*	*	*
05:45		17	47	12	64	29	111		*	*	*	*	*	*
06:00		12	46	16	42	28	88		*	*	*	*	*	*
06:15		28	57	25	51	53	108		*	*	*	*	*	*
06:30		40	63	27	60	67	123		*	*	*	*	*	*
06:45		49	66	34	68	83	134		*	*	*	*	*	*
07:00		57	57	31	57	88	114		*	*	*	*	*	*
07:15		71	66	27	43	98	109		*	*	*	*	*	*
07:30		85	58	40	46	125	104		*	*	*	*	*	*
07:45		73	55	49	61	122	116		*	*	*	*	*	*
08:00		94	52	59	56	153	108		*	*	*	*	*	*
08:15		98	43	44	44	142	87		*	*	*	*	*	*
08:30		87	51	59	45	146	96		*	*	*	*	*	*
08:45		76	55	52	47	128	102		*	*	*	*	*	*
09:00		66	53	53	39	119	92		*	*	*	*	*	*
09:15		70	32	55	34	125	66		*	*	*	*	*	*
09:30		66	60	53	46	119	106		*	*	*	*	*	*
09:45		92	33	54	41	146	74		*	*	*	*	*	*
10:00		55	42	61	32	116	74		*	*	*	*	*	*
10:15		63	27	53	30	116	57		*	*	*	*	*	*
10:30		57	30	48	24	105	54		*	*	*	*	*	*
10:45		59	33	59	31	118	64		*	*	*	*	*	*
11:00		64	28	43	29	107	57		*	*	*	*	*	*
11:15		69	24	51	19	120	43		*	*	*	*	*	*
11:30		80	22	58	8	138	30		*	*	*	*	*	*
11:45		62	12	56	16	118	28		*	*	*	*	*	*
Total		1723	2514	1232	2418	2955	4932		0	0	0	0	0	0
Day Total		4237		3650		7887			0	0	0	0	0	0
% Total		21.8%	31.9%	15.6%	30.7%				0.0%	0.0%	0.0%	0.0%		
Peak		08:00	01:45	09:15	04:30	08:00	02:15							
Vol.		355	283	223	264	569	539							
P.H.F.		0.906	0.863	0.914	0.835	0.930	0.910							

ADT ADT 7,857 AADT 7,857

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

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 Belchertown, Massachusetts
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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	2	1	8	17	5	1	0	0	0	0	0	0	0	0	34	30	33
01:00	1	2	3	8	4	1	0	0	0	0	0	0	0	0	19	32	34
02:00	1	2	2	8	3	0	0	1	0	0	0	0	0	0	17	31	32
03:00	0	0	0	6	4	1	0	0	0	0	0	0	0	0	11	33	34
04:00	1	0	4	5	5	1	0	1	0	0	0	0	0	0	17	32	34
05:00	1	2	7	17	10	4	0	0	0	0	0	0	0	0	41	33	37
06:00	7	8	34	68	30	5	0	1	0	0	0	0	0	0	153	32	35
07:00	19	20	81	127	47	4	0	0	0	0	0	0	0	0	298	30	33
08:00	33	48	125	117	21	0	0	0	0	0	0	0	0	0	344	28	31
09:00	32	28	90	98	26	3	0	0	0	0	0	0	0	0	277	29	32
10:00	36	21	84	89	21	4	0	0	0	0	0	0	0	0	255	29	32
11:00	28	20	75	93	28	3	1	0	0	0	0	0	0	0	248	29	32
12 PM	40	34	85	74	25	3	0	0	0	0	0	0	0	0	261	28	32
13:00	28	24	68	110	25	3	0	0	0	0	0	0	0	0	258	29	32
14:00	39	42	88	81	21	1	0	0	0	0	0	0	0	0	272	28	31
15:00	47	32	69	67	8	4	0	0	0	0	0	0	0	0	227	27	30
16:00	36	22	57	72	14	3	0	0	0	0	0	0	0	0	204	28	31
17:00	53	19	54	61	8	1	0	0	0	0	0	0	0	0	196	27	30
18:00	24	30	68	85	22	4	1	0	0	0	0	0	0	0	234	29	32
19:00	21	18	62	59	22	4	0	2	0	0	0	0	0	0	188	29	33
20:00	19	20	86	71	11	1	0	0	0	0	0	0	0	0	208	28	31
21:00	11	13	47	66	20	3	0	0	0	0	0	0	0	0	160	30	33
22:00	6	9	26	61	13	3	0	0	0	0	0	0	0	0	118	30	33
23:00	3	1	27	36	25	2	0	0	0	0	0	0	0	0	94	32	34
Total	488	416	1250	1496	418	59	2	5	0	0	0	0	0	0	4134		
Percent	11.8%	10.1%	30.2%	36.2%	10.1%	1.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	08:00	08:00	07:00	07:00	06:00	11:00	02:00							08:00		
Vol.	36	48	125	127	47	5	1	1							344		
PM Peak	17:00	14:00	14:00	13:00	12:00	15:00	18:00	19:00							14:00		
Vol.	53	42	88	110	25	4	1	2							272		

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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	1	1	6	8	11	1	0	0	0	0	0	0	0	0	28	33	35
01:00	1	1	10	5	2	1	1	0	0	0	0	0	0	0	21	28	30
02:00	0	1	6	2	6	0	0	0	0	0	0	0	0	0	15	32	34
03:00	0	0	1	1	0	1	0	0	0	0	0	0	0	0	3	*	*
04:00	2	0	3	6	2	0	0	0	0	0	0	0	0	0	13	29	30
05:00	4	1	8	14	12	3	1	0	0	0	0	0	0	0	43	33	36
06:00	9	3	25	60	30	2	0	0	0	0	0	0	0	0	129	31	34
07:00	5	8	74	124	50	9	0	0	0	0	0	0	0	0	270	31	34
08:00	34	34	156	126	32	2	0	0	0	0	0	0	0	0	384	28	31
09:00	28	27	95	93	26	3	1	0	0	0	0	0	0	0	273	29	32
10:00	32	20	64	94	27	2	0	0	0	0	0	0	0	0	239	29	32
11:00	27	32	97	73	19	2	1	0	0	0	0	0	0	0	251	28	31
12 PM	44	48	104	62	12	2	0	0	0	0	0	0	0	0	272	27	30
13:00	48	42	102	47	12	0	0	0	0	0	0	0	0	0	251	26	30
14:00	48	55	91	63	9	0	0	0	0	0	0	0	0	0	266	26	29
15:00	45	31	99	71	23	0	0	0	0	0	0	0	0	0	269	28	31
16:00	47	42	66	59	11	2	0	0	0	0	0	0	0	0	227	27	30
17:00	62	35	70	50	12	2	0	0	0	0	0	0	0	0	231	26	30
18:00	31	43	64	60	15	2	0	1	0	0	0	0	0	0	216	28	31
19:00	26	26	93	60	21	2	0	0	0	0	0	0	0	0	228	28	32
20:00	23	33	72	53	11	1	0	1	0	0	0	0	0	0	194	28	31
21:00	17	17	53	46	15	1	0	0	0	0	0	0	0	0	149	29	32
22:00	12	14	43	50	12	0	0	0	0	0	0	0	0	0	131	29	31
23:00	3	5	23	32	10	1	2	0	0	0	0	0	0	0	76	30	33
Total	549	519	1425	1259	380	39	6	2	0	0	0	0	0	0	4179		
Percent	13.1%	12.4%	34.1%	30.1%	9.1%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	01:00									08:00	
Vol.	34	34	156	126	50	9	1									384	
PM Peak	17:00	14:00	12:00	15:00	15:00	12:00	23:00	18:00								12:00	
Vol.	62	55	104	71	23	2	2	1								272	

Innovative Data, LLC

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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/07/15	3	3	15	18	7	0	0	0	0	0	0	0	0	0	46	30	33
01:00	1	1	6	9	2	1	0	0	0	0	0	0	0	0	20	29	31
02:00	2	3	3	6	2	0	0	0	0	0	0	0	0	0	16	28	30
03:00	0	0	1	2	4	0	0	0	0	0	0	0	0	0	7	33	33
04:00	2	0	4	2	7	0	0	0	0	0	0	0	0	0	15	34	35
05:00	3	0	4	25	9	4	1	0	0	0	0	0	0	0	46	33	37
06:00	5	2	28	66	27	1	0	0	0	0	0	0	0	0	129	31	33
07:00	13	8	59	133	65	7	1	0	0	0	0	0	0	0	286	32	34
08:00	21	37	110	153	34	0	0	0	0	0	0	0	0	0	355	29	32
09:00	37	14	84	116	40	2	1	0	0	0	0	0	0	0	294	30	33
10:00	21	27	60	95	28	2	1	0	0	0	0	0	0	0	234	29	32
11:00	37	37	86	97	18	0	0	0	0	0	0	0	0	0	275	28	31
12 PM	38	41	99	73	14	0	1	0	0	0	0	0	0	0	266	27	30
13:00	28	24	91	95	13	4	0	0	0	0	0	0	0	0	255	28	31
14:00	35	47	105	60	16	1	0	0	0	0	0	0	0	0	264	27	30
15:00	50	41	96	64	21	0	0	0	0	0	0	0	0	0	272	27	31
16:00	45	36	50	45	11	1	0	0	0	0	0	0	0	0	188	27	30
17:00	50	29	55	58	12	0	0	0	0	0	0	0	0	0	204	27	30
18:00	36	28	68	79	21	0	0	0	0	0	0	0	0	0	232	28	31
19:00	30	20	86	87	12	1	0	0	0	0	0	0	0	0	236	28	31
20:00	17	25	90	61	7	1	0	0	0	0	0	0	0	0	201	27	30
21:00	23	19	56	56	22	2	0	0	0	0	0	0	0	0	178	29	32
22:00	14	12	40	48	16	2	0	0	0	0	0	0	0	0	132	29	32
23:00	4	7	12	42	19	2	0	0	0	0	0	0	0	0	86	31	34
Total	515	461	1308	1490	427	31	5	0	0	0	0	0	0	0	4237		
Percent	12.2%	10.9%	30.9%	35.2%	10.1%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	09:00	08:00	08:00	08:00	07:00	07:00	05:00									08:00	
Vol.	37	37	110	153	65	7	1									355	
PM Peak	15:00	14:00	14:00	13:00	21:00	13:00	12:00									15:00	
Vol.	50	47	105	95	22	4	1									272	
Total	1552	1396	3983	4245	1225	129	13	7	0	0	0	0	0	0	12550		
Percent	12.4%	11.1%	31.7%	33.8%	9.8%	1.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 10 MPH
 50th Percentile : 22 MPH
 85th Percentile : 29 MPH
 95th Percentile : 32 MPH

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 6544
 Percent in Pace : 52.1%
 Number of Vehicles > 40 MPH : 29
 Percent of Vehicles > 40 MPH : 0.2%
 Mean Speed(Average) : 22 MPH

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	4	2	3	11	4	2	0	0	0	0	0	0	0	0	26	31	33
01:00	2	0	7	7	4	0	0	0	0	0	0	0	0	0	20	31	33
02:00	1	0	2	1	3	0	0	0	0	0	0	0	0	0	7	32	32
03:00	0	2	3	2	5	2	0	0	0	0	0	0	0	0	14	34	35
04:00	3	1	2	6	1	1	1	0	0	0	0	0	0	0	15	29	30
05:00	1	1	12	5	7	2	0	0	0	0	0	0	0	0	28	33	35
06:00	7	8	34	38	17	2	0	0	0	0	0	0	0	0	106	30	33
07:00	22	22	42	35	19	3	0	0	0	0	0	0	0	0	143	29	33
08:00	41	32	85	23	7	0	0	0	0	0	0	0	0	0	188	25	29
09:00	72	39	60	41	4	1	0	0	0	0	0	0	0	0	217	25	29
10:00	52	57	60	32	7	2	0	0	0	0	0	0	0	0	210	25	29
11:00	76	44	57	46	9	0	0	0	0	0	0	0	0	0	232	26	29
12 PM	68	42	70	52	10	0	0	0	0	0	0	0	0	0	242	26	29
13:00	109	48	58	28	7	1	0	0	0	0	0	0	0	0	251	23	28
14:00	126	61	42	31	6	1	0	0	0	0	0	0	0	0	267	22	27
15:00	175	32	11	3	0	0	0	0	0	0	0	0	0	0	221	14	19
16:00	198	43	23	3	1	0	0	0	0	0	0	0	0	0	268	15	20
17:00	198	32	18	4	0	0	0	0	0	0	0	0	0	0	252	14	19
18:00	73	33	74	32	5	0	0	0	0	0	0	0	0	0	217	24	28
19:00	37	52	76	37	8	0	0	0	0	0	0	0	0	0	210	25	29
20:00	33	54	72	36	9	1	0	0	0	0	0	0	0	0	205	26	29
21:00	12	23	52	56	6	0	0	0	0	0	0	0	0	0	149	28	30
22:00	11	6	51	25	7	0	0	0	0	0	0	0	0	0	100	28	31
23:00	5	5	21	26	15	0	0	0	0	0	0	0	0	0	72	31	34
Total	1326	639	935	580	161	18	1	0	0	0	0	0	0	0	3660		
Percent	36.2%	17.5%	25.5%	15.8%	4.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	10:00	08:00	11:00	07:00	07:00	04:00										11:00
Vol.	76	57	85	46	19	3	1										232
PM Peak	16:00	14:00	19:00	21:00	23:00	13:00											16:00
Vol.	198	61	76	56	15	1											268

Innovative Data, LLC

Location: Dickinson Street
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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	2	0	11	13	4	1	0	0	0	0	0	0	0	0	31	31	33
01:00	1	1	6	6	3	0	0	0	0	0	0	0	0	0	17	30	32
02:00	2	2	2	1	1	2	0	0	0	0	0	0	0	0	10	*	*
03:00	0	1	1	5	3	1	0	0	0	0	0	0	0	0	11	31	32
04:00	2	2	1	5	3	1	0	0	0	0	0	0	0	0	14	31	32
05:00	5	1	12	12	5	2	0	0	0	0	0	0	0	0	37	30	34
06:00	11	11	34	32	16	2	0	0	0	0	0	0	0	0	106	30	33
07:00	21	35	44	45	7	1	0	0	0	0	0	0	0	0	153	27	30
08:00	62	41	84	27	4	1	0	0	0	0	0	0	0	0	219	24	28
09:00	53	27	79	35	7	0	0	0	0	0	0	0	0	0	201	25	29
10:00	38	35	75	38	6	1	1	0	0	0	0	0	0	0	194	26	29
11:00	71	61	77	32	7	1	0	0	0	0	0	0	0	0	249	24	28
12 PM	89	57	57	32	1	0	0	0	0	0	0	0	0	0	236	23	27
13:00	104	46	63	34	2	0	0	0	0	0	0	0	0	0	249	23	27
14:00	126	52	48	24	4	0	0	0	0	0	0	0	0	0	254	21	26
15:00	124	47	59	19	3	0	0	0	0	0	0	0	0	0	252	22	26
16:00	167	31	30	19	2	1	0	0	0	0	0	0	0	0	250	18	25
17:00	233	28	15	4	0	0	0	0	0	0	0	0	0	0	280	14	18
18:00	86	46	45	35	6	1	0	0	0	0	0	0	0	0	219	24	28
19:00	60	43	73	34	6	2	0	0	0	0	0	0	0	0	218	25	29
20:00	35	52	73	40	3	2	0	0	0	0	0	0	0	0	205	25	28
21:00	25	23	62	33	6	1	0	0	0	0	0	0	0	0	150	26	30
22:00	8	13	39	34	12	0	0	0	0	0	0	0	0	0	106	29	32
23:00	4	6	27	18	8	2	0	0	0	0	0	0	0	0	65	29	33
Total	1329	661	1017	577	119	22	1	0	0	0	0	0	0	0	3726		
Percent	35.7%	17.7%	27.3%	15.5%	3.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	08:00	07:00	06:00	02:00	10:00									11:00	
Vol.	71	61	84	45	16	2	1									249	
PM Peak	17:00	12:00	19:00	20:00	22:00	19:00										17:00	
Vol.	233	57	73	40	12	2										280	

Innovative Data, LLC

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/15	1	3	7	18	5	2	0	0	0	0	0	0	0	0	36	31	34
01:00	4	0	4	12	3	1	0	0	0	0	0	0	0	0	24	29	31
02:00	0	0	1	3	3	1	0	0	0	0	0	0	0	0	8	32	33
03:00	0	0	2	5	4	0	0	0	0	0	0	0	0	0	11	32	33
04:00	3	0	2	3	2	2	0	0	0	0	0	0	0	0	12	*	*
05:00	1	0	9	17	6	1	0	0	0	0	0	0	0	0	34	31	34
06:00	7	9	33	37	12	2	2	0	0	0	0	0	0	0	102	29	33
07:00	16	19	49	46	16	0	1	0	0	0	0	0	0	0	147	29	32
08:00	59	40	59	45	10	1	0	0	0	0	0	0	0	0	214	26	30
09:00	45	35	79	45	11	0	0	0	0	0	0	0	0	0	215	26	30
10:00	59	37	72	48	4	1	0	0	0	0	0	0	0	0	221	26	29
11:00	66	43	63	31	4	1	0	0	0	0	0	0	0	0	208	24	28
12 PM	55	39	60	38	9	0	0	0	0	0	0	0	0	0	201	26	29
13:00	81	61	65	33	8	1	0	0	0	0	0	0	0	0	249	24	28
14:00	82	52	86	30	6	1	1	0	0	0	0	0	0	0	258	24	28
15:00	166	47	29	9	1	0	0	0	0	0	0	0	0	0	252	17	23
16:00	201	34	6	2	0	0	0	0	0	0	0	0	0	0	243	14	17
17:00	190	38	15	2	1	0	0	0	0	0	0	0	0	0	246	14	19
18:00	94	35	58	27	7	0	0	0	0	0	0	0	0	0	221	24	28
19:00	59	50	70	25	3	0	0	0	0	0	0	0	0	0	207	24	27
20:00	42	56	68	24	2	0	0	0	0	0	0	0	0	0	192	24	27
21:00	23	30	69	25	10	3	0	0	0	0	0	0	0	0	160	26	31
22:00	9	14	51	34	9	0	0	0	0	0	0	0	0	0	117	28	31
23:00	6	11	15	24	14	2	0	0	0	0	0	0	0	0	72	31	34
Total	1269	653	972	583	150	19	4	0	0	0	0	0	0	0	3650		
Percent	34.8%	17.9%	26.6%	16.0%	4.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	11:00	11:00	09:00	10:00	07:00	00:00	06:00										10:00
Vol.	66	43	79	48	16	2	2										221
PM Peak	16:00	13:00	14:00	12:00	23:00	21:00	14:00										14:00
Vol.	201	61	86	38	14	3	1										258
Total	3924	1953	2924	1740	430	59	6	0	0	0	0	0	0	0	11036		
Percent	35.6%	17.7%	26.5%	15.8%	3.9%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 6 MPH
 50th Percentile : 14 MPH
 85th Percentile : 25 MPH
 95th Percentile : 29 MPH

Stats
 10 MPH Pace Speed : 6-15 MPH
 Number in Pace : 4698
 Percent in Pace : 42.6%
 Number of Vehicles > 40 MPH : 9
 Percent of Vehicles > 40 MPH : 0.1%
 Mean Speed(Average) : 16 MPH

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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 innovativedata.com or 1.413.668.5094

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	6	3	11	28	9	3	0	0	0	0	0	0	0	0	60	30	34
01:00	3	2	10	15	8	1	0	0	0	0	0	0	0	0	39	31	34
02:00	2	2	4	9	6	0	0	1	0	0	0	0	0	0	24	32	34
03:00	0	2	3	8	9	3	0	0	0	0	0	0	0	0	25	34	36
04:00	4	1	6	11	6	2	1	1	0	0	0	0	0	0	32	32	35
05:00	2	3	19	22	17	6	0	0	0	0	0	0	0	0	69	33	36
06:00	14	16	68	106	47	7	0	1	0	0	0	0	0	0	259	31	34
07:00	41	42	123	162	66	7	0	0	0	0	0	0	0	0	441	30	33
08:00	74	80	210	140	28	0	0	0	0	0	0	0	0	0	532	27	30
09:00	104	67	150	139	30	4	0	0	0	0	0	0	0	0	494	27	31
10:00	88	78	144	121	28	6	0	0	0	0	0	0	0	0	465	27	31
11:00	104	64	132	139	37	3	1	0	0	0	0	0	0	0	480	28	31
12 PM	108	76	155	126	35	3	0	0	0	0	0	0	0	0	503	27	31
13:00	137	72	126	138	32	4	0	0	0	0	0	0	0	0	509	27	30
14:00	165	103	130	112	27	2	0	0	0	0	0	0	0	0	539	26	30
15:00	222	64	80	70	8	4	0	0	0	0	0	0	0	0	448	23	28
16:00	234	65	80	75	15	3	0	0	0	0	0	0	0	0	472	24	28
17:00	251	51	72	65	8	1	0	0	0	0	0	0	0	0	448	23	28
18:00	97	63	142	117	27	4	1	0	0	0	0	0	0	0	451	27	31
19:00	58	70	138	96	30	4	0	2	0	0	0	0	0	0	398	28	31
20:00	52	74	158	107	20	2	0	0	0	0	0	0	0	0	413	27	30
21:00	23	36	99	122	26	3	0	0	0	0	0	0	0	0	309	29	32
22:00	17	15	77	86	20	3	0	0	0	0	0	0	0	0	218	29	32
23:00	8	6	48	62	40	2	0	0	0	0	0	0	0	0	166	31	34
Total	1814	1055	2185	2076	579	77	3	5	0	0	0	0	0	0	7794		
Percent	23.3%	13.5%	28.0%	26.6%	7.4%	1.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	08:00	08:00	07:00	07:00	06:00	04:00	02:00							08:00		
Vol.	104	80	210	162	66	7	1	1							532		
PM Peak	17:00	14:00	20:00	13:00	23:00	13:00	18:00	19:00							14:00		
Vol.	251	103	158	138	40	4	1	2							539		

Innovative Data, LLC

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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	3	1	17	21	15	2	0	0	0	0	0	0	0	0	59	32	34
01:00	2	2	16	11	5	1	1	0	0	0	0	0	0	0	38	30	33
02:00	2	3	8	3	7	2	0	0	0	0	0	0	0	0	25	33	35
03:00	0	1	2	6	3	2	0	0	0	0	0	0	0	0	14	33	34
04:00	4	2	4	11	5	1	0	0	0	0	0	0	0	0	27	31	33
05:00	9	2	20	26	17	5	1	0	0	0	0	0	0	0	80	32	36
06:00	20	14	59	92	46	4	0	0	0	0	0	0	0	0	235	31	34
07:00	26	43	118	169	57	10	0	0	0	0	0	0	0	0	423	30	33
08:00	96	75	240	153	36	3	0	0	0	0	0	0	0	0	603	27	31
09:00	81	54	174	128	33	3	1	0	0	0	0	0	0	0	474	28	31
10:00	70	55	139	132	33	3	1	0	0	0	0	0	0	0	433	28	31
11:00	98	93	174	105	26	3	1	0	0	0	0	0	0	0	500	26	30
12 PM	133	105	161	94	13	2	0	0	0	0	0	0	0	0	508	25	29
13:00	152	88	165	81	14	0	0	0	0	0	0	0	0	0	500	25	28
14:00	174	107	139	87	13	0	0	0	0	0	0	0	0	0	520	25	28
15:00	169	78	158	90	26	0	0	0	0	0	0	0	0	0	521	25	29
16:00	214	73	96	78	13	3	0	0	0	0	0	0	0	0	477	24	28
17:00	295	63	85	54	12	2	0	0	0	0	0	0	0	0	511	22	27
18:00	117	89	109	95	21	3	0	1	0	0	0	0	0	0	435	26	30
19:00	86	69	166	94	27	4	0	0	0	0	0	0	0	0	446	27	31
20:00	58	85	145	93	14	3	0	1	0	0	0	0	0	0	399	26	30
21:00	42	40	115	79	21	2	0	0	0	0	0	0	0	0	299	28	31
22:00	20	27	82	84	24	0	0	0	0	0	0	0	0	0	237	29	32
23:00	7	11	50	50	18	3	2	0	0	0	0	0	0	0	141	30	34
Total	1878	1180	2442	1836	499	61	7	2	0	0	0	0	0	0	7905		
Percent	23.8%	14.9%	30.9%	23.2%	6.3%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	11:00	11:00	08:00	07:00	07:00	07:00	01:00									08:00	
Vol.	98	93	240	169	57	10	1									603	
PM Peak	17:00	14:00	19:00	18:00	19:00	19:00	23:00	18:00								15:00	
Vol.	295	107	166	95	27	4	2	1								521	

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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/07/15	4	6	22	36	12	2	0	0	0	0	0	0	0	0	0	82	30	33
01:00	5	1	10	21	5	2	0	0	0	0	0	0	0	0	0	44	30	33
02:00	2	3	4	9	5	1	0	0	0	0	0	0	0	0	0	24	32	34
03:00	0	0	3	7	8	0	0	0	0	0	0	0	0	0	0	18	33	35
04:00	5	0	6	5	9	2	0	0	0	0	0	0	0	0	0	27	33	35
05:00	4	0	13	42	15	5	1	0	0	0	0	0	0	0	0	80	32	36
06:00	12	11	61	103	39	3	2	0	0	0	0	0	0	0	0	231	31	34
07:00	29	27	108	179	81	7	2	0	0	0	0	0	0	0	0	433	31	34
08:00	80	77	169	198	44	1	0	0	0	0	0	0	0	0	0	569	28	31
09:00	82	49	163	161	51	2	1	0	0	0	0	0	0	0	0	509	28	32
10:00	80	64	132	143	32	3	1	0	0	0	0	0	0	0	0	455	28	31
11:00	103	80	149	128	22	1	0	0	0	0	0	0	0	0	0	483	27	30
12 PM	93	80	159	111	23	0	1	0	0	0	0	0	0	0	0	467	27	30
13:00	109	85	156	128	21	5	0	0	0	0	0	0	0	0	0	504	27	30
14:00	117	99	191	90	22	2	1	0	0	0	0	0	0	0	0	522	26	29
15:00	216	88	125	73	22	0	0	0	0	0	0	0	0	0	0	524	24	29
16:00	246	70	56	47	11	1	0	0	0	0	0	0	0	0	0	431	21	27
17:00	240	67	70	60	13	0	0	0	0	0	0	0	0	0	0	450	22	28
18:00	130	63	126	106	28	0	0	0	0	0	0	0	0	0	0	453	27	30
19:00	89	70	156	112	15	1	0	0	0	0	0	0	0	0	0	443	27	30
20:00	59	81	158	85	9	1	0	0	0	0	0	0	0	0	0	393	26	29
21:00	46	49	125	81	32	5	0	0	0	0	0	0	0	0	0	338	28	33
22:00	23	26	91	82	25	2	0	0	0	0	0	0	0	0	0	249	29	32
23:00	10	18	27	66	33	4	0	0	0	0	0	0	0	0	0	158	31	34
Total	1784	1114	2280	2073	577	50	9	0	0	0	0	0	0	0	0	7887		
Percent	22.6%	14.1%	28.9%	26.3%	7.3%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	08:00	08:00	07:00	07:00	06:00										08:00	
Vol.	103	80	169	198	81	7	2										569	
PM Peak	16:00	14:00	14:00	13:00	23:00	13:00	12:00										15:00	
Vol.	246	99	191	128	33	5	1										524	
Total	5476	3349	6907	5985	1655	188	19	7	0	0	0	0	0	0	0	23586		
Percent	23.2%	14.2%	29.3%	25.4%	7.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 7 MPH
 50th Percentile : 19 MPH
 85th Percentile : 27 MPH
 95th Percentile : 31 MPH

Stats
 10 MPH Pace Speed : 20-29 MPH
 Number in Pace : 9588
 Percent in Pace : 40.7%
 Number of Vehicles > 40 MPH : 37
 Percent of Vehicles > 40 MPH : 0.2%
 Mean Speed(Average) : 19 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Burlington

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	30	1	0	1	0	0	0	0	0	0	0	0	2	34
01:00	1	16	1	0	0	0	0	0	0	0	0	0	0	1	19
02:00	0	15	1	0	0	0	0	0	0	0	0	0	0	1	17
03:00	0	7	4	0	0	0	0	0	0	0	0	0	0	0	11
04:00	1	10	5	0	0	0	0	0	0	0	0	0	0	1	17
05:00	1	27	10	0	1	0	0	0	0	0	0	0	0	2	41
06:00	3	113	21	6	4	0	0	1	1	0	0	0	0	4	153
07:00	2	243	30	1	8	1	0	0	0	0	0	0	0	13	298
08:00	3	272	36	5	11	1	0	1	0	0	0	0	0	15	344
09:00	7	208	30	0	5	1	0	1	0	0	0	0	0	25	277
10:00	5	187	28	1	6	0	0	0	0	0	0	0	0	28	255
11:00	3	193	16	0	6	1	1	4	1	0	0	0	0	23	248
12 PM	3	180	31	2	3	3	0	3	0	0	0	0	0	36	261
13:00	6	196	27	0	4	4	0	0	0	0	0	0	0	21	258
14:00	10	197	24	2	3	1	0	3	1	0	0	0	0	31	272
15:00	10	151	26	3	5	1	0	0	0	0	0	0	0	31	227
16:00	9	147	15	1	2	1	0	0	0	0	0	0	0	29	204
17:00	8	125	15	0	0	1	0	0	0	0	0	0	0	47	196
18:00	7	185	17	0	4	0	0	0	0	0	0	0	0	21	234
19:00	6	151	18	0	2	0	0	1	0	0	0	0	0	10	188
20:00	5	175	9	0	0	2	0	0	0	0	0	0	0	17	208
21:00	2	135	15	0	1	0	0	0	0	0	0	0	0	7	160
22:00	3	100	10	0	0	0	0	0	0	0	0	0	0	5	118
23:00	1	84	4	0	2	0	0	0	0	0	0	0	0	3	94
Total	96	3147	394	21	68	17	1	14	3	0	0	0	0	373	4134
Percent	2.3%	76.1%	9.5%	0.5%	1.6%	0.4%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	9.0%	
AM Peak	09:00	08:00	08:00	06:00	08:00	07:00	11:00	11:00	06:00					10:00	
Vol.	7	272	36	6	11	1	1	4	1					28	
PM Peak	14:00	14:00	12:00	15:00	15:00	13:00		12:00	14:00					17:00	
Vol.	10	197	31	3	5	4		3	1					47	

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Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	25	2	0	0	0	0	0	0	0	0	0	0	1	28
01:00	0	19	2	0	0	0	0	0	0	0	0	0	0	0	21
02:00	0	15	0	0	0	0	0	0	0	0	0	0	0	0	15
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	7	3	0	1	0	0	0	0	0	0	0	0	2	13
05:00	0	28	9	0	1	0	0	1	0	0	0	0	0	4	43
06:00	1	96	14	5	5	0	0	0	0	0	0	0	0	8	129
07:00	1	225	30	0	9	1	0	1	0	0	0	0	0	3	270
08:00	5	300	37	4	10	0	0	1	0	0	0	0	0	27	384
09:00	7	217	26	0	3	1	0	0	0	0	0	0	0	19	273
10:00	6	176	29	0	4	1	0	1	0	0	0	0	0	22	239
11:00	4	198	20	1	9	0	0	0	0	0	0	0	0	19	251
12 PM	5	177	38	0	7	2	1	2	0	0	0	0	0	40	272
13:00	7	182	19	1	4	5	0	0	0	0	0	0	0	33	251
14:00	9	187	28	3	6	0	0	1	0	0	0	0	0	32	266
15:00	7	186	35	5	4	2	0	0	0	0	0	0	0	30	269
16:00	9	149	19	4	4	3	0	1	0	0	0	0	0	38	227
17:00	12	143	22	1	2	3	0	2	0	0	0	0	0	46	231
18:00	5	169	18	0	2	2	0	0	0	0	0	0	0	20	216
19:00	3	181	21	1	2	1	0	1	0	0	0	0	0	18	228
20:00	6	155	14	0	0	1	0	0	0	0	0	0	0	18	194
21:00	3	118	11	0	2	0	0	0	0	0	0	0	0	15	149
22:00	4	106	11	0	0	0	0	0	0	0	0	0	0	10	131
23:00	0	69	5	0	0	0	0	0	0	0	0	0	0	2	76
Total	94	3131	413	25	75	22	1	11	0	0	0	0	0	407	4179
Percent	2.2%	74.9%	9.9%	0.6%	1.8%	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	9.7%	
AM Peak	09:00	08:00	08:00	06:00	08:00	07:00		05:00						08:00	
Vol.	7	300	37	5	10	1		1						27	
PM Peak	17:00	14:00	12:00	15:00	12:00	13:00	12:00	12:00						17:00	
Vol.	12	187	38	5	7	5	1	2						46	

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Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	41	2	0	1	0	0	0	0	0	0	0	0	2	46
01:00	0	18	1	0	0	0	0	0	0	0	0	0	0	1	20
02:00	1	10	2	0	0	0	0	0	0	0	0	0	0	3	16
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	10	3	0	0	0	0	0	0	0	0	0	0	2	15
05:00	1	34	7	0	1	0	0	0	0	0	0	0	0	3	46
06:00	2	99	12	5	5	0	0	0	1	0	0	0	0	5	129
07:00	3	234	29	0	6	1	0	0	0	0	0	0	0	13	286
08:00	5	289	29	4	10	3	0	1	0	0	0	0	0	14	355
09:00	9	228	24	1	4	1	0	0	1	0	0	0	0	26	294
10:00	3	176	24	2	10	0	0	0	0	0	0	0	0	19	234
11:00	6	212	27	1	4	1	0	0	0	0	0	0	0	24	275
12 PM	6	204	28	0	6	0	0	1	1	0	0	0	0	20	266
13:00	6	191	36	0	5	0	0	1	0	0	0	0	0	16	255
14:00	7	198	23	2	8	0	0	0	0	1	0	0	0	25	264
15:00	6	182	30	5	5	3	0	0	0	0	0	0	0	41	272
16:00	7	123	15	2	4	2	1	0	0	0	0	0	0	34	188
17:00	12	132	16	1	2	1	0	1	1	0	0	0	0	38	204
18:00	6	166	25	1	4	2	0	0	0	0	0	0	0	28	232
19:00	7	192	13	1	1	0	0	1	0	0	0	0	0	21	236
20:00	3	171	14	0	1	0	0	1	1	0	0	0	0	10	201
21:00	1	147	11	0	0	0	0	0	0	0	0	0	0	19	178
22:00	3	108	10	0	0	0	0	0	0	0	0	0	0	11	132
23:00	2	76	5	0	0	0	0	0	0	0	0	0	0	3	86
Total	96	3247	387	25	77	14	1	6	5	1	0	0	0	378	4237
Percent	2.3%	76.6%	9.1%	0.6%	1.8%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	8.9%	
AM Peak	09:00	08:00	07:00	06:00	08:00	08:00		08:00	06:00					09:00	
Vol.	9	289	29	5	10	3		1	1					26	
PM Peak	17:00	12:00	13:00	15:00	14:00	15:00	16:00	12:00	12:00	14:00				15:00	
Vol.	12	204	36	5	8	3	1	1	1	1				41	
Grand Total	286	9525	1194	71	220	53	3	31	8	1	0	0	0	1158	12550
Percent	2.3%	75.9%	9.5%	0.6%	1.8%	0.4%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	9.2%	

Innovative Data, LLC

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Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	21	1	0	0	0	0	0	0	0	0	0	0	4	26
01:00	0	16	2	0	0	0	0	0	0	0	0	0	0	2	20
02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	1	7
03:00	0	12	2	0	0	0	0	0	0	0	0	0	0	0	14
04:00	0	9	5	0	1	0	0	0	0	0	0	0	0	0	15
05:00	0	21	5	0	0	0	0	1	0	0	0	0	0	1	28
06:00	0	73	21	4	6	0	0	0	0	0	0	0	0	2	106
07:00	1	108	15	0	4	1	0	0	0	0	0	0	0	14	143
08:00	4	137	20	3	6	0	0	0	0	0	0	0	0	18	188
09:00	6	146	30	1	5	1	0	2	0	0	0	0	0	26	217
10:00	2	159	22	0	3	0	0	0	1	0	0	0	0	23	210
11:00	3	172	21	0	5	1	0	1	0	0	0	0	0	29	232
12 PM	3	181	19	1	5	1	0	1	0	0	0	0	0	31	242
13:00	4	162	21	0	1	2	0	0	0	0	0	0	0	61	251
14:00	5	172	32	2	3	1	0	0	1	0	0	0	0	51	267
15:00	7	111	11	2	3	2	0	2	0	0	0	0	0	83	221
16:00	7	155	15	1	3	1	0	1	0	0	1	0	0	84	268
17:00	6	140	10	1	2	2	0	3	0	0	0	0	0	88	252
18:00	4	168	16	0	4	0	0	0	0	0	1	0	0	24	217
19:00	4	174	14	0	2	0	0	1	0	0	0	0	0	15	210
20:00	5	172	15	0	0	0	0	0	0	0	0	0	0	13	205
21:00	1	128	11	0	1	2	0	0	0	0	0	0	0	6	149
22:00	0	90	3	0	0	1	0	0	0	0	0	0	0	6	100
23:00	1	59	7	0	0	0	0	0	0	0	0	0	0	5	72
Total	63	2591	319	15	54	15	0	12	2	0	2	0	0	587	3660
Percent	1.7%	70.8%	8.7%	0.4%	1.5%	0.4%	0.0%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	16.0%	
AM Peak	09:00	11:00	09:00	06:00	06:00	07:00		09:00	10:00					11:00	
Vol.	6	172	30	4	6	1		2	1					29	
PM Peak	15:00	12:00	14:00	14:00	12:00	13:00		17:00	14:00		16:00			17:00	
Vol.	7	181	32	2	5	2		3	1		1			88	

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Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	29	1	0	0	0	0	0	0	0	0	0	0	0	31
01:00	0	15	2	0	0	0	0	0	0	0	0	0	0	0	17
02:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
03:00	0	7	2	0	2	0	0	0	0	0	0	0	0	0	11
04:00	0	11	1	0	0	0	0	0	0	0	0	0	0	2	14
05:00	0	26	6	0	0	0	0	0	0	0	0	0	0	5	37
06:00	2	67	23	5	3	0	0	0	0	0	0	0	0	6	106
07:00	0	112	21	3	7	2	0	1	0	0	0	0	0	7	153
08:00	3	153	29	3	4	2	0	1	0	0	0	0	0	24	219
09:00	1	136	26	1	7	1	0	1	0	0	0	0	0	28	201
10:00	4	135	22	1	11	0	0	2	0	0	0	0	0	19	194
11:00	1	188	26	0	7	3	0	0	0	0	0	0	0	24	249
12 PM	4	165	20	0	7	0	0	1	0	0	0	0	0	39	236
13:00	6	163	18	0	6	3	0	0	0	0	0	0	0	53	249
14:00	5	171	19	3	5	0	0	2	0	0	0	0	0	49	254
15:00	5	167	18	2	3	1	0	0	0	0	0	0	0	56	252
16:00	8	146	21	1	3	3	0	0	0	0	0	0	0	68	250
17:00	3	154	17	0	3	2	0	2	0	0	0	0	0	99	280
18:00	6	160	18	1	1	0	0	1	0	0	0	0	0	32	219
19:00	2	167	20	0	1	2	0	0	0	0	0	0	0	26	218
20:00	3	166	15	0	2	1	0	0	0	0	0	0	0	18	205
21:00	1	122	9	0	1	0	0	0	1	0	0	0	0	16	150
22:00	0	94	8	0	0	0	0	0	0	0	0	0	0	4	106
23:00	0	55	7	0	0	1	0	0	0	0	0	0	0	2	65
Total	55	2619	349	20	73	21	0	11	1	0	0	0	0	577	3726
Percent	1.5%	70.3%	9.4%	0.5%	2.0%	0.6%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	15.5%	
AM Peak	10:00	11:00	08:00	06:00	10:00	11:00		10:00						09:00	
Vol.	4	188	29	5	11	3		2						28	
PM Peak	16:00	14:00	16:00	14:00	12:00	13:00		14:00	21:00					17:00	
Vol.	8	171	21	3	7	3		2	1					99	

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PO Box 468
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Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	1	31	2	0	1	0	0	0	0	0	0	0	0	1	36
01:00	1	17	2	0	0	0	0	0	0	0	0	0	0	4	24
02:00	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
03:00	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
04:00	0	10	0	0	0	0	0	0	0	0	0	0	0	2	12
05:00	0	27	6	0	0	0	0	0	0	0	0	0	0	1	34
06:00	0	72	18	4	3	0	0	0	0	0	0	0	0	5	102
07:00	1	105	23	1	7	2	0	1	0	0	0	0	0	7	147
08:00	5	149	18	3	8	0	0	0	0	0	0	0	0	31	214
09:00	5	161	20	0	4	2	0	0	0	0	0	0	0	23	215
10:00	3	173	23	1	5	0	0	0	0	0	0	0	0	16	221
11:00	4	146	25	0	2	0	0	1	0	0	0	0	0	30	208
12 PM	2	147	19	1	5	0	0	0	0	0	0	0	0	27	201
13:00	5	180	23	1	5	0	0	0	1	0	0	0	0	34	249
14:00	3	191	27	3	2	0	0	1	0	0	0	0	0	31	258
15:00	7	143	19	1	5	3	0	2	0	0	1	0	0	71	252
16:00	10	126	7	0	2	1	0	1	0	0	1	0	0	95	243
17:00	5	145	11	1	0	0	0	0	0	0	0	0	0	84	246
18:00	5	147	18	0	4	1	0	0	0	0	0	0	0	46	221
19:00	0	169	19	1	0	1	0	0	0	0	0	0	0	17	207
20:00	3	147	17	0	0	0	0	0	0	0	0	0	0	25	192
21:00	3	127	15	0	0	0	0	0	0	0	0	0	0	15	160
22:00	2	100	7	0	0	1	0	0	0	0	0	0	0	7	117
23:00	1	60	6	0	2	0	0	0	0	0	0	0	0	3	72
Total	66	2590	326	17	56	11	0	6	1	0	2	0	0	575	3650
Percent	1.8%	71.0%	8.9%	0.5%	1.5%	0.3%	0.0%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	15.8%	
AM Peak	08:00	10:00	11:00	06:00	08:00	07:00		07:00						08:00	
Vol.	5	173	25	4	8	2		1						31	
PM Peak	16:00	14:00	14:00	14:00	12:00	15:00		15:00	13:00		15:00			16:00	
Vol.	10	191	27	3	5	3		2	1		1			95	
Grand Total	184	7800	994	52	183	47	0	29	4	0	4	0	0	1739	11036
Percent	1.7%	70.7%	9.0%	0.5%	1.7%	0.4%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	15.8%	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Burlington
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	51	2	0	1	0	0	0	0	0	0	0	0	6	60
01:00	1	32	3	0	0	0	0	0	0	0	0	0	0	3	39
02:00	0	20	2	0	0	0	0	0	0	0	0	0	0	2	24
03:00	0	19	6	0	0	0	0	0	0	0	0	0	0	0	25
04:00	1	19	10	0	1	0	0	0	0	0	0	0	0	1	32
05:00	1	48	15	0	1	0	0	1	0	0	0	0	0	3	69
06:00	3	186	42	10	10	0	0	1	1	0	0	0	0	6	259
07:00	3	351	45	1	12	2	0	0	0	0	0	0	0	27	441
08:00	7	409	56	8	17	1	0	1	0	0	0	0	0	33	532
09:00	13	354	60	1	10	2	0	3	0	0	0	0	0	51	494
10:00	7	346	50	1	9	0	0	0	1	0	0	0	0	51	465
11:00	6	365	37	0	11	2	1	5	1	0	0	0	0	52	480
12 PM	6	361	50	3	8	4	0	4	0	0	0	0	0	67	503
13:00	10	358	48	0	5	6	0	0	0	0	0	0	0	82	509
14:00	15	369	56	4	6	2	0	3	2	0	0	0	0	82	539
15:00	17	262	37	5	8	3	0	2	0	0	0	0	0	114	448
16:00	16	302	30	2	5	2	0	1	0	0	1	0	0	113	472
17:00	14	265	25	1	2	3	0	3	0	0	0	0	0	135	448
18:00	11	353	33	0	8	0	0	0	0	0	1	0	0	45	451
19:00	10	325	32	0	4	0	0	2	0	0	0	0	0	25	398
20:00	10	347	24	0	0	2	0	0	0	0	0	0	0	30	413
21:00	3	263	26	0	2	2	0	0	0	0	0	0	0	13	309
22:00	3	190	13	0	0	1	0	0	0	0	0	0	0	11	218
23:00	2	143	11	0	2	0	0	0	0	0	0	0	0	8	166
Total	159	5738	713	36	122	32	1	26	5	0	2	0	0	960	7794
Percent	2.0%	73.6%	9.1%	0.5%	1.6%	0.4%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	12.3%	
AM Peak	09:00	08:00	09:00	06:00	08:00	07:00	11:00	11:00	06:00					11:00	
Vol.	13	409	60	10	17	2	1	5	1					52	
PM Peak	15:00	14:00	14:00	15:00	12:00	13:00		12:00	14:00		16:00			17:00	
Vol.	17	369	56	5	8	6		4	2		1			135	

Innovative Data, LLC

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Location: Dickinson Street

Location: between Sumner & Burlington

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	54	3	0	0	0	0	0	0	0	0	0	0	1	59
01:00	0	34	4	0	0	0	0	0	0	0	0	0	0	0	38
02:00	0	25	0	0	0	0	0	0	0	0	0	0	0	0	25
03:00	0	10	2	0	2	0	0	0	0	0	0	0	0	0	14
04:00	0	18	4	0	1	0	0	0	0	0	0	0	0	4	27
05:00	0	54	15	0	1	0	0	1	0	0	0	0	0	9	80
06:00	3	163	37	10	8	0	0	0	0	0	0	0	0	14	235
07:00	1	337	51	3	16	3	0	2	0	0	0	0	0	10	423
08:00	8	453	66	7	14	2	0	2	0	0	0	0	0	51	603
09:00	8	353	52	1	10	2	0	1	0	0	0	0	0	47	474
10:00	10	311	51	1	15	1	0	3	0	0	0	0	0	41	433
11:00	5	386	46	1	16	3	0	0	0	0	0	0	0	43	500
12 PM	9	342	58	0	14	2	1	3	0	0	0	0	0	79	508
13:00	13	345	37	1	10	8	0	0	0	0	0	0	0	86	500
14:00	14	358	47	6	11	0	0	3	0	0	0	0	0	81	520
15:00	12	353	53	7	7	3	0	0	0	0	0	0	0	86	521
16:00	17	295	40	5	7	6	0	1	0	0	0	0	0	106	477
17:00	15	297	39	1	5	5	0	4	0	0	0	0	0	145	511
18:00	11	329	36	1	3	2	0	1	0	0	0	0	0	52	435
19:00	5	348	41	1	3	3	0	1	0	0	0	0	0	44	446
20:00	9	321	29	0	2	2	0	0	0	0	0	0	0	36	399
21:00	4	240	20	0	3	0	0	0	1	0	0	0	0	31	299
22:00	4	200	19	0	0	0	0	0	0	0	0	0	0	14	237
23:00	0	124	12	0	0	1	0	0	0	0	0	0	0	4	141
Total	149	5750	762	45	148	43	1	22	1	0	0	0	0	984	7905
Percent	1.9%	72.7%	9.6%	0.6%	1.9%	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	
AM Peak	10:00	08:00	08:00	06:00	07:00	07:00		10:00							08:00
Vol.	10	453	66	10	16	3		3						51	
PM Peak	16:00	14:00	12:00	15:00	12:00	13:00	12:00	17:00	21:00					17:00	
Vol.	17	358	58	7	14	8	1	4	1					145	

Innovative Data, LLC

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Location: Dickinson Street

Location: between Sumner & Burlington

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	1	72	4	0	2	0	0	0	0	0	0	0	0	3	82
01:00	1	35	3	0	0	0	0	0	0	0	0	0	0	5	44
02:00	1	17	2	0	1	0	0	0	0	0	0	0	0	3	24
03:00	0	16	2	0	0	0	0	0	0	0	0	0	0	0	18
04:00	0	20	3	0	0	0	0	0	0	0	0	0	0	4	27
05:00	1	61	13	0	1	0	0	0	0	0	0	0	0	4	80
06:00	2	171	30	9	8	0	0	0	1	0	0	0	0	10	231
07:00	4	339	52	1	13	3	0	1	0	0	0	0	0	20	433
08:00	10	438	47	7	18	3	0	1	0	0	0	0	0	45	569
09:00	14	389	44	1	8	3	0	0	1	0	0	0	0	49	509
10:00	6	349	47	3	15	0	0	0	0	0	0	0	0	35	455
11:00	10	358	52	1	6	1	0	1	0	0	0	0	0	54	483
12 PM	8	351	47	1	11	0	0	1	1	0	0	0	0	47	467
13:00	11	371	59	1	10	0	0	1	1	0	0	0	0	50	504
14:00	10	389	50	5	10	0	0	1	0	1	0	0	0	56	522
15:00	13	325	49	6	10	6	0	2	0	0	1	0	0	112	524
16:00	17	249	22	2	6	3	1	1	0	0	1	0	0	129	431
17:00	17	277	27	2	2	1	0	1	1	0	0	0	0	122	450
18:00	11	313	43	1	8	3	0	0	0	0	0	0	0	74	453
19:00	7	361	32	2	1	1	0	1	0	0	0	0	0	38	443
20:00	6	318	31	0	1	0	0	1	1	0	0	0	0	35	393
21:00	4	274	26	0	0	0	0	0	0	0	0	0	0	34	338
22:00	5	208	17	0	0	1	0	0	0	0	0	0	0	18	249
23:00	3	136	11	0	2	0	0	0	0	0	0	0	0	6	158
Total	162	5837	713	42	133	25	1	12	6	1	2	0	0	953	7887
Percent	2.1%	74.0%	9.0%	0.5%	1.7%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	12.1%	
AM Peak	09:00	08:00	07:00	06:00	08:00	07:00		07:00	06:00					11:00	
Vol.	14	438	52	9	18	3		1	1					54	
PM Peak	16:00	14:00	13:00	15:00	12:00	15:00	16:00	15:00	12:00	14:00	15:00			16:00	
Vol.	17	389	59	6	11	6	1	2	1	1	1			129	
Grand Total	470	17325	2188	123	403	100	3	60	12	1	4	0	0	2897	23586
Percent	2.0%	73.5%	9.3%	0.5%	1.7%	0.4%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	12.3%	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedatalc.com or 1.413.668.5094

Start Time	05-May-1 Tue	Northbound		Southbound		Combined		06-May Wed	Northbound		Southbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		8	65	3	56	11	121		11	73	9	47	20	120
12:15		10	70	11	53	21	123		8	66	10	44	18	110
12:30		10	89	3	48	13	137		6	61	6	58	12	119
12:45		10	63	6	44	16	107		6	61	6	39	12	100
01:00		2	67	6	46	8	113		13	68	8	51	21	119
01:15		2	67	7	59	9	126		6	65	7	47	13	112
01:30		8	62	2	40	10	102		3	46	3	44	6	90
01:45		3	80	3	46	6	126		3	63	4	47	7	110
02:00		1	64	4	48	5	112		1	74	4	48	5	122
02:15		3	65	1	64	4	129		4	74	3	41	7	115
02:30		8	68	0	62	8	130		3	73	5	65	8	138
02:45		1	69	5	58	6	127		2	69	1	66	3	135
03:00		5	69	4	60	9	129		0	67	4	56	4	123
03:15		5	60	1	42	6	102		4	77	0	54	4	131
03:30		12	74	3	70	15	144		2	75	3	54	5	129
03:45		0	63	4	53	4	116		4	64	3	48	7	112
04:00		7	65	3	67	10	132		7	66	3	59	10	125
04:15		14	67	2	68	16	135		9	53	0	89	9	142
04:30		9	66	5	89	14	155		8	59	4	73	12	132
04:45		6	69	6	87	12	156		14	65	4	64	18	129
05:00		24	65	6	64	30	129		19	69	3	84	22	153
05:15		11	66	5	88	16	154		23	65	7	65	30	130
05:30		16	64	9	69	25	133		17	60	18	62	35	122
05:45		18	63	14	73	32	136		18	69	13	69	31	138
06:00		42	69	13	64	55	133		22	59	15	77	37	136
06:15		47	62	29	62	76	124		36	54	24	61	60	115
06:30		52	63	28	51	80	114		61	69	33	47	94	116
06:45		44	56	30	58	74	114		69	70	36	51	105	121
07:00		88	57	21	55	109	112		85	54	33	42	118	96
07:15		91	39	33	49	124	88		83	61	26	46	109	107
07:30		97	42	33	48	130	90		86	60	53	49	139	109
07:45		83	51	42	40	125	91		86	63	28	50	114	113
08:00		91	56	37	53	128	109		84	48	60	48	144	96
08:15		83	62	34	63	117	125		85	44	23	47	108	91
08:30		97	44	29	34	126	78		92	63	46	43	138	106
08:45		91	39	35	27	126	66		91	39	32	41	123	80
09:00		81	48	49	34	130	82		81	41	45	36	126	77
09:15		63	50	40	24	103	74		76	41	43	28	119	69
09:30		51	34	44	30	95	64		82	27	28	32	110	59
09:45		53	39	51	18	104	57		65	30	51	28	116	58
10:00		76	44	45	18	121	62		70	30	34	28	104	58
10:15		52	34	37	27	89	61		52	31	42	34	94	65
10:30		61	26	38	30	99	56		50	25	34	33	84	58
10:45		58	26	47	32	105	58		59	27	40	19	99	46
11:00		70	40	50	22	120	62		65	23	28	19	93	42
11:15		66	31	42	16	108	47		69	17	41	16	110	33
11:30		56	17	55	16	111	33		63	15	51	13	114	28
11:45		71	16	41	16	112	32		56	14	54	10	110	24
Total		1857	2665	1016	2341	2873	5006		1859	2587	1028	2272	2887	4859
Day Total		4522		3357		7879			4446		3300		7746	
% Total		23.6%	33.8%	12.9%	29.7%				24.0%	33.4%	13.3%	29.3%		
Peak		07:15	00:15	10:45	04:30	07:15	04:30		08:00	02:00	11:00	04:15	08:00	04:15
Vol.		362	289	194	328	507	594		352	290	174	310	513	556
P.H.F.		0.933	0.812	0.882	0.921	0.975	0.952		0.957	0.980	0.725	0.871	0.891	0.908

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

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Start Time	07-May-1 Thu		Northbound		Southbound		Combined		08-May Fri	Northbound		Southbound		Combined	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	16	77	9	53	25	130			0	*	0	*	0	*	
12:15	14	63	10	44	24	107			*	*	*	*	*	*	
12:30	10	54	16	35	26	89			*	*	*	*	*	*	
12:45	7	69	4	32	11	101			*	*	*	*	*	*	
01:00	10	60	8	56	18	116			*	*	*	*	*	*	
01:15	9	65	3	42	12	107			*	*	*	*	*	*	
01:30	5	59	4	45	9	104			*	*	*	*	*	*	
01:45	4	71	5	49	9	120			*	*	*	*	*	*	
02:00	4	59	3	51	7	110			*	*	*	*	*	*	
02:15	5	74	5	52	10	126			*	*	*	*	*	*	
02:30	2	61	2	54	4	115			*	*	*	*	*	*	
02:45	7	65	4	56	11	121			*	*	*	*	*	*	
03:00	4	63	1	45	5	108			*	*	*	*	*	*	
03:15	3	65	1	46	4	111			*	*	*	*	*	*	
03:30	8	52	1	53	9	105			*	*	*	*	*	*	
03:45	2	64	0	68	2	132			*	*	*	*	*	*	
04:00	7	74	4	67	11	141			*	*	*	*	*	*	
04:15	7	72	1	67	8	139			*	*	*	*	*	*	
04:30	11	71	5	78	16	149			*	*	*	*	*	*	
04:45	15	51	2	69	17	120			*	*	*	*	*	*	
05:00	16	77	2	70	18	147			*	*	*	*	*	*	
05:15	13	75	6	72	19	147			*	*	*	*	*	*	
05:30	26	74	9	73	35	147			*	*	*	*	*	*	
05:45	36	61	17	74	53	135			*	*	*	*	*	*	
06:00	23	53	15	72	38	125			*	*	*	*	*	*	
06:15	48	66	17	42	65	108			*	*	*	*	*	*	
06:30	57	66	26	49	83	115			*	*	*	*	*	*	
06:45	74	62	30	54	104	116			*	*	*	*	*	*	
07:00	79	62	30	59	109	121			*	*	*	*	*	*	
07:15	84	60	34	54	118	114			*	*	*	*	*	*	
07:30		100	38	41	138	97			*	*	*	*	*	*	
07:45		78	31	44	109	95			*	*	*	*	*	*	
08:00		88	38	58	126	111			*	*	*	*	*	*	
08:15		91	33	57	124	110			*	*	*	*	*	*	
08:30		87	44	66	131	126			*	*	*	*	*	*	
08:45		76	49	32	125	70			*	*	*	*	*	*	
09:00		71	46	35	117	77			*	*	*	*	*	*	
09:15		74	37	28	111	62			*	*	*	*	*	*	
09:30		75	46	42	40	117	86		*	*	*	*	*	*	
09:45		64	41	30	37	94	78		*	*	*	*	*	*	
10:00		68	41	50	37	118	78		*	*	*	*	*	*	
10:15		57	29	36	33	93	62		*	*	*	*	*	*	
10:30		51	26	44	25	95	51		*	*	*	*	*	*	
10:45		66	30	44	30	110	60		*	*	*	*	*	*	
11:00		77	27	35	20	112	47		*	*	*	*	*	*	
11:15		55	27	37	14	92	41		*	*	*	*	*	*	
11:30		59	17	50	15	109	32		*	*	*	*	*	*	
11:45		68	17	38	19	106	36		*	*	*	*	*	*	
Total	1911	2633	996	2312	2907	4945			0	0	0	0	0	0	
Day Total	4544		3308		7852				0	0	0	0	0	0	
% Total	24.3%	33.5%	12.7%	29.4%					0.0%	0.0%	0.0%	0.0%			
Peak	07:30	05:00	08:30	05:15	08:00	05:00									
Vol.	357	287	176	291	506	576									
P.H.F.	0.893	0.932	0.898	0.983	0.966	0.980									
ADT	ADT 7,822		AADT 7,822												

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Northbound																85th	95th	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Percent	Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	76	999	Total	Percent	Percent
05/05/15	14	5	11	5	3	0	0	0	0	0	0	0	0	0	0	38	25	29
01:00	3	0	4	5	2	0	1	0	0	0	0	0	0	0	0	15	29	30
02:00	5	2	3	2	1	0	0	0	0	0	0	0	0	0	0	13	11	12
03:00	11	2	3	6	0	0	0	0	0	0	0	0	0	0	0	22	26	28
04:00	19	3	6	5	3	0	0	0	0	0	0	0	0	0	0	36	25	29
05:00	27	2	13	18	8	1	0	0	0	0	0	0	0	0	0	69	28	32
06:00	83	19	42	33	5	2	0	1	0	0	0	0	0	0	0	185	25	29
07:00	198	64	62	30	5	0	0	0	0	0	0	0	0	0	0	359	21	26
08:00	284	50	25	3	0	0	0	0	0	0	0	0	0	0	0	362	14	19
09:00	106	45	58	38	0	1	0	0	0	0	0	0	0	0	0	248	23	27
10:00	87	58	62	34	6	0	0	0	0	0	0	0	0	0	0	247	24	28
11:00	82	57	83	37	4	0	0	0	0	0	0	0	0	0	0	263	24	28
12 PM	85	59	86	46	10	1	0	0	0	0	0	0	0	0	0	287	25	29
13:00	91	60	82	38	5	0	0	0	0	0	0	0	0	0	0	276	24	28
14:00	80	60	89	31	4	2	0	0	0	0	0	0	0	0	0	266	24	27
15:00	165	50	42	9	0	0	0	0	0	0	0	0	0	0	0	266	18	23
16:00	116	63	69	17	2	0	0	0	0	0	0	0	0	0	0	267	22	25
17:00	93	61	78	20	6	0	0	0	0	0	0	0	0	0	0	258	23	27
18:00	62	64	87	32	3	2	0	0	0	0	0	0	0	0	0	250	24	27
19:00	29	45	64	41	9	1	0	0	0	0	0	0	0	0	0	189	26	30
20:00	46	39	73	38	5	0	0	0	0	0	0	0	0	0	0	201	25	29
21:00	35	40	52	34	9	1	0	0	0	0	0	0	0	0	0	171	26	30
22:00	22	18	51	32	7	0	0	0	0	0	0	0	0	0	0	130	27	30
23:00	18	10	24	41	11	0	0	0	0	0	0	0	0	0	0	104	29	31
Total	1761	876	1169	595	108	11	1	1	0	0	0	0	0	0	0	4522		
Percent	38.9%	19.4%	25.9%	13.2%	2.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	11:00	09:00	05:00	06:00	01:00	06:00								08:00		
Vol.	284	64	83	38	8	2	1	1								362		
PM Peak	15:00	18:00	14:00	12:00	23:00	14:00										12:00		
Vol.	165	64	89	46	11	2										287		

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	5	5	5	9	5	2	0	0	0	0	0	0	0	0	31	31	34
01:00	4	3	5	5	8	0	0	0	0	0	0	0	0	0	25	31	34
02:00	1	0	4	4	1	0	0	0	0	0	0	0	0	0	10	28	29
03:00	6	2	0	0	2	0	0	0	0	0	0	0	0	0	10	11	12
04:00	21	2	4	4	6	1	0	0	0	0	0	0	0	0	38	28	32
05:00	34	5	13	19	4	2	0	0	0	0	0	0	0	0	77	26	30
06:00	85	20	49	23	10	1	0	0	0	0	0	0	0	0	188	24	29
07:00	194	63	62	16	5	0	0	0	0	0	0	0	0	0	340	20	24
08:00	245	68	36	2	1	0	0	0	0	0	0	0	0	0	352	16	21
09:00	159	66	54	22	3	0	0	0	0	0	0	0	0	0	304	20	25
10:00	84	44	65	34	3	1	0	0	0	0	0	0	0	0	231	24	27
11:00	78	81	65	27	2	0	0	0	0	0	0	0	0	0	253	23	26
12 PM	99	59	63	31	9	0	0	0	0	0	0	0	0	0	261	23	28
13:00	70	50	75	40	6	1	0	0	0	0	0	0	0	0	242	25	29
14:00	144	67	58	20	1	0	0	0	0	0	0	0	0	0	290	21	25
15:00	150	60	56	16	0	1	0	0	0	0	0	0	0	0	283	20	24
16:00	92	58	53	35	4	1	0	0	0	0	0	0	0	0	243	23	27
17:00	132	59	60	12	0	0	0	0	0	0	0	0	0	0	263	21	24
18:00	90	54	74	30	4	0	0	0	0	0	0	0	0	0	252	23	27
19:00	76	55	68	32	7	0	0	0	0	0	0	0	0	0	238	24	28
20:00	35	59	64	31	4	1	0	0	0	0	0	0	0	0	194	25	28
21:00	39	32	44	20	4	0	0	0	0	0	0	0	0	0	139	24	28
22:00	22	22	34	29	6	0	0	0	0	0	0	0	0	0	113	27	30
23:00	10	9	18	24	6	2	0	0	0	0	0	0	0	0	69	29	32
Total	1875	943	1029	485	101	13	0	0	0	0	0	0	0	0	4446		
Percent	42.2%	21.2%	23.1%	10.9%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	10:00	10:00	06:00	00:00										08:00	
Vol.	245	81	65	34	10	2										352	
PM Peak	15:00	14:00	13:00	13:00	12:00	23:00										14:00	
Vol.	150	67	75	40	9	2										290	

Innovative Data, LLC

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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/07/15	16	2	12	12	5	0	0	0	0	0	0	0	0	0	47	27	31
01:00	9	1	6	8	2	2	0	0	0	0	0	0	0	0	28	28	30
02:00	6	3	4	5	0	0	0	0	0	0	0	0	0	0	18	25	27
03:00	10	2	1	1	3	0	0	0	0	0	0	0	0	0	17	13	14
04:00	29	1	3	2	5	0	0	0	0	0	0	0	0	0	40	13	32
05:00	50	7	8	17	7	2	0	0	0	0	0	0	0	0	91	26	31
06:00	104	28	42	23	5	0	0	0	0	0	0	0	0	0	202	23	27
07:00	202	50	57	27	5	0	0	0	0	0	0	0	0	0	341	20	26
08:00	253	51	33	5	0	0	0	0	0	0	0	0	0	0	342	15	21
09:00	140	47	55	36	6	0	0	0	0	0	0	0	0	0	284	22	27
10:00	84	53	66	31	8	0	0	0	0	0	0	0	0	0	242	23	28
11:00	86	55	60	49	9	0	0	0	0	0	0	0	0	0	259	25	29
12 PM	85	63	60	46	9	0	0	0	0	0	0	0	0	0	263	25	29
13:00	92	58	60	36	9	0	0	0	0	0	0	0	0	0	255	24	29
14:00	86	79	70	22	2	0	0	0	0	0	0	0	0	0	259	22	26
15:00	151	44	35	11	2	1	0	0	0	0	0	0	0	0	244	18	23
16:00	131	56	51	24	5	0	1	0	0	0	0	0	0	0	268	21	26
17:00	156	58	51	17	5	0	0	0	0	0	0	0	0	0	287	20	25
18:00	100	43	67	32	5	0	0	0	0	0	0	0	0	0	247	24	27
19:00	62	60	72	30	4	1	0	0	0	0	0	0	0	0	229	24	28
20:00	39	54	74	31	5	1	0	0	0	0	0	0	0	0	204	25	28
21:00	14	43	70	29	7	0	0	0	0	0	0	0	0	0	163	26	29
22:00	30	18	54	19	5	0	0	0	0	0	0	0	0	0	126	25	29
23:00	19	11	20	28	6	4	0	0	0	0	0	0	0	0	88	29	34
Total	1954	887	1031	541	119	11	1	0	0	0	0	0	0	0	4544		
Percent	43.0%	19.5%	22.7%	11.9%	2.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	10:00	11:00	11:00	01:00											08:00
Vol.	253	55	66	49	9	2											342
PM Peak	17:00	14:00	20:00	12:00	12:00	23:00	16:00										17:00
Vol.	156	79	74	46	9	4	1										287
Total	5590	2706	3229	1621	328	35	2	1	0	0	0	0	0	0	13512		
Percent	41.4%	20.0%	23.9%	12.0%	2.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 5 MPH
 50th Percentile : 12 MPH
 85th Percentile : 23 MPH
 95th Percentile : 28 MPH

Stats
 10 MPH Pace Speed : 6-15 MPH
 Number in Pace : 6391
 Percent in Pace : 47.3%
 Number of Vehicles > 40 MPH : 5
 Percent of Vehicles > 40 MPH : 0.0%
 Mean Speed(Average) : 15 MPH

Innovative Data, LLC

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	0	2	5	10	4	1	0	1	0	0	0	0	0	0	23	32	34
01:00	0	0	4	8	4	2	0	0	0	0	0	0	0	0	18	33	35
02:00	0	1	1	3	3	1	1	0	0	0	0	0	0	0	10	32	32
03:00	0	3	3	2	3	1	0	0	0	0	0	0	0	0	12	22	32
04:00	3	1	3	4	2	2	1	0	0	0	0	0	0	0	16	28	29
05:00	4	0	3	10	11	5	1	0	0	0	0	0	0	0	34	35	38
06:00	25	10	15	32	13	5	0	0	0	0	0	0	0	0	100	30	34
07:00	28	10	29	49	13	0	0	0	0	0	0	0	0	0	129	29	31
08:00	30	26	37	30	12	0	0	0	0	0	0	0	0	0	135	27	31
09:00	26	31	50	52	23	1	1	0	0	0	0	0	0	0	184	29	32
10:00	20	22	41	56	22	5	0	1	0	0	0	0	0	0	167	30	34
11:00	15	23	55	69	18	8	0	0	0	0	0	0	0	0	188	29	34
12 PM	27	19	46	67	36	5	1	0	0	0	0	0	0	0	201	31	34
13:00	10	17	54	76	30	4	0	0	0	0	0	0	0	0	191	31	34
14:00	13	26	64	78	45	6	0	0	0	0	0	0	0	0	232	31	34
15:00	27	34	86	56	19	2	1	0	0	0	0	0	0	0	225	28	31
16:00	53	47	74	107	29	1	0	0	0	0	0	0	0	0	311	28	31
17:00	17	33	81	130	32	1	0	0	0	0	0	0	0	0	294	29	32
18:00	10	22	55	89	47	10	1	1	0	0	0	0	0	0	235	32	35
19:00	27	33	44	53	28	7	0	0	0	0	0	0	0	0	192	30	34
20:00	19	24	64	49	17	4	0	0	0	0	0	0	0	0	177	29	33
21:00	6	14	28	39	17	1	1	0	0	0	0	0	0	0	106	30	33
22:00	11	12	21	47	11	3	2	0	0	0	0	0	0	0	107	29	33
23:00	3	8	17	20	17	4	1	0	0	0	0	0	0	0	70	33	36
Total	374	418	880	1136	456	79	11	3	0	0	0	0	0	0	3357		
Percent	11.1%	12.5%	26.2%	33.8%	13.6%	2.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	09:00	11:00	11:00	09:00	11:00	02:00	00:00							11:00		
Vol.	30	31	55	69	23	8	1	1							188		
PM Peak	16:00	16:00	15:00	17:00	18:00	18:00	22:00	18:00							16:00		
Vol.	53	47	86	130	47	10	2	1							311		

Innovative Data, LLC

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/06/15	3	1	6	6	9	4	2	0	0	0	0	0	0	0	31	37	39
01:00	1	1	8	6	6	0	0	0	0	0	0	0	0	0	22	32	34
02:00	0	1	2	3	3	4	0	0	0	0	0	0	0	0	13	36	38
03:00	0	1	0	4	3	2	0	0	0	0	0	0	0	0	10	32	33
04:00	1	1	2	1	3	3	0	0	0	0	0	0	0	0	11	37	37
05:00	7	3	4	9	13	3	2	0	0	0	0	0	0	0	41	33	35
06:00	15	7	18	37	26	4	1	0	0	0	0	0	0	0	108	32	34
07:00	18	17	35	42	26	2	0	0	0	0	0	0	0	0	140	30	33
08:00	46	24	45	38	6	2	0	0	0	0	0	0	0	0	161	26	30
09:00	34	22	36	52	19	3	1	0	0	0	0	0	0	0	167	29	32
10:00	11	20	51	49	16	3	0	0	0	0	0	0	0	0	150	29	32
11:00	23	24	63	48	15	1	0	0	0	0	0	0	0	0	174	28	32
12 PM	24	30	62	50	21	1	0	0	0	0	0	0	0	0	188	29	32
13:00	20	20	60	57	31	1	0	0	0	0	0	0	0	0	189	29	33
14:00	38	37	68	61	15	0	1	0	0	0	0	0	0	0	220	27	30
15:00	23	32	70	66	14	7	0	0	0	0	0	0	0	0	212	28	32
16:00	37	47	79	91	27	3	1	0	0	0	0	0	0	0	285	29	32
17:00	40	40	73	93	29	3	2	0	0	0	0	0	0	0	280	29	32
18:00	22	27	73	78	33	2	1	0	0	0	0	0	0	0	236	30	33
19:00	18	26	55	56	26	4	2	0	0	0	0	0	0	0	187	30	33
20:00	13	30	47	62	26	1	0	0	0	0	0	0	0	0	179	30	33
21:00	11	13	45	40	13	2	0	0	0	0	0	0	0	0	124	29	33
22:00	6	17	32	32	22	5	0	0	0	0	0	0	0	0	114	31	35
23:00	1	9	16	16	14	2	0	0	0	0	0	0	0	0	58	32	34
Total	412	450	950	997	416	62	13	0	0	0	0	0	0	0	3300		
Percent	12.5%	13.6%	28.8%	30.2%	12.6%	1.9%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	11:00	09:00	06:00	00:00	00:00									11:00	
Vol.	46	24	63	52	26	4	2									174	
PM Peak	17:00	16:00	16:00	17:00	18:00	15:00	17:00									16:00	
Vol.	40	47	79	93	33	7	2									285	

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/07/15	4	3	5	9	15	2	1	0	0	0	0	0	0	0	39	32	34
01:00	0	0	1	7	9	2	1	0	0	0	0	0	0	0	20	34	36
02:00	0	0	1	7	5	1	0	0	0	0	0	0	0	0	14	34	35
03:00	1	0	0	1	0	1	0	0	0	0	0	0	0	0	3	*	*
04:00	0	0	2	3	6	1	0	0	0	0	0	0	0	0	12	34	35
05:00	4	2	5	11	10	2	0	0	0	0	0	0	0	0	34	32	35
06:00	11	11	16	29	16	5	0	0	0	0	0	0	0	0	88	31	35
07:00	28	20	30	30	18	6	0	0	1	0	0	0	0	0	133	30	34
08:00	54	22	34	30	24	0	0	0	0	0	0	0	0	0	164	28	32
09:00	19	18	29	50	29	8	2	0	0	0	0	0	0	0	155	32	35
10:00	20	14	44	56	35	5	0	0	0	0	0	0	0	0	174	31	34
11:00	12	17	36	52	33	10	0	0	0	0	0	0	0	0	160	32	36
12 PM	31	17	44	53	17	2	0	0	0	0	0	0	0	0	164	28	32
13:00	25	22	38	69	34	4	0	0	0	0	0	0	0	0	192	30	34
14:00	20	35	70	58	27	3	0	0	0	0	0	0	0	0	213	29	33
15:00	41	38	62	51	18	2	0	0	0	0	0	0	0	0	212	27	31
16:00	31	37	94	95	24	0	0	0	0	0	0	0	0	0	281	28	31
17:00	57	41	86	68	30	6	1	0	0	0	0	0	0	0	289	28	33
18:00	25	23	48	81	34	6	0	0	0	0	0	0	0	0	217	30	34
19:00	15	29	56	64	31	3	0	0	0	0	0	0	0	0	198	30	33
20:00	25	28	72	66	20	2	0	0	0	0	0	0	0	0	213	28	32
21:00	8	23	45	41	18	5	0	0	0	0	0	0	0	0	140	30	34
22:00	11	20	38	36	17	3	0	0	0	0	0	0	0	0	125	29	33
23:00	1	9	13	21	17	6	1	0	0	0	0	0	0	0	68	33	37
Total	443	429	869	988	487	85	6	0	1	0	0	0	0	0	3308		
Percent	13.4%	13.0%	26.3%	29.9%	14.7%	2.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	10:00	10:00	10:00	11:00	09:00		07:00						10:00		
Vol.	54	22	44	56	35	10	2		1						174		
PM Peak	17:00	17:00	16:00	16:00	13:00	17:00	17:00								17:00		
Vol.	57	41	94	95	34	6	1								289		
Total	1229	1297	2699	3121	1359	226	30	3	1	0	0	0	0	0	9965		
Percent	12.3%	13.0%	27.1%	31.3%	13.6%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 10 MPH
 50th Percentile : 23 MPH
 85th Percentile : 30 MPH
 95th Percentile : 33 MPH

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 4675
 Percent in Pace : 46.9%
 Number of Vehicles > 40 MPH : 49
 Percent of Vehicles > 40 MPH : 0.5%
 Mean Speed(Average) : 22 MPH

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	14	7	16	15	7	1	0	1	0	0	0	0	0	0	61	29	33
01:00	3	0	8	13	6	2	1	0	0	0	0	0	0	0	33	32	35
02:00	5	3	4	5	4	1	1	0	0	0	0	0	0	0	23	29	32
03:00	11	5	6	8	3	1	0	0	0	0	0	0	0	0	34	27	30
04:00	22	4	9	9	5	2	1	0	0	0	0	0	0	0	52	27	32
05:00	31	2	16	28	19	6	1	0	0	0	0	0	0	0	103	31	35
06:00	108	29	57	65	18	7	0	1	0	0	0	0	0	0	285	27	31
07:00	226	74	91	79	18	0	0	0	0	0	0	0	0	0	488	24	28
08:00	314	76	62	33	12	0	0	0	0	0	0	0	0	0	497	19	26
09:00	132	76	108	90	23	2	1	0	0	0	0	0	0	0	432	26	30
10:00	107	80	103	90	28	5	0	1	0	0	0	0	0	0	414	27	31
11:00	97	80	138	106	22	8	0	0	0	0	0	0	0	0	451	27	31
12 PM	112	78	132	113	46	6	1	0	0	0	0	0	0	0	488	28	32
13:00	101	77	136	114	35	4	0	0	0	0	0	0	0	0	467	27	31
14:00	93	86	153	109	49	8	0	0	0	0	0	0	0	0	498	28	32
15:00	192	84	128	65	19	2	1	0	0	0	0	0	0	0	491	24	29
16:00	169	110	143	124	31	1	0	0	0	0	0	0	0	0	578	26	30
17:00	110	94	159	150	38	1	0	0	0	0	0	0	0	0	552	27	31
18:00	72	86	142	121	50	12	1	1	0	0	0	0	0	0	485	29	33
19:00	56	78	108	94	37	8	0	0	0	0	0	0	0	0	381	28	32
20:00	65	63	137	87	22	4	0	0	0	0	0	0	0	0	378	27	31
21:00	41	54	80	73	26	2	1	0	0	0	0	0	0	0	277	28	31
22:00	33	30	72	79	18	3	2	0	0	0	0	0	0	0	237	28	32
23:00	21	18	41	61	28	4	1	0	0	0	0	0	0	0	174	30	34
Total	2135	1294	2049	1731	564	90	12	4	0	0	0	0	0	0	7879		
Percent	27.1%	16.4%	26.0%	22.0%	7.2%	1.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	11:00	11:00	10:00	11:00	01:00	00:00							08:00		
Vol.	314	80	138	106	28	8	1	1							497		
PM Peak	15:00	16:00	17:00	17:00	18:00	18:00	22:00	18:00							16:00		
Vol.	192	110	159	150	50	12	2	1							578		

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
05/06/15	8	6	11	15	14	6	2	0	0	0	0	0	0	0	0	62	34	38
01:00	5	4	13	11	14	0	0	0	0	0	0	0	0	0	0	47	31	33
02:00	1	1	6	7	4	4	0	0	0	0	0	0	0	0	0	23	36	38
03:00	6	3	0	4	5	2	0	0	0	0	0	0	0	0	0	20	31	33
04:00	22	3	6	5	9	4	0	0	0	0	0	0	0	0	0	49	30	35
05:00	41	8	17	28	17	5	2	0	0	0	0	0	0	0	0	118	30	34
06:00	100	27	67	60	36	5	1	0	0	0	0	0	0	0	0	296	28	33
07:00	212	80	97	58	31	2	0	0	0	0	0	0	0	0	0	480	24	30
08:00	291	92	81	40	7	2	0	0	0	0	0	0	0	0	0	513	20	26
09:00	193	88	90	74	22	3	1	0	0	0	0	0	0	0	0	471	24	29
10:00	95	64	116	83	19	4	0	0	0	0	0	0	0	0	0	381	26	30
11:00	101	105	128	75	17	1	0	0	0	0	0	0	0	0	0	427	25	29
12 PM	123	89	125	81	30	1	0	0	0	0	0	0	0	0	0	449	26	30
13:00	90	70	135	97	37	2	0	0	0	0	0	0	0	0	0	431	27	31
14:00	182	104	126	81	16	0	1	0	0	0	0	0	0	0	0	510	24	28
15:00	173	92	126	82	14	8	0	0	0	0	0	0	0	0	0	495	25	29
16:00	129	105	132	126	31	4	1	0	0	0	0	0	0	0	0	528	27	30
17:00	172	99	133	105	29	3	2	0	0	0	0	0	0	0	0	543	26	30
18:00	112	81	147	108	37	2	1	0	0	0	0	0	0	0	0	488	27	31
19:00	94	81	123	88	33	4	2	0	0	0	0	0	0	0	0	425	27	31
20:00	48	89	111	93	30	2	0	0	0	0	0	0	0	0	0	373	27	31
21:00	50	45	89	60	17	2	0	0	0	0	0	0	0	0	0	263	27	30
22:00	28	39	66	61	28	5	0	0	0	0	0	0	0	0	0	227	29	33
23:00	11	18	34	40	20	4	0	0	0	0	0	0	0	0	0	127	30	34
Total	2287	1393	1979	1482	517	75	13	0	0	0	0	0	0	0	0	7746		
Percent	29.5%	18.0%	25.5%	19.1%	6.7%	1.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	11:00	10:00	06:00	00:00	00:00									08:00		
Vol.	291	105	128	83	36	6	2									513		
PM Peak	14:00	16:00	18:00	16:00	13:00	15:00	17:00									17:00		
Vol.	182	105	147	126	37	8	2									543		

Innovative Data, LLC

Location: Dickinson Street
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 Client: Tighe & Bond

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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/07/15	20	5	17	21	20	2	1	0	0	0	0	0	0	0	86	31	34
01:00	9	1	7	15	11	4	1	0	0	0	0	0	0	0	48	33	36
02:00	6	3	5	12	5	1	0	0	0	0	0	0	0	0	32	29	33
03:00	11	2	1	2	3	1	0	0	0	0	0	0	0	0	20	13	15
04:00	29	1	5	5	11	1	0	0	0	0	0	0	0	0	52	29	33
05:00	54	9	13	28	17	4	0	0	0	0	0	0	0	0	125	28	33
06:00	115	39	58	52	21	5	0	0	0	0	0	0	0	0	290	26	31
07:00	230	70	87	57	23	6	0	0	1	0	0	0	0	0	474	23	29
08:00	307	73	67	35	24	0	0	0	0	0	0	0	0	0	506	20	27
09:00	159	65	84	86	35	8	2	0	0	0	0	0	0	0	439	27	32
10:00	104	67	110	87	43	5	0	0	0	0	0	0	0	0	416	28	32
11:00	98	72	96	101	42	10	0	0	0	0	0	0	0	0	419	28	33
12 PM	116	80	104	99	26	2	0	0	0	0	0	0	0	0	427	27	30
13:00	117	80	98	105	43	4	0	0	0	0	0	0	0	0	447	28	31
14:00	106	114	140	80	29	3	0	0	0	0	0	0	0	0	472	26	30
15:00	192	82	97	62	20	3	0	0	0	0	0	0	0	0	456	24	29
16:00	162	93	145	119	29	0	1	0	0	0	0	0	0	0	549	26	30
17:00	213	99	137	85	35	6	1	0	0	0	0	0	0	0	576	25	30
18:00	125	66	115	113	39	6	0	0	0	0	0	0	0	0	464	28	31
19:00	77	89	128	94	35	4	0	0	0	0	0	0	0	0	427	27	32
20:00	64	82	146	97	25	3	0	0	0	0	0	0	0	0	417	27	30
21:00	22	66	115	70	25	5	0	0	0	0	0	0	0	0	303	28	32
22:00	41	38	92	55	22	3	0	0	0	0	0	0	0	0	251	28	31
23:00	20	20	33	49	23	10	1	0	0	0	0	0	0	0	156	31	35
Total	2397	1316	1900	1529	606	96	7	0	1	0	0	0	0	0	7852		
Percent	30.5%	16.8%	24.2%	19.5%	7.7%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	10:00	11:00	10:00	11:00	09:00		07:00								08:00
Vol.	307	73	110	101	43	10	2		1								506
PM Peak	17:00	14:00	20:00	16:00	13:00	23:00	16:00										17:00
Vol.	213	114	146	119	43	10	1										576
Total	6819	4003	5928	4742	1687	261	32	4	1	0	0	0	0	0	23477		
Percent	29.0%	17.1%	25.3%	20.2%	7.2%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 6 MPH
 50th Percentile : 16 MPH
 85th Percentile : 27 MPH
 95th Percentile : 31 MPH

Stats
 10 MPH Pace Speed : 6-15 MPH
 Number in Pace : 8766
 Percent in Pace : 37.3%
 Number of Vehicles > 40 MPH : 49
 Percent of Vehicles > 40 MPH : 0.2%
 Mean Speed(Average) : 17 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	2	25	1	0	0	0	0	0	0	0	0	0	0	10	38
01:00	1	11	1	0	0	0	0	0	0	0	0	0	0	2	15
02:00	4	6	1	0	0	0	0	0	0	0	0	0	0	2	13
03:00	1	9	4	0	0	0	0	0	0	0	0	0	0	8	22
04:00	5	12	2	0	0	0	0	0	0	0	0	0	0	17	36
05:00	3	29	9	0	3	2	0	0	0	0	0	0	0	23	69
06:00	16	89	6	3	4	0	0	0	0	0	0	0	0	67	185
07:00	23	182	13	2	8	2	0	2	0	0	0	0	0	127	359
08:00	16	150	21	4	2	5	0	0	0	0	0	0	0	164	362
09:00	11	140	16	0	5	2	0	0	0	0	0	0	0	74	248
10:00	18	147	23	0	6	2	0	0	0	0	0	0	0	51	247
11:00	12	179	17	0	3	2	0	3	0	0	0	0	0	47	263
12 PM	9	205	14	0	6	2	0	0	0	0	0	0	0	51	287
13:00	10	178	22	0	7	2	0	0	0	0	0	0	0	57	276
14:00	6	180	21	3	4	0	0	0	0	0	0	0	0	52	266
15:00	5	141	20	1	2	2	0	1	0	0	0	0	0	94	266
16:00	10	170	20	2	6	1	0	1	0	0	0	0	0	57	267
17:00	9	179	13	0	2	2	0	0	0	0	0	0	0	53	258
18:00	3	197	16	0	4	0	0	0	0	0	0	0	0	30	250
19:00	2	158	12	0	3	1	0	0	0	0	0	0	0	13	189
20:00	3	160	7	0	2	1	0	1	0	0	0	0	0	27	201
21:00	9	137	6	0	1	0	0	0	0	0	0	0	0	18	171
22:00	3	97	8	0	2	0	0	0	0	0	0	0	0	20	130
23:00	0	85	2	0	1	0	0	0	0	0	0	0	0	16	104
Total	181	2866	275	15	71	26	0	8	0	0	0	0	0	1080	4522
Percent	4.0%	63.4%	6.1%	0.3%	1.6%	0.6%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	23.9%	
AM Peak	07:00	07:00	10:00	08:00	07:00	08:00		11:00						08:00	
Vol.	23	182	23	4	8	5		3						164	
PM Peak	13:00	12:00	13:00	14:00	13:00	12:00		15:00						15:00	
Vol.	10	205	22	3	7	2		1						94	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

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Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	26	1	0	0	0	0	0	0	0	0	0	0	4	31
01:00	0	20	1	0	0	0	0	0	0	0	0	0	0	4	25
02:00	0	8	1	0	0	0	0	0	0	0	0	0	0	1	10
03:00	1	4	0	0	0	0	0	0	0	0	0	0	0	5	10
04:00	5	14	2	0	0	0	0	0	0	0	0	0	0	17	38
05:00	6	30	9	0	2	0	0	1	0	0	0	0	0	29	77
06:00	13	92	12	3	4	0	0	0	0	0	0	0	0	64	188
07:00	21	171	14	1	8	0	0	0	0	0	0	0	0	125	340
08:00	23	173	17	2	3	2	0	1	0	0	0	0	0	131	352
09:00	22	160	26	1	2	1	0	1	0	0	0	0	0	91	304
10:00	9	143	20	0	3	1	0	1	0	0	0	0	0	54	231
11:00	6	175	22	0	4	1	0	1	0	0	0	0	0	44	253
12 PM	8	150	32	0	9	5	0	0	0	0	0	0	0	57	261
13:00	8	168	21	0	2	1	0	1	0	0	0	0	0	41	242
14:00	13	167	20	2	7	3	0	1	0	0	0	0	0	77	290
15:00	8	163	26	1	4	2	0	1	0	0	0	0	0	78	283
16:00	8	151	19	2	2	1	0	0	0	0	0	0	0	60	243
17:00	15	161	14	2	4	0	0	1	0	0	0	0	0	66	263
18:00	11	172	17	0	2	0	0	0	0	0	0	0	0	50	252
19:00	8	173	10	1	2	1	0	1	0	0	0	0	0	42	238
20:00	1	160	10	0	0	1	0	0	0	0	0	0	0	22	194
21:00	5	105	2	0	4	1	0	0	1	0	0	0	0	21	139
22:00	3	94	4	0	0	0	0	0	0	0	0	0	0	12	113
23:00	1	63	0	0	1	0	0	0	0	0	0	0	0	4	69
Total	195	2743	300	15	63	20	0	10	1	0	0	0	0	1099	4446
Percent	4.4%	61.7%	6.7%	0.3%	1.4%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	24.7%	
AM Peak	08:00	11:00	09:00	06:00	07:00	08:00		05:00						08:00	
Vol.	23	175	26	3	8	2		1						131	
PM Peak	17:00	19:00	12:00	14:00	12:00	12:00		13:00	21:00					15:00	
Vol.	15	173	32	2	9	5		1	1					78	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	4	32	0	0	1	0	0	0	0	0	0	0	0	10	47
01:00	3	19	1	0	0	0	0	0	0	0	0	0	0	5	28
02:00	3	11	1	0	0	0	0	0	0	0	0	0	0	3	18
03:00	2	7	1	0	0	0	0	0	0	0	0	0	0	7	17
04:00	6	10	2	0	0	0	0	0	0	0	0	0	0	22	40
05:00	10	29	10	0	1	1	0	0	0	0	0	0	0	40	91
06:00	18	93	11	3	3	0	0	0	0	0	0	0	0	74	202
07:00	20	175	12	2	4	3	0	0	0	0	0	0	0	125	341
08:00	20	151	17	3	8	0	0	0	0	0	0	0	0	143	342
09:00	10	150	18	1	6	0	0	0	0	0	0	0	0	99	284
10:00	10	153	11	1	5	2	0	0	0	0	0	0	0	60	242
11:00	7	181	16	0	4	0	0	0	0	0	0	0	0	51	259
12 PM	5	180	22	1	6	0	0	1	0	0	0	0	0	48	263
13:00	4	161	22	0	7	1	0	0	0	0	0	0	0	60	255
14:00	2	182	21	1	4	3	0	0	0	0	0	0	0	46	259
15:00	10	133	16	0	8	3	0	0	0	0	0	0	0	74	244
16:00	12	154	17	4	4	2	0	1	0	0	0	0	0	74	268
17:00	14	175	13	0	2	2	0	0	0	0	0	0	0	81	287
18:00	15	158	15	2	3	0	0	0	0	0	0	0	0	54	247
19:00	3	189	10	1	2	1	0	0	0	0	0	0	0	23	229
20:00	5	168	8	0	2	0	0	0	0	0	0	0	0	21	204
21:00	3	149	6	0	0	0	0	0	0	0	0	0	0	5	163
22:00	2	99	8	0	0	0	0	0	0	0	0	0	0	17	126
23:00	4	71	3	0	0	0	0	0	0	0	0	0	0	10	88
Total	192	2830	261	19	70	18	0	2	0	0	0	0	0	1152	4544
Percent	4.2%	62.3%	5.7%	0.4%	1.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.4%	
AM Peak	07:00	11:00	09:00	06:00	08:00	07:00								08:00	
Vol.	20	181	18	3	8	3								143	
PM Peak	18:00	19:00	12:00	16:00	15:00	14:00		12:00						17:00	
Vol.	15	189	22	4	8	3		1						81	
Grand Total	568	8439	836	49	204	64	0	20	1	0	0	0	0	3331	13512
Percent	4.2%	62.5%	6.2%	0.4%	1.5%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	24.7%	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	20	2	0	1	0	0	0	0	0	0	0	0	0	23
01:00	0	16	2	0	0	0	0	0	0	0	0	0	0	0	18
02:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
03:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
04:00	0	12	2	0	0	1	0	0	0	0	0	0	0	1	16
05:00	0	19	8	0	3	0	0	0	0	0	0	0	0	4	34
06:00	0	59	13	7	4	0	0	0	0	0	0	0	0	17	100
07:00	3	73	21	2	5	0	0	1	0	0	0	0	0	24	129
08:00	4	77	18	4	6	0	0	0	0	0	0	0	0	26	135
09:00	2	130	29	0	5	0	0	2	0	0	0	0	0	16	184
10:00	2	112	34	0	4	3	0	0	1	0	0	0	0	11	167
11:00	2	144	27	3	4	0	0	0	0	0	0	0	0	8	188
12 PM	4	150	19	0	3	1	0	1	0	0	0	0	0	23	201
13:00	1	150	28	0	2	2	0	0	0	0	0	0	0	8	191
14:00	1	173	40	2	5	2	0	1	0	0	0	0	0	8	232
15:00	0	166	25	1	6	3	0	1	1	0	0	0	0	22	225
16:00	2	232	36	4	6	0	0	1	0	1	0	0	0	29	311
17:00	4	240	31	1	2	0	0	0	0	0	0	0	0	16	294
18:00	3	197	25	0	3	1	0	0	0	0	0	0	0	6	235
19:00	4	151	17	0	3	0	0	0	0	0	0	0	0	17	192
20:00	3	145	13	0	2	0	0	0	0	0	0	0	0	14	177
21:00	1	91	9	0	2	0	0	0	0	0	0	0	0	3	106
22:00	1	93	5	0	2	1	0	0	0	0	0	0	0	5	107
23:00	1	63	5	0	1	0	0	0	0	0	0	0	0	0	70
Total	38	2533	411	24	69	14	0	7	2	1	0	0	0	258	3357
Percent	1.1%	75.5%	12.2%	0.7%	2.1%	0.4%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	7.7%	
AM Peak	08:00	11:00	10:00	06:00	08:00	10:00		09:00	10:00					08:00	
Vol.	4	144	34	7	6	3		2	1					26	
PM Peak	12:00	17:00	14:00	16:00	15:00	15:00		12:00	15:00	16:00				16:00	
Vol.	4	240	40	4	6	3		1	1	1				29	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	23	5	0	0	0	0	0	0	0	0	0	0	2	31
01:00	0	18	3	0	0	0	0	0	0	0	0	0	0	1	22
02:00	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13
03:00	0	8	1	0	1	0	0	0	0	0	0	0	0	0	10
04:00	0	8	2	0	0	0	0	0	0	0	0	0	0	1	11
05:00	2	25	8	0	1	0	0	0	0	0	0	0	0	5	41
06:00	0	66	21	8	4	0	0	0	0	0	0	0	0	9	108
07:00	1	94	24	0	5	1	0	1	0	0	0	0	0	14	140
08:00	6	92	18	2	5	0	0	0	0	0	0	0	0	38	161
09:00	2	104	25	0	5	0	0	0	1	0	0	0	0	30	167
10:00	1	111	24	0	5	0	0	0	0	0	0	0	0	9	150
11:00	2	127	23	1	8	0	0	1	0	0	0	0	0	12	174
12 PM	1	143	28	0	3	0	0	0	0	0	0	0	0	13	188
13:00	2	156	17	0	3	2	0	1	0	0	0	0	0	8	189
14:00	4	154	22	4	6	1	0	1	0	0	1	0	0	27	220
15:00	2	163	24	2	5	0	0	0	0	0	0	0	0	16	212
16:00	7	205	35	6	7	3	0	0	0	0	0	0	0	22	285
17:00	5	216	25	1	6	0	0	2	0	0	0	0	0	25	280
18:00	2	189	26	2	3	0	0	1	0	0	0	0	0	13	236
19:00	7	144	24	0	2	0	0	1	0	0	0	0	0	9	187
20:00	3	152	16	0	2	1	0	0	0	0	0	0	0	5	179
21:00	0	104	13	0	2	0	0	0	0	0	0	0	0	5	124
22:00	1	101	9	0	1	0	0	0	0	0	0	0	0	2	114
23:00	0	49	9	0	0	0	0	0	0	0	0	0	0	0	58
Total	49	2465	402	26	74	8	0	8	1	0	1	0	0	266	3300
Percent	1.5%	74.7%	12.2%	0.8%	2.2%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	8.1%	
AM Peak	08:00	11:00	09:00	06:00	11:00	07:00		07:00	09:00					08:00	
Vol.	6	127	25	8	8	1		1	1					38	
PM Peak	16:00	17:00	16:00	16:00	16:00	16:00		17:00			14:00			14:00	
Vol.	7	216	35	6	7	3		2			1			27	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	1	32	4	0	1	0	0	0	0	0	0	0	0	1	39
01:00	1	18	1	0	0	0	0	0	0	0	0	0	0	0	20
02:00	0	12	1	0	1	0	0	0	0	0	0	0	0	0	14
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	1	3
04:00	0	8	4	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	23	8	0	0	0	0	0	0	0	0	0	0	3	34
06:00	0	56	14	6	3	1	0	0	0	0	0	0	0	8	88
07:00	2	83	15	0	6	1	0	1	0	0	0	0	0	25	133
08:00	8	90	19	3	6	0	0	0	1	0	0	0	0	37	164
09:00	3	104	26	1	5	1	0	0	1	0	0	0	0	14	155
10:00	2	131	24	0	2	0	0	1	0	0	0	0	0	14	174
11:00	0	115	24	1	4	1	0	3	0	0	0	0	0	12	160
12 PM	3	120	21	0	5	0	0	0	0	0	0	0	0	15	164
13:00	4	138	24	0	7	1	0	1	0	0	0	0	0	17	192
14:00	1	166	29	3	4	0	0	2	0	0	0	0	0	8	213
15:00	8	153	16	1	3	0	0	0	0	0	0	1	0	30	212
16:00	3	227	22	6	5	0	0	1	0	0	0	0	0	17	281
17:00	8	222	15	2	1	3	0	0	0	0	0	0	0	38	289
18:00	5	162	22	0	6	0	0	1	0	0	0	0	0	21	217
19:00	2	163	26	1	1	0	0	0	0	0	0	0	0	5	198
20:00	3	175	21	0	2	0	0	1	0	0	0	0	0	11	213
21:00	1	118	13	1	0	0	0	1	0	0	0	0	0	6	140
22:00	3	101	12	0	0	0	0	0	0	0	0	0	0	9	125
23:00	0	59	8	0	0	0	0	0	0	0	0	0	0	1	68
Total	58	2478	369	25	62	8	0	12	2	0	0	1	0	293	3308
Percent	1.8%	74.9%	11.2%	0.8%	1.9%	0.2%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	8.9%	
AM Peak	08:00	10:00	09:00	06:00	07:00	06:00		11:00	08:00					08:00	
Vol.	8	131	26	6	6	1		3	1					37	
PM Peak	15:00	16:00	14:00	16:00	13:00	17:00		14:00				15:00		17:00	
Vol.	8	227	29	6	7	3		2				1		38	
Grand Total	145	7476	1182	75	205	30	0	27	5	1	1	1	0	817	9965
Percent	1.5%	75.0%	11.9%	0.8%	2.1%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	8.2%	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	2	45	3	0	1	0	0	0	0	0	0	0	0	10	61
01:00	1	27	3	0	0	0	0	0	0	0	0	0	0	2	33
02:00	4	16	1	0	0	0	0	0	0	0	0	0	0	2	23
03:00	1	19	6	0	0	0	0	0	0	0	0	0	0	8	34
04:00	5	24	4	0	0	1	0	0	0	0	0	0	0	18	52
05:00	3	48	17	0	6	2	0	0	0	0	0	0	0	27	103
06:00	16	148	19	10	8	0	0	0	0	0	0	0	0	84	285
07:00	26	255	34	4	13	2	0	3	0	0	0	0	0	151	488
08:00	20	227	39	8	8	5	0	0	0	0	0	0	0	190	497
09:00	13	270	45	0	10	2	0	2	0	0	0	0	0	90	432
10:00	20	259	57	0	10	5	0	0	1	0	0	0	0	62	414
11:00	14	323	44	3	7	2	0	3	0	0	0	0	0	55	451
12 PM	13	355	33	0	9	3	0	1	0	0	0	0	0	74	488
13:00	11	328	50	0	9	4	0	0	0	0	0	0	0	65	467
14:00	7	353	61	5	9	2	0	1	0	0	0	0	0	60	498
15:00	5	307	45	2	8	5	0	2	1	0	0	0	0	116	491
16:00	12	402	56	6	12	1	0	2	0	1	0	0	0	86	578
17:00	13	419	44	1	4	2	0	0	0	0	0	0	0	69	552
18:00	6	394	41	0	7	1	0	0	0	0	0	0	0	36	485
19:00	6	309	29	0	6	1	0	0	0	0	0	0	0	30	381
20:00	6	305	20	0	4	1	0	1	0	0	0	0	0	41	378
21:00	10	228	15	0	3	0	0	0	0	0	0	0	0	21	277
22:00	4	190	13	0	4	1	0	0	0	0	0	0	0	25	237
23:00	1	148	7	0	2	0	0	0	0	0	0	0	0	16	174
Total	219	5399	686	39	140	40	0	15	2	1	0	0	0	1338	7879
Percent	2.8%	68.5%	8.7%	0.5%	1.8%	0.5%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	
AM Peak	07:00	11:00	10:00	06:00	07:00	08:00		07:00	10:00					08:00	
Vol.	26	323	57	10	13	5		3	1					190	
PM Peak	12:00	17:00	14:00	16:00	16:00	15:00		15:00	15:00	16:00				15:00	
Vol.	13	419	61	6	12	5		2	1	1				116	

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Dickinson Street

Location: between Sumner & Cliftwood

Location: Springfield, Massachusetts

Client: Tighe & Bond

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	1	49	6	0	0	0	0	0	0	0	0	0	0	6	62
01:00	0	38	4	0	0	0	0	0	0	0	0	0	0	5	47
02:00	0	21	1	0	0	0	0	0	0	0	0	0	0	1	23
03:00	1	12	1	0	1	0	0	0	0	0	0	0	0	5	20
04:00	5	22	4	0	0	0	0	0	0	0	0	0	0	18	49
05:00	8	55	17	0	3	0	0	1	0	0	0	0	0	34	118
06:00	13	158	33	11	8	0	0	0	0	0	0	0	0	73	296
07:00	22	265	38	1	13	1	0	1	0	0	0	0	0	139	480
08:00	29	265	35	4	8	2	0	1	0	0	0	0	0	169	513
09:00	24	264	51	1	7	1	0	1	1	0	0	0	0	121	471
10:00	10	254	44	0	8	1	0	1	0	0	0	0	0	63	381
11:00	8	302	45	1	12	1	0	2	0	0	0	0	0	56	427
12 PM	9	293	60	0	12	5	0	0	0	0	0	0	0	70	449
13:00	10	324	38	0	5	3	0	2	0	0	0	0	0	49	431
14:00	17	321	42	6	13	4	0	2	0	0	1	0	0	104	510
15:00	10	326	50	3	9	2	0	1	0	0	0	0	0	94	495
16:00	15	356	54	8	9	4	0	0	0	0	0	0	0	82	528
17:00	20	377	39	3	10	0	0	3	0	0	0	0	0	91	543
18:00	13	361	43	2	5	0	0	1	0	0	0	0	0	63	488
19:00	15	317	34	1	4	1	0	2	0	0	0	0	0	51	425
20:00	4	312	26	0	2	2	0	0	0	0	0	0	0	27	373
21:00	5	209	15	0	6	1	0	0	1	0	0	0	0	26	263
22:00	4	195	13	0	1	0	0	0	0	0	0	0	0	14	227
23:00	1	112	9	0	1	0	0	0	0	0	0	0	0	4	127
Total	244	5208	702	41	137	28	0	18	2	0	1	0	0	1365	7746
Percent	3.2%	67.2%	9.1%	0.5%	1.8%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	17.6%	
AM Peak	08:00	11:00	09:00	06:00	07:00	08:00		11:00	09:00					08:00	
Vol.	29	302	51	11	13	2		2	1					169	
PM Peak	17:00	17:00	12:00	16:00	14:00	12:00		17:00	21:00		14:00			14:00	
Vol.	20	377	60	8	13	5		3	1		1			104	

Innovative Data, LLC

Location: Dickinson Street
 Location: between Sumner & Cliftwood
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	5	64	4	0	2	0	0	0	0	0	0	0	0	11	86
01:00	4	37	2	0	0	0	0	0	0	0	0	0	0	5	48
02:00	3	23	2	0	1	0	0	0	0	0	0	0	0	3	32
03:00	2	9	1	0	0	0	0	0	0	0	0	0	0	8	20
04:00	6	18	6	0	0	0	0	0	0	0	0	0	0	22	52
05:00	10	52	18	0	1	1	0	0	0	0	0	0	0	43	125
06:00	18	149	25	9	6	1	0	0	0	0	0	0	0	82	290
07:00	22	258	27	2	10	4	0	1	0	0	0	0	0	150	474
08:00	28	241	36	6	14	0	0	0	1	0	0	0	0	180	506
09:00	13	254	44	2	11	1	0	0	1	0	0	0	0	113	439
10:00	12	284	35	1	7	2	0	1	0	0	0	0	0	74	416
11:00	7	296	40	1	8	1	0	3	0	0	0	0	0	63	419
12 PM	8	300	43	1	11	0	0	1	0	0	0	0	0	63	427
13:00	8	299	46	0	14	2	0	1	0	0	0	0	0	77	447
14:00	3	348	50	4	8	3	0	2	0	0	0	0	0	54	472
15:00	18	286	32	1	11	3	0	0	0	0	0	1	0	104	456
16:00	15	381	39	10	9	2	0	2	0	0	0	0	0	91	549
17:00	22	397	28	2	3	5	0	0	0	0	0	0	0	119	576
18:00	20	320	37	2	9	0	0	1	0	0	0	0	0	75	464
19:00	5	352	36	2	3	1	0	0	0	0	0	0	0	28	427
20:00	8	343	29	0	4	0	0	1	0	0	0	0	0	32	417
21:00	4	267	19	1	0	0	0	1	0	0	0	0	0	11	303
22:00	5	200	20	0	0	0	0	0	0	0	0	0	0	26	251
23:00	4	130	11	0	0	0	0	0	0	0	0	0	0	11	156
Total	250	5308	630	44	132	26	0	14	2	0	0	1	0	1445	7852
Percent	3.2%	67.6%	8.0%	0.6%	1.7%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	18.4%	
AM Peak	08:00	11:00	09:00	06:00	08:00	07:00		11:00	08:00					08:00	
Vol.	28	296	44	9	14	4		3	1					180	
PM Peak	17:00	17:00	14:00	16:00	13:00	17:00		14:00				15:00		17:00	
Vol.	22	397	50	10	14	5		2				1		119	
Grand Total	713	15915	2018	124	409	94	0	47	6	1	1	1	0	4148	23477
Percent	3.0%	67.8%	8.6%	0.5%	1.7%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	17.7%	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedatalc.com or 1.413.668.5094

Start Time	05-May-1 Tue		Northbound		Southbound		Combined		06-May Wed	Northbound		Southbound		Combined	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	0	6	0	19	0	25	0	9	0	12	0	21			
12:15	0	9	0	24	0	33	0	10	0	15	0	25			
12:30	0	12	0	15	0	27	0	10	0	10	0	20			
12:45	0	14	0	23	0	37	0	11	0	12	0	23			
01:00	0	20	0	30	0	50	0	8	0	20	0	28			
01:15	0	15	0	16	0	31	0	4	0	23	0	27			
01:30	0	22	0	23	0	45	0	8	0	18	0	26			
01:45	0	21	0	19	0	40	0	20	0	13	0	33			
02:00	0	17	0	17	0	34	0	8	0	11	0	19			
02:15	0	10	0	15	0	25	0	13	0	10	0	23			
02:30	0	15	0	21	0	36	0	9	0	14	0	23			
02:45	0	13	0	17	0	30	0	11	0	24	0	35			
03:00	0	11	0	19	0	30	0	10	0	26	0	36			
03:15	0	13	0	15	0	28	0	8	0	18	0	26			
03:30	0	14	0	20	0	34	0	14	0	15	0	29			
03:45	0	8	0	11	0	19	0	9	0	21	0	30			
04:00	0	14	0	22	0	36	0	7	0	16	0	23			
04:15	0	15	0	22	0	37	0	12	0	24	0	36			
04:30	0	13	0	20	0	33	0	14	0	14	0	28			
04:45	0	13	0	24	0	37	0	17	0	46	0	63			
05:00	0	16	0	48	0	64	0	14	0	49	0	63			
05:15	0	22	0	53	0	75	0	12	0	46	0	58			
05:30	0	15	0	23	0	38	0	22	0	57	0	79			
05:45	0	28	0	37	0	65	0	20	0	47	0	67			
06:00	2	23	4	35	6	58	0	27	0	42	0	69			
06:15	0	22	0	19	0	41	0	18	0	30	0	48			
06:30	2	17	3	23	5	40	0	36	4	28	4	64			
06:45	1	14	8	17	9	31	0	20	7	25	7	45			
07:00	4	21	5	13	9	34	2	21	11	19	13	40			
07:15	2	25	7	10	9	35	1	37	3	15	4	52			
07:30	3	15	6	6	9	21	4	35	6	9	10	44			
07:45	1	27	6	4	7	31	1	46	4	13	5	59			
08:00	5	47	6	22	11	69	5	15	8	22	13	37			
08:15	4	17	4	15	8	32	0	7	6	7	6	14			
08:30	3	4	8	3	11	7	3	1	10	1	13	2			
08:45	3	0	13	0	16	0	7	1	12	0	19	1			
09:00	4	0	13	0	17	0	4	0	11	0	15	0			
09:15	4	1	8	1	12	2	11	0	14	0	25	0			
09:30	11	0	6	0	17	0	11	0	10	0	21	0			
09:45	5	0	9	0	14	0	10	0	9	0	19	0			
10:00	3	0	8	0	11	0	6	0	14	0	20	0			
10:15	9	0	8	0	17	0	9	0	10	0	19	0			
10:30	2	0	9	0	11	0	9	0	11	0	20	0			
10:45	3	0	14	0	17	0	9	0	15	0	24	0			
11:00	8	0	22	0	30	0	7	0	6	0	13	0			
11:15	12	0	12	0	24	0	9	0	13	0	22	0			
11:30	9	0	12	0	21	0	7	0	5	0	12	0			
11:45	9	0	14	0	23	0	5	0	14	0	19	0			
Total	109	589	205	721	314	1310		120	544	203	772	323	1316		
Day Total	698		926		1624			664		975		1639			
% Total	6.7%	36.3%	12.6%	44.4%			7.3%	33.2%	12.4%	47.1%					
Peak	11:00	07:15	10:45	05:00	11:00	05:00		09:15	07:00	10:00	05:00	09:15	05:15		
Vol.	38	114	60	161	98	242		38	139	50	199	85	273		
P.H.F.	0.792	0.606	0.682	0.759	0.817	0.807		0.864	0.755	0.833	0.873	0.850	0.864		

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	07-May-1		Northbound		Southbound		Combined		08-May	Northbound		Southbound		Combined	
	Thu		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		Fri	A.M.	P.M.	A.M.	P.M.	A.M.
12:00			0	16	0	25	0	41		0	*	0	*	0	*
12:15			0	15	0	14	0	29		*	*	*	*	*	*
12:30			0	14	0	14	0	28		*	*	*	*	*	*
12:45			0	13	0	18	0	31		*	*	*	*	*	*
01:00			0	9	0	23	0	32		*	*	*	*	*	*
01:15			0	10	0	20	0	30		*	*	*	*	*	*
01:30			0	14	0	19	0	33		*	*	*	*	*	*
01:45			0	13	0	9	0	22		*	*	*	*	*	*
02:00			0	13	0	16	0	29		*	*	*	*	*	*
02:15			0	17	0	13	0	30		*	*	*	*	*	*
02:30			0	15	0	14	0	29		*	*	*	*	*	*
02:45			0	11	0	13	0	24		*	*	*	*	*	*
03:00			0	6	0	14	0	20		*	*	*	*	*	*
03:15			0	6	0	23	0	29		*	*	*	*	*	*
03:30			0	17	0	29	0	46		*	*	*	*	*	*
03:45			0	9	0	27	0	36		*	*	*	*	*	*
04:00			0	6	0	34	0	40		*	*	*	*	*	*
04:15			0	11	0	31	0	42		*	*	*	*	*	*
04:30			0	9	0	23	0	32		*	*	*	*	*	*
04:45			0	5	0	23	0	28		*	*	*	*	*	*
05:00			0	15	0	32	0	47		*	*	*	*	*	*
05:15			0	18	0	47	0	65		*	*	*	*	*	*
05:30			0	16	0	37	0	53		*	*	*	*	*	*
05:45			0	9	0	11	0	20		*	*	*	*	*	*
06:00			0	0	0	0	0	0		*	*	*	*	*	*
06:15			0	0	0	0	0	0		*	*	*	*	*	*
06:30			0	0	4	0	4	0		*	*	*	*	*	*
06:45			0	0	8	0	8	0		*	*	*	*	*	*
07:00			4	0	8	0	12	0		*	*	*	*	*	*
07:15			4	0	4	0	8	0		*	*	*	*	*	*
07:30			1	0	3	0	4	0		*	*	*	*	*	*
07:45			4	0	10	0	14	0		*	*	*	*	*	*
08:00			1	0	14	0	15	0		*	*	*	*	*	*
08:15			4	0	10	0	14	0		*	*	*	*	*	*
08:30			5	0	8	0	13	0		*	*	*	*	*	*
08:45			7	0	9	0	16	0		*	*	*	*	*	*
09:00			9	0	12	0	21	0		*	*	*	*	*	*
09:15			9	0	12	0	21	0		*	*	*	*	*	*
09:30			6	0	14	0	20	0		*	*	*	*	*	*
09:45			8	0	16	0	24	0		*	*	*	*	*	*
10:00			4	0	17	0	21	0		*	*	*	*	*	*
10:15			12	0	16	0	28	0		*	*	*	*	*	*
10:30			6	0	17	0	23	0		*	*	*	*	*	*
10:45			6	0	13	0	19	0		*	*	*	*	*	*
11:00			8	0	12	0	20	0		*	*	*	*	*	*
11:15			15	0	11	0	26	0		*	*	*	*	*	*
11:30			7	0	18	0	25	0		*	*	*	*	*	*
11:45			13	0	11	0	24	0		*	*	*	*	*	*
Total			133	287	247	529	380	816		0	0	0	0	0	0
Day Total			420		776		1196			0	0	0	0	0	0
% Total			11.1%	24.0%	20.7%	44.2%				0.0%	0.0%	0.0%	0.0%		
Peak			11:00	12:00	09:45	04:45	09:45	04:45							
Vol.			43	58	66	139	96	193							
P.H.F.			0.717	0.906	0.971	0.739	0.857	0.742							
ADT			ADT 1,486		AADT 1,486										

Innovative Data, LLC

Location: Forest Park Entrance
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PO Box 468
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Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	3	1	1	0	0	0	0	0	0	0	0	0	0	0	5	*	*
07:00	2	3	3	2	0	0	0	0	0	0	0	0	0	0	10	*	*
08:00	4	6	4	1	0	0	0	0	0	0	0	0	0	0	15	20	22
09:00	21	3	0	0	0	0	0	0	0	0	0	0	0	0	24	13	15
10:00	6	9	1	1	0	0	0	0	0	0	0	0	0	0	17	18	20
11:00	9	14	11	4	0	0	0	0	0	0	0	0	0	0	38	22	26
12 PM	7	14	13	6	1	0	0	0	0	0	0	0	0	0	41	24	28
13:00	8	32	30	8	0	0	0	0	0	0	0	0	0	0	78	23	26
14:00	9	27	11	8	0	0	0	0	0	0	0	0	0	0	55	22	27
15:00	10	15	16	5	0	0	0	0	0	0	0	0	0	0	46	23	26
16:00	16	20	15	4	0	0	0	0	0	0	0	0	0	0	55	21	25
17:00	40	27	11	3	0	0	0	0	0	0	0	0	0	0	81	19	23
18:00	26	30	13	7	0	0	0	0	0	0	0	0	0	0	76	21	26
19:00	42	26	17	2	1	0	0	0	0	0	0	0	0	0	88	19	23
20:00	61	5	1	1	0	0	0	0	0	0	0	0	0	0	68	12	15
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	264	233	147	52	2	0	0	0	0	0	0	0	0	0	698		
Percent	37.8%	33.4%	21.1%	7.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	11:00	11:00	11:00											11:00		
Vol.	21	14	11	4											38		
PM Peak	20:00	13:00	13:00	13:00	12:00										19:00		
Vol.	61	32	30	8	1										88		

Innovative Data, LLC

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 Location: Springfield, Massachusetts
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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
07:00	1	3	2	1	1	0	0	0	0	0	0	0	0	0	8	*	*
08:00	5	7	3	0	0	0	0	0	0	0	0	0	0	0	15	19	21
09:00	14	17	3	2	0	0	0	0	0	0	0	0	0	0	36	18	20
10:00	15	13	4	1	0	0	0	0	0	0	0	0	0	0	33	18	21
11:00	10	13	5	0	0	0	0	0	0	0	0	0	0	0	28	19	22
12 PM	18	10	11	1	0	0	0	0	0	0	0	0	0	0	40	20	24
13:00	8	22	8	2	0	0	0	0	0	0	0	0	0	0	40	21	24
14:00	13	21	1	6	0	0	0	0	0	0	0	0	0	0	41	19	26
15:00	11	17	9	4	0	0	0	0	0	0	0	0	0	0	41	22	26
16:00	15	13	18	4	0	0	0	0	0	0	0	0	0	0	50	22	25
17:00	24	28	14	2	0	0	0	0	0	0	0	0	0	0	68	20	23
18:00	30	42	25	4	0	0	0	0	0	0	0	0	0	0	101	21	24
19:00	67	49	20	3	0	0	0	0	0	0	0	0	0	0	139	19	22
20:00	16	5	3	0	0	0	0	0	0	0	0	0	0	0	24	16	18
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	247	260	126	30	1	0	0	0	0	0	0	0	0	0	664		
Percent	37.2%	39.2%	19.0%	4.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	09:00	11:00	09:00	07:00												09:00
Vol.	15	17	5	2	1												36
PM Peak	19:00	19:00	18:00	14:00													19:00
Vol.	67	49	25	6													139

Innovative Data, LLC

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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
07:00	1	3	8	1	0	0	0	0	0	0	0	0	0	0	13	24	25
08:00	5	6	5	1	0	0	0	0	0	0	0	0	0	0	17	21	23
09:00	14	9	7	2	0	0	0	0	0	0	0	0	0	0	32	21	24
10:00	22	5	0	1	0	0	0	0	0	0	0	0	0	0	28	13	16
11:00	10	27	6	0	0	0	0	0	0	0	0	0	0	0	43	19	21
12 PM	13	28	14	3	0	0	0	0	0	0	0	0	0	0	58	21	24
13:00	7	13	20	5	1	0	0	0	0	0	0	0	0	0	46	24	27
14:00	3	25	25	3	0	0	0	0	0	0	0	0	0	0	56	23	25
15:00	12	10	14	2	0	0	0	0	0	0	0	0	0	0	38	22	24
16:00	10	7	11	3	0	0	0	0	0	0	0	0	0	0	31	23	25
17:00	10	23	22	3	0	0	0	0	0	0	0	0	0	0	58	22	25
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	107	156	132	24	1	0	0	0	0	0	0	0	0	0	420		
Percent	25.5%	37.1%	31.4%	5.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	07:00	09:00													11:00
Vol.	22	27	8	2													43
PM Peak	12:00	12:00	14:00	13:00	13:00												12:00
Vol.	13	28	25	5	1												58
Total	618	649	405	106	4	0	0	0	0	0	0	0	0	0	1782		
Percent	34.7%	36.4%	22.7%	5.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 6 MPH
 50th Percentile : 13 MPH
 85th Percentile : 21 MPH
 95th Percentile : 25 MPH

Stats
 10 MPH Pace Speed : 9-18 MPH
 Number in Pace : 870
 Percent in Pace : 48.8%
 Number of Vehicles > 40 MPH : 0
 Percent of Vehicles > 40 MPH : 0.0%
 Mean Speed(Average) : 15 MPH

Innovative Data, LLC

Location: Forest Park Entrance
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 Client: Tighe & Bond

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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	6	4	5	0	0	0	0	0	0	0	0	0	0	0	15	21	23
07:00	4	6	12	2	0	0	0	0	0	0	0	0	0	0	24	23	25
08:00	10	13	8	0	0	0	0	0	0	0	0	0	0	0	31	20	23
09:00	26	8	2	0	0	0	0	0	0	0	0	0	0	0	36	15	19
10:00	19	19	1	0	0	0	0	0	0	0	0	0	0	0	39	17	20
11:00	5	31	19	5	0	0	0	0	0	0	0	0	0	0	60	23	26
12 PM	18	31	29	2	1	0	0	0	0	0	0	0	0	0	81	22	24
13:00	4	28	50	6	0	0	0	0	0	0	0	0	0	0	88	24	26
14:00	13	32	25	0	0	0	0	0	0	0	0	0	0	0	70	22	24
15:00	10	21	30	4	0	0	0	0	0	0	0	0	0	0	65	23	25
16:00	15	35	33	5	0	0	0	0	0	0	0	0	0	0	88	22	25
17:00	85	44	31	1	0	0	0	0	0	0	0	0	0	0	161	19	23
18:00	22	25	39	8	0	0	0	0	0	0	0	0	0	0	94	23	26
19:00	8	10	12	3	0	0	0	0	0	0	0	0	0	0	33	23	25
20:00	32	5	2	1	0	0	0	0	0	0	0	0	0	0	40	14	17
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	277	313	298	37	1	0	0	0	0	0	0	0	0	0	926		
Percent	29.9%	33.8%	32.2%	4.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	11:00	11:00	11:00											11:00		
Vol.	26	31	19	5											60		
PM Peak	17:00	17:00	13:00	18:00	12:00										17:00		
Vol.	85	44	50	8	1										161		

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	5	5	0	1	0	0	0	0	0	0	0	0	0	0	11	17	18
07:00	1	11	8	3	1	0	0	0	0	0	0	0	0	0	24	23	25
08:00	6	14	16	0	0	0	0	0	0	0	0	0	0	0	36	22	24
09:00	18	23	3	0	0	0	0	0	0	0	0	0	0	0	44	17	19
10:00	17	27	6	0	0	0	0	0	0	0	0	0	0	0	50	18	21
11:00	12	18	8	0	0	0	0	0	0	0	0	0	0	0	38	20	23
12 PM	18	19	11	1	0	0	0	0	0	0	0	0	0	0	49	20	23
13:00	32	27	13	2	0	0	0	0	0	0	0	0	0	0	74	19	23
14:00	12	21	23	3	0	0	0	0	0	0	0	0	0	0	59	22	25
15:00	6	19	42	12	1	0	0	0	0	0	0	0	0	0	80	25	28
16:00	5	35	46	14	0	0	0	0	0	0	0	0	0	0	100	24	27
17:00	46	94	50	9	0	0	0	0	0	0	0	0	0	0	199	21	24
18:00	19	55	36	15	0	0	0	0	0	0	0	0	0	0	125	23	26
19:00	9	18	22	7	0	0	0	0	0	0	0	0	0	0	56	24	27
20:00	22	7	1	0	0	0	0	0	0	0	0	0	0	0	30	15	18
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	228	393	285	67	2	0	0	0	0	0	0	0	0	0	975		
Percent	23.4%	40.3%	29.2%	6.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	10:00	08:00	07:00	07:00										10:00		
Vol.	18	27	16	3	1										50		
PM Peak	17:00	17:00	17:00	18:00	15:00										17:00		
Vol.	46	94	50	15	1										199		

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	3	7	2	0	0	0	0	0	0	0	0	0	0	0	12	19	20
07:00	1	3	16	5	0	0	0	0	0	0	0	0	0	0	25	26	28
08:00	3	19	15	4	0	0	0	0	0	0	0	0	0	0	41	23	26
09:00	14	23	15	2	0	0	0	0	0	0	0	0	0	0	54	21	24
10:00	38	25	0	0	0	0	0	0	0	0	0	0	0	0	63	16	19
11:00	17	26	8	1	0	0	0	0	0	0	0	0	0	0	52	20	23
12 PM	13	35	19	4	0	0	0	0	0	0	0	0	0	0	71	21	24
13:00	8	28	32	3	0	0	0	0	0	0	0	0	0	0	71	22	24
14:00	6	19	22	9	0	0	0	0	0	0	0	0	0	0	56	24	28
15:00	13	36	36	8	0	0	0	0	0	0	0	0	0	0	93	23	26
16:00	11	29	58	13	0	0	0	0	0	0	0	0	0	0	111	24	27
17:00	29	54	38	6	0	0	0	0	0	0	0	0	0	0	127	22	25
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	156	304	261	55	0	0	0	0	0	0	0	0	0	0	776		
Percent	20.1%	39.2%	33.6%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	07:00	07:00											10:00		
Vol.	38	26	16	5											63		
PM Peak	17:00	17:00	16:00	16:00											17:00		
Vol.	29	54	58	13											127		
Total	661	1010	844	159	3	0	0	0	0	0	0	0	0	0	2677		
Percent	24.7%	37.7%	31.5%	5.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 7 MPH
 50th Percentile : 15 MPH
 85th Percentile : 22 MPH
 95th Percentile : 25 MPH

Stats
 10 MPH Pace Speed : 14-23 MPH
 Number in Pace : 1335
 Percent in Pace : 49.9%
 Number of Vehicles > 40 MPH : 0
 Percent of Vehicles > 40 MPH : 0.0%
 Mean Speed(Average) : 16 MPH

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata LLC or 1.413.668.5094

Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	9	5	6	0	0	0	0	0	0	0	0	0	0	0	20	20	22
07:00	6	9	15	4	0	0	0	0	0	0	0	0	0	0	34	24	27
08:00	14	19	12	1	0	0	0	0	0	0	0	0	0	0	46	21	23
09:00	47	11	2	0	0	0	0	0	0	0	0	0	0	0	60	14	18
10:00	25	28	2	1	0	0	0	0	0	0	0	0	0	0	56	18	20
11:00	14	45	30	9	0	0	0	0	0	0	0	0	0	0	98	23	26
12 PM	25	45	42	8	2	0	0	0	0	0	0	0	0	0	122	23	26
13:00	12	60	80	14	0	0	0	0	0	0	0	0	0	0	166	24	26
14:00	22	59	36	8	0	0	0	0	0	0	0	0	0	0	125	22	25
15:00	20	36	46	9	0	0	0	0	0	0	0	0	0	0	111	23	26
16:00	31	55	48	9	0	0	0	0	0	0	0	0	0	0	143	22	25
17:00	125	71	42	4	0	0	0	0	0	0	0	0	0	0	242	19	22
18:00	48	55	52	15	0	0	0	0	0	0	0	0	0	0	170	22	26
19:00	50	36	29	5	1	0	0	0	0	0	0	0	0	0	121	21	24
20:00	93	10	3	2	0	0	0	0	0	0	0	0	0	0	108	13	16
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	541	546	445	89	3	0	0	0	0	0	0	0	0	0	1624		
Percent	33.3%	33.6%	27.4%	5.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	11:00	11:00	11:00											11:00		
Vol.	47	45	30	9											98		
PM Peak	17:00	17:00	13:00	18:00	12:00										17:00		
Vol.	125	71	80	15	2										242		

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	5	5	0	1	0	0	0	0	0	0	0	0	0	0	11	17	18
07:00	2	14	10	4	2	0	0	0	0	0	0	0	0	0	32	25	28
08:00	11	21	19	0	0	0	0	0	0	0	0	0	0	0	51	22	24
09:00	32	40	6	2	0	0	0	0	0	0	0	0	0	0	80	18	21
10:00	32	40	10	1	0	0	0	0	0	0	0	0	0	0	83	19	21
11:00	22	31	13	0	0	0	0	0	0	0	0	0	0	0	66	20	22
12 PM	36	29	22	2	0	0	0	0	0	0	0	0	0	0	89	20	23
13:00	40	49	21	4	0	0	0	0	0	0	0	0	0	0	114	20	23
14:00	25	42	24	9	0	0	0	0	0	0	0	0	0	0	100	22	26
15:00	17	36	51	16	1	0	0	0	0	0	0	0	0	0	121	24	27
16:00	20	48	64	18	0	0	0	0	0	0	0	0	0	0	150	24	27
17:00	70	122	64	11	0	0	0	0	0	0	0	0	0	0	267	21	24
18:00	49	97	61	19	0	0	0	0	0	0	0	0	0	0	226	22	26
19:00	76	67	42	10	0	0	0	0	0	0	0	0	0	0	195	21	24
20:00	38	12	4	0	0	0	0	0	0	0	0	0	0	0	54	15	19
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	475	653	411	97	3	0	0	0	0	0	0	0	0	0	1639		
Percent	29.0%	39.8%	25.1%	5.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	09:00	08:00	07:00	07:00										10:00		
Vol.	32	40	19	4	2										83		
PM Peak	19:00	17:00	16:00	18:00	15:00										17:00		
Vol.	76	122	64	19	1										267		

Innovative Data, LLC

Location: Forest Park Entrance
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Northbound, Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	3	7	2	0	0	0	0	0	0	0	0	0	0	0	12	19	20
07:00	2	6	24	6	0	0	0	0	0	0	0	0	0	0	38	25	28
08:00	8	25	20	5	0	0	0	0	0	0	0	0	0	0	58	23	26
09:00	28	32	22	4	0	0	0	0	0	0	0	0	0	0	86	21	24
10:00	60	30	0	1	0	0	0	0	0	0	0	0	0	0	91	16	18
11:00	27	53	14	1	0	0	0	0	0	0	0	0	0	0	95	19	22
12 PM	26	63	33	7	0	0	0	0	0	0	0	0	0	0	129	21	25
13:00	15	41	52	8	1	0	0	0	0	0	0	0	0	0	117	23	26
14:00	9	44	47	12	0	0	0	0	0	0	0	0	0	0	112	24	27
15:00	25	46	50	10	0	0	0	0	0	0	0	0	0	0	131	23	26
16:00	21	36	69	16	0	0	0	0	0	0	0	0	0	0	142	24	27
17:00	39	77	60	9	0	0	0	0	0	0	0	0	0	0	185	22	25
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	263	460	393	79	1	0	0	0	0	0	0	0	0	0	1196		
Percent	22.0%	38.5%	32.9%	6.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	07:00	07:00													11:00
Vol.	60	53	24	6													95
PM Peak	17:00	17:00	16:00	16:00	13:00												17:00
Vol.	39	77	69	16	1												185
Total	1279	1659	1249	265	7	0	0	0	0	0	0	0	0	0	4459		
Percent	28.7%	37.2%	28.0%	5.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 7 MPH
 50th Percentile : 15 MPH
 85th Percentile : 22 MPH
 95th Percentile : 25 MPH

Stats
 10 MPH Pace Speed : 12-21 MPH
 Number in Pace : 2162
 Percent in Pace : 48.5%
 Number of Vehicles > 40 MPH : 0
 Percent of Vehicles > 40 MPH : 0.0%
 Mean Speed(Average) : 15 MPH

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	1	0	0	0	0	0	0	0	0	3	5
07:00	0	1	3	1	2	0	0	3	0	0	0	0	0	0	10
08:00	0	11	4	0	0	0	0	0	0	0	0	0	0	0	15
09:00	0	11	4	0	1	0	0	0	0	0	0	0	0	8	24
10:00	0	11	3	0	2	0	0	0	0	0	0	0	0	1	17
11:00	0	22	8	0	6	0	0	0	0	0	0	0	1	1	38
12 PM	0	31	5	0	3	0	0	1	0	0	0	0	0	1	41
13:00	1	52	21	0	1	0	0	1	0	0	0	0	0	2	78
14:00	1	38	11	0	3	1	0	1	0	0	0	0	0	0	55
15:00	0	29	10	1	3	1	0	1	0	0	0	0	0	1	46
16:00	1	47	5	0	1	0	0	0	0	0	0	0	0	1	55
17:00	0	48	8	1	0	2	0	0	0	0	0	0	0	22	81
18:00	1	53	14	0	2	2	0	0	0	0	0	0	0	4	76
19:00	5	61	14	0	2	0	0	1	0	0	0	0	0	5	88
20:00	0	36	8	0	0	0	0	0	0	0	0	0	0	24	68
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	453	118	3	27	6	0	8	0	0	0	0	1	73	698
Percent	1.3%	64.9%	16.9%	0.4%	3.9%	0.9%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.1%	10.5%	
AM Peak		11:00	11:00	07:00	11:00			07:00					11:00	09:00	
Vol.		22	8	1	6			3					1	8	
PM Peak	19:00	19:00	13:00	15:00	12:00	17:00		12:00						20:00	
Vol.	5	61	21	1	3	2		1						24	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	3	1	0	1	0	0	2	0	0	0	0	0	1	8
08:00	0	7	6	0	0	0	0	0	0	0	0	0	0	2	15
09:00	1	18	9	0	4	1	0	0	0	0	0	0	0	3	36
10:00	0	23	3	0	3	0	0	0	0	0	0	0	0	4	33
11:00	0	18	5	0	4	1	0	0	0	0	0	0	0	0	28
12 PM	1	22	10	0	3	0	0	3	0	0	0	0	0	1	40
13:00	0	24	7	0	6	0	0	0	0	0	0	0	0	3	40
14:00	0	24	13	0	2	0	0	0	0	0	0	0	0	2	41
15:00	0	29	5	2	2	0	0	1	0	0	0	0	0	2	41
16:00	1	38	8	0	2	0	0	0	0	0	0	0	0	1	50
17:00	2	50	13	0	0	0	0	0	0	0	0	0	0	3	68
18:00	2	73	17	1	1	0	0	1	0	0	0	0	0	6	101
19:00	3	108	20	0	1	0	0	1	0	0	0	0	0	6	139
20:00	1	16	2	0	0	0	0	0	0	0	0	0	0	5	24
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	453	119	3	29	2	0	8	0	0	0	0	0	39	664
Percent	1.7%	68.2%	17.9%	0.5%	4.4%	0.3%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	
AM Peak	09:00	10:00	09:00		09:00	09:00		07:00						10:00	
Vol.	1	23	9		4	1		2						4	
PM Peak	19:00	19:00	19:00	15:00	13:00			12:00						18:00	
Vol.	3	108	20	2	6			3						6	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
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 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	3	6	0	1	0	0	2	0	0	0	0	0	1	13
08:00	1	10	3	0	2	0	0	0	0	0	0	0	0	1	17
09:00	0	19	8	0	2	2	0	0	0	0	0	0	0	1	32
10:00	0	16	6	0	2	0	0	0	0	0	0	0	0	4	28
11:00	0	30	11	0	2	0	0	0	0	0	0	0	0	0	43
12 PM	2	36	8	0	6	0	0	0	0	0	0	0	0	6	58
13:00	0	31	11	1	2	0	0	1	0	0	0	0	0	0	46
14:00	1	42	13	0	0	0	0	0	0	0	0	0	0	0	56
15:00	1	23	9	1	4	0	0	0	0	0	0	0	0	0	38
16:00	0	20	8	0	0	0	0	0	0	0	0	0	0	3	31
17:00	2	36	15	0	1	0	0	0	0	0	0	0	0	4	58
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	266	98	2	22	2	0	3	0	0	0	0	0	20	420
Percent	1.7%	63.3%	23.3%	0.5%	5.2%	0.5%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	
AM Peak	08:00	11:00	11:00		08:00	09:00		07:00						10:00	
Vol.	1	30	11		2	2		2						4	
PM Peak	12:00	14:00	17:00	13:00	12:00			13:00						12:00	
Vol.	2	42	15	1	6			1						6	
Grand Total	27	1172	335	8	78	10	0	19	0	0	0	0	1	132	1782
Percent	1.5%	65.8%	18.8%	0.4%	4.4%	0.6%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.1%	7.4%	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	6	0	1	0	0	0	0	0	0	0	0	5	15
07:00	0	14	6	1	1	0	0	0	0	0	0	0	0	2	24
08:00	1	21	6	0	2	0	0	1	0	0	0	0	0	0	31
09:00	0	22	8	0	0	0	0	0	0	0	0	0	0	6	36
10:00	0	26	6	2	3	0	0	1	1	0	0	0	0	0	39
11:00	0	39	15	0	5	0	0	1	0	0	0	0	0	0	60
12 PM	0	59	16	0	5	1	0	0	0	0	0	0	0	0	81
13:00	1	71	10	1	3	0	0	2	0	0	0	0	0	0	88
14:00	2	52	12	0	1	0	0	1	0	0	0	0	0	2	70
15:00	1	50	10	1	2	0	0	0	0	0	0	0	0	1	65
16:00	0	74	11	0	0	1	0	0	0	0	0	0	0	2	88
17:00	1	101	17	0	0	0	0	0	0	0	0	0	0	42	161
18:00	4	77	9	0	0	1	0	0	0	0	0	0	0	3	94
19:00	0	22	7	0	1	0	0	0	0	0	0	0	0	3	33
20:00	0	20	1	0	0	0	0	0	0	0	0	0	0	19	40
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	652	140	5	24	3	0	6	1	0	0	0	0	85	926
Percent	1.1%	70.4%	15.1%	0.5%	2.6%	0.3%	0.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	9.2%	
AM Peak	08:00	11:00	11:00	10:00	11:00			08:00	10:00					09:00	
Vol.	1	39	15	2	5			1	1					6	
PM Peak	18:00	17:00	17:00	13:00	12:00	12:00		13:00						17:00	
Vol.	4	101	17	1	5	1		2						42	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	8	0	2	1	0	0	0	0	0	0	0	0	11
07:00	0	19	4	0	1	0	0	0	0	0	0	0	0	0	24
08:00	0	26	8	0	0	1	0	0	0	0	0	0	0	1	36
09:00	0	30	8	1	1	0	0	0	0	0	0	0	0	4	44
10:00	0	33	13	0	2	0	0	2	0	0	0	0	0	0	50
11:00	0	26	9	0	2	0	0	1	0	0	0	0	0	0	38
12 PM	1	25	9	0	5	2	0	0	0	0	0	0	0	7	49
13:00	1	47	13	0	1	0	0	1	0	0	1	0	0	10	74
14:00	0	43	11	0	3	0	0	0	0	0	0	0	0	2	59
15:00	0	63	11	3	1	0	0	0	0	0	0	0	0	2	80
16:00	0	83	17	0	0	0	0	0	0	0	0	0	0	0	100
17:00	1	165	28	0	1	0	0	1	0	0	0	0	0	3	199
18:00	4	105	9	0	1	1	0	1	0	0	0	0	0	4	125
19:00	1	40	7	0	0	0	0	1	0	0	0	0	0	7	56
20:00	1	16	3	0	1	0	0	0	0	0	0	0	0	9	30
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	721	158	4	21	5	0	7	0	0	1	0	0	49	975
Percent	0.9%	73.9%	16.2%	0.4%	2.2%	0.5%	0.0%	0.7%	0.0%	0.0%	0.1%	0.0%	0.0%	5.0%	
AM Peak		10:00	10:00	09:00	06:00	06:00		10:00						09:00	
Vol.		33	13	1	2	1		2						4	
PM Peak	18:00	17:00	17:00	15:00	12:00	12:00		13:00			13:00			13:00	
Vol.	4	165	28	3	5	2		1			1			10	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
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Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	8	0	2	0	0	0	0	0	0	0	0	0	12
07:00	0	14	8	0	3	0	0	0	0	0	0	0	0	0	25
08:00	0	29	10	0	0	0	0	2	0	0	0	0	0	0	41
09:00	0	38	11	1	1	0	0	1	0	0	0	0	0	2	54
10:00	0	42	9	1	1	0	0	0	0	0	0	0	0	10	63
11:00	0	36	10	0	4	0	0	1	0	0	0	0	0	1	52
12 PM	2	49	11	0	3	3	0	1	0	0	0	0	0	2	71
13:00	0	48	18	0	2	1	0	1	0	0	0	0	0	1	71
14:00	0	45	7	0	2	1	0	0	0	0	0	0	0	1	56
15:00	0	60	23	2	4	0	0	0	0	0	0	0	0	4	93
16:00	0	98	11	0	0	0	0	1	0	0	0	0	0	1	111
17:00	2	110	9	0	0	0	0	0	0	0	0	0	0	6	127
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	571	135	4	22	5	0	7	0	0	0	0	0	28	776
Percent	0.5%	73.6%	17.4%	0.5%	2.8%	0.6%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	
AM Peak		10:00	09:00	09:00	11:00			08:00						10:00	
Vol.		42	11	1	4			2						10	
PM Peak	12:00	17:00	15:00	15:00	15:00	12:00		12:00						17:00	
Vol.	2	110	23	2	4	3		1						6	
Grand Total	23	1944	433	13	67	13	0	20	1	0	1	0	0	162	2677
Percent	0.9%	72.6%	16.2%	0.5%	2.5%	0.5%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	6.1%	

Innovative Data, LLC

Location: Forest Park Entrance
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 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	4	6	0	2	0	0	0	0	0	0	0	0	8	20
07:00	0	15	9	2	3	0	0	3	0	0	0	0	0	2	34
08:00	1	32	10	0	2	0	0	1	0	0	0	0	0	0	46
09:00	0	33	12	0	1	0	0	0	0	0	0	0	0	14	60
10:00	0	37	9	2	5	0	0	1	1	0	0	0	0	1	56
11:00	0	61	23	0	11	0	0	1	0	0	0	0	1	1	98
12 PM	0	90	21	0	8	1	0	1	0	0	0	0	0	1	122
13:00	2	123	31	1	4	0	0	3	0	0	0	0	0	2	166
14:00	3	90	23	0	4	1	0	2	0	0	0	0	0	2	125
15:00	1	79	20	2	5	1	0	1	0	0	0	0	0	2	111
16:00	1	121	16	0	1	1	0	0	0	0	0	0	0	3	143
17:00	1	149	25	1	0	2	0	0	0	0	0	0	0	64	242
18:00	5	130	23	0	2	3	0	0	0	0	0	0	0	7	170
19:00	5	83	21	0	3	0	0	1	0	0	0	0	0	8	121
20:00	0	56	9	0	0	0	0	0	0	0	0	0	0	43	108
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	19	1105	258	8	51	9	0	14	1	0	0	0	1	158	1624
Percent	1.2%	68.0%	15.9%	0.5%	3.1%	0.6%	0.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.1%	9.7%	
AM Peak	08:00	11:00	11:00	07:00	11:00			07:00	10:00				11:00	09:00	
Vol.	1	61	23	2	11			3	1				1	14	
PM Peak	18:00	17:00	13:00	15:00	12:00	18:00		13:00						17:00	
Vol.	5	149	31	2	8	3		3						64	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	8	0	2	1	0	0	0	0	0	0	0	0	11
07:00	0	22	5	0	2	0	0	2	0	0	0	0	0	1	32
08:00	0	33	14	0	0	1	0	0	0	0	0	0	0	3	51
09:00	1	48	17	1	5	1	0	0	0	0	0	0	0	7	80
10:00	0	56	16	0	5	0	0	2	0	0	0	0	0	4	83
11:00	0	44	14	0	6	1	0	1	0	0	0	0	0	0	66
12 PM	2	47	19	0	8	2	0	3	0	0	0	0	0	8	89
13:00	1	71	20	0	7	0	0	1	0	0	1	0	0	13	114
14:00	0	67	24	0	5	0	0	0	0	0	0	0	0	4	100
15:00	0	92	16	5	3	0	0	1	0	0	0	0	0	4	121
16:00	1	121	25	0	2	0	0	0	0	0	0	0	0	1	150
17:00	3	215	41	0	1	0	0	1	0	0	0	0	0	6	267
18:00	6	178	26	1	2	1	0	2	0	0	0	0	0	10	226
19:00	4	148	27	0	1	0	0	2	0	0	0	0	0	13	195
20:00	2	32	5	0	1	0	0	0	0	0	0	0	0	14	54
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	20	1174	277	7	50	7	0	15	0	0	1	0	0	88	1639
Percent	1.2%	71.6%	16.9%	0.4%	3.1%	0.4%	0.0%	0.9%	0.0%	0.0%	0.1%	0.0%	0.0%	5.4%	
AM Peak	09:00	10:00	09:00	09:00	11:00	06:00		07:00						09:00	
Vol.	1	56	17	1	6	1		2						7	
PM Peak	18:00	17:00	17:00	15:00	12:00	12:00		12:00			13:00			20:00	
Vol.	6	215	41	5	8	2		3			1			14	

Innovative Data, LLC

Location: Forest Park Entrance
 Location: South of Sumner Avenue
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	8	0	2	0	0	0	0	0	0	0	0	0	12
07:00	0	17	14	0	4	0	0	2	0	0	0	0	0	1	38
08:00	1	39	13	0	2	0	0	2	0	0	0	0	0	1	58
09:00	0	57	19	1	3	2	0	1	0	0	0	0	0	3	86
10:00	0	58	15	1	3	0	0	0	0	0	0	0	0	14	91
11:00	0	66	21	0	6	0	0	1	0	0	0	0	0	1	95
12 PM	4	85	19	0	9	3	0	1	0	0	0	0	0	8	129
13:00	0	79	29	1	4	1	0	2	0	0	0	0	0	1	117
14:00	1	87	20	0	2	1	0	0	0	0	0	0	0	1	112
15:00	1	83	32	3	8	0	0	0	0	0	0	0	0	4	131
16:00	0	118	19	0	0	0	0	1	0	0	0	0	0	4	142
17:00	4	146	24	0	1	0	0	0	0	0	0	0	0	10	185
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	837	233	6	44	7	0	10	0	0	0	0	0	48	1196
Percent	0.9%	70.0%	19.5%	0.5%	3.7%	0.6%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	
AM Peak	08:00	11:00	11:00	09:00	11:00	09:00		07:00						10:00	
Vol.	1	66	21	1	6	2		2						14	
PM Peak	12:00	17:00	15:00	15:00	12:00	12:00		13:00						17:00	
Vol.	4	146	32	3	9	3		2						10	
Grand Total	50	3116	768	21	145	23	0	39	1	0	1	0	1	294	4459
Percent	1.1%	69.9%	17.2%	0.5%	3.3%	0.5%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	6.6%	

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	Tue 05-May-1		Wed 06-May-1		Thu 07-May-1		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	42	158	48	167	56	196	49	174
12:15	52	194	57	162	46	180	52	179
12:30	34	194	42	188	32	193	36	192
12:45	22	187	36	198	26	214	28	200
01:00	23	172	35	204	32	190	30	189
01:15	14	161	21	184	25	193	20	179
01:30	19	176	20	180	24	186	21	181
01:45	14	212	16	196	17	196	16	201
02:00	14	186	23	226	21	203	19	205
02:15	20	221	26	226	28	232	25	226
02:30	13	190	16	216	15	229	15	212
02:45	10	234	10	224	12	208	11	222
03:00	12	208	12	244	7	248	10	233
03:15	14	214	13	264	11	218	13	232
03:30	8	250	16	255	14	230	13	245
03:45	5	212	10	245	9	238	8	232
04:00	22	231	12	250	11	278	15	253
04:15	14	276	11	270	16	248	14	265
04:30	12	241	19	268	16	262	16	257
04:45	15	284	21	256	20	264	19	268
05:00	16	269	14	266	16	261	15	265
05:15	24	276	28	262	30	268	27	269
05:30	38	263	28	278	37	248	34	263
05:45	46	264	27	252	28	246	34	254
06:00	62	243	52	241	48	246	54	243
06:15	62	237	61	232	66	263	63	244
06:30	113	215	96	224	111	214	107	218
06:45	136	206	136	214	124	218	132	213
07:00	163	187	167	208	158	196	163	197
07:15	183	195	194	213	196	222	191	210
07:30	216	218	214	226	202	196	211	213
07:45	221	200	212	184	232	192	222	192
08:00	180	195	205	194	180	184	188	191
08:15	246	238	230	234	192	198	223	223
08:30	184	172	172	159	176	160	177	164
08:45	178	168	193	184	182	174	184	175
09:00	178	145	156	184	190	167	175	165
09:15	157	127	160	154	166	165	161	149
09:30	158	142	170	136	149	149	159	142
09:45	158	112	137	148	166	136	154	132
10:00	158	102	145	118	146	128	150	116
10:15	154	106	137	127	144	94	145	109
10:30	148	90	144	98	134	100	142	96
10:45	178	74	148	74	173	92	166	80
11:00	166	66	157	85	178	75	167	75
11:15	177	80	158	78	163	92	166	83
11:30	192	65	170	56	182	70	181	64
11:45	161	66	170	60	174	55	168	60
Total	4432	8922	4345	9312	4381	9215	4389	9150
Combined Total	13354		13657		13596		13539	
Peak	07:30	04:45	07:30	04:45	07:15	04:30	07:30	04:45
Vol.	863	1092	861	1062	810	1055	844	1065
P.H.F.	0.877	0.961	0.936	0.955	0.873	0.984	0.946	0.990
ADT	ADT 13,526		ADT 13,526					

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	Tue 05-May-1		Wed 06-May-1		Thu 07-May-1		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	40	143	47	157	56	164	48	155
12:15	50	156	57	149	47	142	51	149
12:30	34	164	43	152	33	151	37	156
12:45	22	166	36	174	26	174	28	171
01:00	23	163	34	165	32	164	30	164
01:15	13	143	21	163	24	166	19	157
01:30	19	154	20	148	24	163	21	155
01:45	14	162	14	151	17	169	15	161
02:00	14	147	23	175	21	171	19	164
02:15	19	136	27	159	28	98	25	131
02:30	13	146	17	148	13	145	14	146
02:45	10	139	10	113	10	142	10	131
03:00	10	102	12	171	7	132	10	135
03:15	14	127	13	173	11	168	13	156
03:30	8	162	14	188	12	191	11	180
03:45	5	101	10	117	9	148	8	122
04:00	18	177	11	138	11	115	13	143
04:15	12	144	11	120	16	129	13	131
04:30	11	138	19	164	15	161	15	154
04:45	15	168	21	88	20	181	19	146
05:00	16	158	14	138	16	99	15	132
05:15	22	151	28	142	29	140	26	144
05:30	35	149	28	121	37	146	33	139
05:45	43	131	25	148	28	143	32	141
06:00	59	175	50	145	46	129	52	150
06:15	60	149	59	173	61	178	60	167
06:30	110	166	93	163	106	119	103	149
06:45	120	176	129	167	121	149	123	164
07:00	153	155	137	167	129	156	140	159
07:15	149	172	146	155	145	188	147	172
07:30	163	171	162	155	153	169	159	165
07:45	172	168	149	157	161	166	161	164
08:00	164	161	157	162	153	159	158	161
08:15	182	180	174	170	171	183	176	178
08:30	157	148	151	148	153	145	154	147
08:45	166	145	153	173	153	161	157	160
09:00	152	137	144	166	166	149	154	151
09:15	133	126	140	136	138	156	137	139
09:30	145	135	150	128	140	144	145	136
09:45	137	110	127	143	156	130	140	128
10:00	142	103	134	111	128	120	135	111
10:15	148	104	130	121	133	92	137	106
10:30	142	90	139	96	127	98	136	95
10:45	166	73	146	74	142	86	151	78
11:00	150	65	136	85	156	74	147	75
11:15	147	81	143	79	149	89	146	83
11:30	175	65	160	56	157	66	164	62
11:45	141	65	152	60	139	56	144	60
Total	3913	6647	3816	6752	3825	6764	3851	6723
Combined Total	10560		10568		10589		10574	
Peak	07:30	07:30	07:30	06:15	08:15	07:15	07:30	07:30
Vol.	681	680	642	670	643	682	654	668
P.H.F.	0.935	0.944	0.922	0.891	0.940	0.907	0.929	0.938
ADT	ADT 10,561		AADT 10,561					

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Eastbound																85th	95th	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Total	Percent	Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999				
05/05/15	6	17	26	42	38	14	2	1	0	0	0	0	0	0	0	146	33	37
01:00	3	4	10	13	14	20	5	0	0	0	0	0	0	0	0	69	38	41
02:00	0	1	6	23	14	8	4	0	0	0	0	0	0	0	0	56	36	41
03:00	2	6	5	10	8	3	2	1	0	0	0	0	0	0	0	37	33	36
04:00	2	6	10	11	15	5	4	3	0	0	0	0	0	0	0	56	39	45
05:00	3	7	17	22	27	21	13	5	1	0	0	0	0	0	0	116	40	45
06:00	36	49	63	89	54	41	9	6	1	1	0	0	0	0	0	349	34	39
07:00	186	135	113	97	77	19	6	4	0	0	0	0	0	0	0	637	28	34
08:00	237	147	111	68	76	21	6	2	1	0	0	0	0	0	0	669	27	34
09:00	162	137	94	95	61	15	3	0	0	0	0	0	0	0	0	567	28	33
10:00	167	140	110	92	61	23	3	1	1	0	0	0	0	0	0	598	28	33
11:00	179	136	102	107	61	22	4	2	0	0	0	0	0	0	0	613	28	33
12 PM	214	136	130	91	43	13	2	0	0	0	0	0	0	0	0	629	26	31
13:00	194	141	114	109	48	12	4	0	0	0	0	0	0	0	0	622	27	32
14:00	289	142	67	46	16	6	2	0	0	0	0	0	0	0	0	568	20	27
15:00	323	98	44	18	9	0	0	0	0	0	0	0	0	0	0	492	17	23
16:00	338	160	75	36	16	1	1	0	0	0	0	0	0	0	0	627	19	26
17:00	365	135	62	21	6	0	0	0	0	0	0	0	0	0	0	589	18	23
18:00	321	156	110	55	18	6	0	0	0	0	0	0	0	0	0	666	21	27
19:00	275	158	106	85	34	8	0	0	0	0	0	0	0	0	0	666	24	30
20:00	248	154	97	99	33	3	0	0	0	0	0	0	0	0	0	634	24	29
21:00	81	109	100	111	70	29	8	0	0	0	0	0	0	0	0	508	31	36
22:00	27	53	63	108	73	33	10	3	0	0	0	0	0	0	0	370	33	38
23:00	16	31	52	89	59	23	5	0	1	0	0	0	0	0	0	276	33	38
Total	3674	2258	1687	1537	931	346	93	28	5	1	0	0	0	0	0	10560		
Percent	34.8%	21.4%	16.0%	14.6%	8.8%	3.3%	0.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	07:00	11:00	07:00	06:00	05:00	06:00	05:00	06:00						08:00		
Vol.	237	147	113	107	77	41	13	6	1	1						669		
PM Peak	17:00	16:00	12:00	21:00	22:00	22:00	22:00	22:00	23:00							18:00		
Vol.	365	160	130	111	73	33	10	3	1							666		

Innovative Data, LLC

Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
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Eastbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th Percent	95th Percent	
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total		
05/06/15	8	25	34	45	45	15	10	1	0	0	0	0	0	0	183	34	40
01:00	2	6	12	25	31	8	3	2	0	0	0	0	0	0	89	35	39
02:00	4	7	5	17	19	13	8	3	0	1	0	0	0	0	77	39	44
03:00	0	6	7	11	18	5	2	0	0	0	0	0	0	0	49	35	38
04:00	0	3	6	7	21	14	9	2	0	0	0	0	0	0	62	40	44
05:00	4	6	10	17	24	21	10	1	2	0	0	0	0	0	95	39	43
06:00	37	38	62	77	63	41	11	2	0	0	0	0	0	0	331	34	39
07:00	236	102	104	79	57	12	2	1	1	0	0	0	0	0	594	26	32
08:00	218	153	103	82	57	19	3	0	0	0	0	0	0	0	635	26	32
09:00	154	113	114	96	61	20	2	1	0	0	0	0	0	0	561	28	33
10:00	136	127	103	103	59	13	8	0	0	0	0	0	0	0	549	28	33
11:00	176	131	126	84	61	10	2	1	0	0	0	0	0	0	591	27	32
12 PM	238	157	116	74	31	10	4	2	0	0	0	0	0	0	632	24	30
13:00	288	143	88	70	28	7	3	0	0	0	0	0	0	0	627	23	29
14:00	342	129	78	27	16	3	0	0	0	0	0	0	0	0	595	19	25
15:00	352	181	90	17	9	0	0	0	0	0	0	0	0	0	649	19	23
16:00	321	116	44	17	12	0	0	0	0	0	0	0	0	0	510	17	23
17:00	339	130	59	18	3	0	0	0	0	0	0	0	0	0	549	17	22
18:00	284	183	106	52	17	2	4	0	0	0	0	0	0	0	648	21	27
19:00	325	157	77	45	21	7	1	0	1	0	0	0	0	0	634	20	27
20:00	164	161	153	92	58	21	4	0	0	0	0	0	0	0	653	27	33
21:00	117	131	130	118	54	19	4	0	0	0	0	0	0	0	573	28	33
22:00	18	63	86	115	80	33	5	1	1	0	0	0	0	0	402	33	37
23:00	14	39	59	72	56	27	10	1	1	1	0	0	0	0	280	34	39
Total	3777	2307	1772	1360	901	320	105	18	6	2	0	0	0	0	10568		
Percent	35.7%	21.8%	16.8%	12.9%	8.5%	3.0%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	11:00	10:00	06:00	06:00	06:00	02:00	10:00	02:00					08:00		
Vol.	236	153	126	103	63	41	11	3	2	1					635		
PM Peak	15:00	18:00	20:00	21:00	22:00	22:00	23:00	12:00	19:00	23:00					20:00		
Vol.	352	183	153	118	80	33	10	2	1	1					653		

Innovative Data, LLC

Location: Sumner Ave Eastbound
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 innovativedata.com or 1.413.668.5094

Eastbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th	95th	
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	
05/07/15	9	15	35	40	39	14	7	3	0	0	0	0	0	0	162	35	41
01:00	1	3	7	33	31	14	4	3	1	0	0	0	0	0	97	38	44
02:00	1	3	8	18	21	17	3	1	0	0	0	0	0	0	72	37	40
03:00	0	0	4	9	11	6	7	1	1	0	0	0	0	0	39	40	44
04:00	0	0	6	20	13	16	6	0	1	0	0	0	0	0	62	39	42
05:00	5	9	8	19	37	16	11	4	0	0	0	1	0	0	110	39	44
06:00	39	31	66	77	68	25	22	5	1	0	0	0	0	0	334	34	41
07:00	215	136	108	81	27	17	2	2	0	0	0	0	0	0	588	25	31
08:00	172	115	128	100	79	29	5	2	0	0	0	0	0	0	630	29	34
09:00	169	141	125	80	54	19	10	2	0	0	0	0	0	0	600	27	34
10:00	134	121	99	96	58	19	2	1	0	0	0	0	0	0	530	28	33
11:00	191	114	130	94	57	11	4	0	0	0	0	0	0	0	601	27	32
12 PM	252	149	110	72	35	9	4	0	0	0	0	0	0	0	631	24	30
13:00	247	145	125	90	43	9	3	0	0	0	0	0	0	0	662	25	30
14:00	331	110	52	43	13	6	1	0	0	0	0	0	0	0	556	19	27
15:00	330	138	84	57	25	5	0	0	0	0	0	0	0	0	639	21	28
16:00	356	119	67	33	11	0	0	0	0	0	0	0	0	0	586	18	25
17:00	309	107	69	29	13	0	1	0	0	0	0	0	0	0	528	19	25
18:00	322	120	72	49	11	1	0	0	0	0	0	0	0	0	575	20	26
19:00	250	162	118	96	42	9	1	0	0	1	0	0	0	0	679	25	30
20:00	207	176	132	84	44	5	0	0	0	0	0	0	0	0	648	25	30
21:00	125	131	136	114	60	11	2	0	0	0	0	0	0	0	579	28	32
22:00	49	69	102	96	51	22	7	0	0	0	0	0	0	0	396	31	36
23:00	18	37	66	67	61	25	8	3	0	0	0	0	0	0	285	34	38
Total	3732	2151	1857	1497	904	305	110	27	4	1	0	1	0	0	10589		
Percent	35.2%	20.3%	17.5%	14.1%	8.5%	2.9%	1.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	11:00	08:00	08:00	08:00	06:00	06:00	01:00			05:00					08:00
Vol.	215	141	130	100	79	29	22	5	1			1					630
PM Peak	16:00	20:00	21:00	21:00	23:00	23:00	23:00	23:00		19:00							19:00
Vol.	356	176	136	114	61	25	8	3		1							679
Total	11183	6716	5316	4394	2736	971	308	73	15	4	0	1	0	0	31717		
Percent	35.3%	21.2%	16.8%	13.9%	8.6%	3.1%	1.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 6 MPH
 50th Percentile : 14 MPH
 85th Percentile : 27 MPH
 95th Percentile : 33 MPH

Stats
 10 MPH Pace Speed : 6-15 MPH
 Number in Pace : 13708
 Percent in Pace : 43.2%
 Number of Vehicles > 40 MPH : 346
 Percent of Vehicles > 40 MPH : 1.1%
 Mean Speed(Average) : 17 MPH

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedataallc.com or 1.413.668.5094

Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/05/15	3	116	16	0	4	0	0	3	0	0	0	0	0	4	146
01:00	2	51	14	0	1	0	0	0	0	0	0	0	0	1	69
02:00	0	39	14	1	2	0	0	0	0	0	0	0	0	0	56
03:00	1	25	8	0	1	0	0	0	0	0	0	0	0	2	37
04:00	0	41	9	0	0	2	0	1	1	0	0	0	0	2	56
05:00	3	65	32	1	6	1	0	3	2	0	0	0	0	3	116
06:00	5	220	65	10	24	3	0	2	3	0	1	1	0	15	349
07:00	6	415	89	4	21	4	0	5	2	2	0	1	0	88	637
08:00	7	419	93	6	22	2	0	6	2	0	1	1	0	110	669
09:00	6	372	79	4	24	3	0	8	0	0	0	0	0	71	567
10:00	6	410	88	3	22	5	0	3	1	1	0	0	0	59	598
11:00	7	402	87	6	19	0	0	8	0	1	0	0	0	83	613
12 PM	7	417	79	4	18	0	0	6	0	0	0	0	0	98	629
13:00	5	419	74	5	15	1	0	8	0	0	0	0	0	95	622
14:00	8	316	48	2	17	3	0	2	2	0	0	0	1	169	568
15:00	13	232	52	4	4	2	0	3	1	0	1	0	0	180	492
16:00	5	381	50	4	7	3	0	6	0	0	0	0	0	171	627
17:00	17	306	42	4	6	1	0	11	2	0	0	0	0	200	589
18:00	11	438	53	2	10	2	0	2	0	0	1	0	0	147	666
19:00	9	456	65	1	8	2	0	9	0	0	0	0	0	116	666
20:00	10	420	59	2	7	4	0	3	2	0	0	0	0	127	634
21:00	6	375	72	1	6	2	0	5	0	0	0	0	0	41	508
22:00	4	273	66	0	11	0	0	2	0	0	0	0	0	14	370
23:00	1	212	48	0	8	0	0	0	0	0	0	0	0	7	276
Total	142	6820	1302	64	263	40	0	96	18	4	4	3	1	1803	10560
Percent	1.3%	64.6%	12.3%	0.6%	2.5%	0.4%	0.0%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	17.1%	
AM Peak	08:00	08:00	08:00	06:00	06:00	10:00		09:00	06:00	07:00	06:00	06:00		08:00	
Vol.	7	419	93	10	24	5		8	3	2	1	1		110	
PM Peak	17:00	19:00	12:00	13:00	12:00	20:00		17:00	14:00		15:00		14:00	17:00	
Vol.	17	456	79	5	18	4		11	2		1		1	200	

Innovative Data, LLC

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Location: Sumner Ave Eastbound
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 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/06/15	2	137	32	0	7	1	0	0	0	0	0	0	0	4	183
01:00	0	64	19	0	4	0	0	0	1	0	0	0	0	1	89
02:00	0	50	19	0	4	0	0	1	0	0	0	0	0	3	77
03:00	0	34	11	1	2	0	0	0	1	0	0	0	0	0	49
04:00	0	39	20	0	2	0	0	0	1	0	0	0	0	0	62
05:00	0	55	27	2	6	0	0	0	1	0	0	0	0	4	95
06:00	3	204	60	10	23	2	1	7	2	0	0	0	0	19	331
07:00	9	371	75	3	11	2	1	8	1	0	1	0	0	112	594
08:00	14	371	88	8	19	2	0	9	3	1	0	1	0	119	635
09:00	4	339	98	7	28	1	0	6	2	0	0	0	0	76	561
10:00	3	361	89	8	16	4	0	6	0	0	1	0	0	61	549
11:00	5	390	81	4	16	2	0	2	0	0	0	0	0	91	591
12 PM	7	412	78	4	9	1	0	10	0	0	0	0	0	111	632
13:00	9	375	71	3	11	3	0	10	1	0	0	0	0	144	627
14:00	11	329	62	4	19	3	1	5	0	2	0	0	1	158	595
15:00	11	374	67	4	7	7	0	5	0	1	0	0	0	173	649
16:00	14	256	39	4	11	3	0	3	0	0	2	0	0	178	510
17:00	11	303	35	4	4	4	0	8	0	1	2	0	0	177	549
18:00	11	412	55	1	8	2	0	7	0	1	1	0	0	150	648
19:00	8	420	51	4	5	4	0	3	1	0	1	0	1	136	634
20:00	6	466	80	2	13	2	0	7	2	0	0	0	1	74	653
21:00	3	435	62	1	12	1	0	0	1	0	0	0	0	58	573
22:00	0	303	70	1	10	0	0	2	1	0	1	0	1	13	402
23:00	1	218	51	0	3	0	0	2	0	0	0	0	0	5	280
Total	132	6718	1340	75	250	44	3	101	18	6	9	1	4	1867	10568
Percent	1.2%	63.6%	12.7%	0.7%	2.4%	0.4%	0.0%	1.0%	0.2%	0.1%	0.1%	0.0%	0.0%	17.7%	
AM Peak	08:00	11:00	09:00	06:00	09:00	10:00	06:00	08:00	08:00	08:00	07:00	08:00		08:00	
Vol.	14	390	98	10	28	4	1	9	3	1	1	1		119	
PM Peak	16:00	20:00	20:00	12:00	14:00	15:00	14:00	12:00	20:00	14:00	16:00		14:00	16:00	
Vol.	14	466	80	4	19	7	1	10	2	2	2		1	178	

Innovative Data, LLC

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Location: Sumner Ave Eastbound
 Location: between Belmont & Beaumont
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
05/07/15	2	127	24	0	3	1	0	1	0	0	0	0	0	4	162
01:00	1	73	19	1	1	0	0	0	1	0	0	0	0	1	97
02:00	0	44	20	1	2	1	0	2	1	0	0	0	0	1	72
03:00	0	22	15	0	1	0	0	0	0	0	0	0	1	0	39
04:00	0	34	20	0	7	0	0	0	1	0	0	0	0	0	62
05:00	1	55	35	0	10	1	0	3	1	0	0	0	0	4	110
06:00	3	193	71	10	27	2	0	5	0	1	0	0	0	22	334
07:00	6	356	84	3	16	1	1	10	1	0	0	1	0	109	588
08:00	9	371	104	6	31	5	0	5	0	1	0	0	0	98	630
09:00	6	384	97	4	17	3	0	9	0	0	1	0	0	79	600
10:00	4	340	84	5	24	5	0	4	0	0	0	1	0	63	530
11:00	4	372	82	4	15	2	0	3	3	0	0	1	0	115	601
12 PM	10	387	72	2	11	5	1	8	0	1	0	0	1	133	631
13:00	8	416	84	3	12	2	0	8	0	2	1	0	0	126	662
14:00	9	318	56	2	11	3	0	3	1	0	0	0	0	153	556
15:00	5	381	67	6	16	4	0	3	1	0	0	0	1	155	639
16:00	11	307	39	4	12	3	0	8	1	2	2	0	0	197	586
17:00	8	300	27	4	9	5	0	4	1	1	1	0	0	168	528
18:00	12	326	45	4	7	5	0	5	2	1	0	0	0	168	575
19:00	9	471	65	1	6	3	0	3	1	0	0	0	0	120	679
20:00	5	468	71	3	10	2	0	3	1	0	0	0	2	83	648
21:00	10	451	62	1	2	2	0	4	0	0	0	0	0	47	579
22:00	4	300	64	0	6	1	0	4	0	0	0	0	0	17	396
23:00	2	226	45	0	4	0	0	1	0	1	0	0	0	6	285
Total	129	6722	1352	64	260	56	2	96	16	10	5	3	5	1869	10589
Percent	1.2%	63.5%	12.8%	0.6%	2.5%	0.5%	0.0%	0.9%	0.2%	0.1%	0.0%	0.0%	0.0%	17.7%	
AM Peak	08:00	09:00	08:00	06:00	08:00	08:00	07:00	07:00	11:00	06:00	09:00	07:00	03:00	11:00	
Vol.	9	384	104	10	31	5	1	10	3	1	1	1	1	115	
PM Peak	18:00	19:00	13:00	15:00	15:00	12:00	12:00	12:00	18:00	13:00	16:00		20:00	16:00	
Vol.	12	471	84	6	16	5	1	8	2	2	2		2	197	
Grand Total	403	20260	3994	203	773	140	5	293	52	20	18	7	10	5539	31717
Percent	1.3%	63.9%	12.6%	0.6%	2.4%	0.4%	0.0%	0.9%	0.2%	0.1%	0.1%	0.0%	0.0%	17.5%	

Innovative Data, LLC

Location: Sumner Ave Westbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

PO Box 468
 Belchertown, Massachusetts
 innovativedata.com or 1.413.668.5094

Start Time	Tue 05-May-1		Wed 06-May-1		Thu 07-May-1		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	14	142	23	156	21	156	19	151
12:15	20	148	14	156	19	132	18	145
12:30	22	169	12	166	19	163	18	166
12:45	11	149	22	166	16	166	16	160
01:00	4	138	14	164	14	171	11	158
01:15	14	162	12	160	14	128	13	150
01:30	9	156	10	167	10	164	10	162
01:45	12	130	7	180	6	158	8	156
02:00	12	164	12	188	6	161	10	171
02:15	9	166	8	174	5	167	7	169
02:30	12	162	8	152	13	172	11	162
02:45	8	174	7	154	6	164	7	164
03:00	10	176	10	186	8	176	9	179
03:15	11	166	14	196	18	183	14	182
03:30	18	197	15	178	12	204	15	193
03:45	20	203	19	184	18	206	19	198
04:00	18	196	20	190	23	170	20	185
04:15	22	174	27	197	29	200	26	190
04:30	31	203	22	213	38	200	30	205
04:45	32	184	38	193	27	178	32	185
05:00	44	184	48	223	46	202	46	203
05:15	63	199	72	181	72	206	69	195
05:30	112	198	88	183	90	175	97	185
05:45	86	160	114	164	104	202	101	175
06:00	117	150	110	172	104	182	110	168
06:15	164	160	142	164	134	166	147	163
06:30	192	145	182	164	175	176	183	162
06:45	186	142	204	148	202	142	197	144
07:00	220	143	205	127	174	136	200	135
07:15	232	137	226	132	254	117	237	129
07:30	239	108	264	126	257	109	253	114
07:45	230	116	222	149	244	113	232	126
08:00	194	126	230	102	220	132	215	120
08:15	212	130	230	111	236	122	226	121
08:30	232	110	218	112	244	107	231	110
08:45	214	106	201	115	210	99	208	107
09:00	201	84	166	102	170	110	179	99
09:15	196	98	152	99	213	104	187	100
09:30	154	96	166	94	171	102	164	97
09:45	175	74	170	84	172	88	172	82
10:00	160	98	128	88	144	78	144	88
10:15	150	82	146	64	146	76	147	74
10:30	158	68	128	66	168	92	151	75
10:45	148	60	148	57	132	49	143	55
11:00	132	42	102	39	140	50	125	44
11:15	158	40	174	46	150	50	161	45
11:30	146	40	176	26	154	37	159	34
11:45	152	35	164	30	172	31	163	32
Total	4976	6490	4890	6688	5020	6672	4960	6613
Combined Total	11466		11578		11692		11573	
Peak	07:00	03:45	07:30	04:15	07:15	04:30	07:15	04:30
Vol.	921	776	946	826	975	786	937	788
P.H.F.	0.963	0.956	0.896	0.926	0.948	0.954	0.926	0.961
ADT	ADT 11,573		AADT 11,573					

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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Location: Sumner Ave Westbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Westbound																85th	95th
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Percent	Percent
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/15	0	1	8	26	24	14	1	0	0	0	0	0	0	0	74	36	39
01:00	1	0	4	12	15	10	1	0	0	0	0	0	0	0	43	37	39
02:00	1	1	0	5	10	11	1	0	0	0	0	0	0	0	29	38	40
03:00	5	1	4	8	20	15	1	0	1	0	0	0	0	0	55	37	39
04:00	5	2	2	20	51	27	6	0	1	0	0	0	0	0	114	37	40
05:00	12	3	14	81	108	64	13	8	2	0	0	0	0	0	305	37	42
06:00	39	11	75	197	190	67	9	0	0	0	0	0	0	0	588	34	38
07:00	93	40	144	314	204	64	5	2	0	0	0	0	0	0	866	33	36
08:00	149	59	186	260	171	39	5	0	0	0	0	0	0	0	869	31	35
09:00	92	37	117	226	159	34	7	0	0	0	0	0	0	0	672	32	35
10:00	85	23	68	192	142	41	4	0	0	0	0	0	0	0	555	33	36
11:00	59	25	96	194	159	44	5	0	0	0	0	0	0	0	582	33	36
12 PM	67	30	105	211	147	32	4	0	0	0	0	0	0	0	596	32	36
13:00	84	43	68	200	138	30	7	0	1	0	0	0	0	0	571	32	36
14:00	84	38	116	209	143	49	3	1	0	0	0	0	0	0	643	32	36
15:00	113	60	126	230	172	26	1	0	0	0	0	0	0	0	728	32	35
16:00	85	67	146	241	148	34	7	1	0	0	0	0	0	0	729	32	35
17:00	90	51	135	252	183	40	3	0	0	0	0	0	0	0	754	32	35
18:00	93	23	109	244	157	34	5	1	0	0	0	0	0	0	666	32	35
19:00	47	18	64	150	155	36	4	0	0	0	0	0	0	0	474	33	36
20:00	41	16	101	170	96	24	3	0	0	0	0	0	0	0	451	32	35
21:00	43	8	70	154	101	27	4	1	0	0	0	0	0	0	408	33	36
22:00	34	8	47	70	93	37	4	0	0	0	0	0	0	0	293	34	38
23:00	7	1	11	43	73	29	3	1	0	0	0	0	0	0	168	36	39
Total	1329	566	1816	3709	2859	828	106	15	5	0	0	0	0	0	11233		
Percent	11.8%	5.0%	16.2%	33.0%	25.5%	7.4%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	07:00	07:00	06:00	05:00	05:00	05:00						08:00		
Vol.	149	59	186	314	204	67	13	8	2						869		
PM Peak	15:00	16:00	16:00	17:00	17:00	14:00	13:00	14:00	13:00						17:00		
Vol.	113	67	146	252	183	49	7	1	1						754		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

innovativedata.com or 1.413.668.5094

Location: Sumner Ave Westbound
 Location: between Belmont & Ormond
 Location: Springfield, Massachusetts
 Client: Tighe & Bond

Westbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	85th Percent	95th Percent	
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	
05/08/15	2	0	9	7	34	18	6	0	0	0	0	0	0	0	76	38	41
01:00	4	1	4	13	25	8	1	0	0	0	0	0	0	0	56	35	38
02:00	1	1	5	9	14	10	0	0	0	0	0	0	0	0	40	37	39
03:00	1	2	7	5	17	12	5	0	0	0	0	0	0	0	49	39	42
04:00	4	1	3	17	36	29	10	1	0	0	0	0	0	0	101	39	43
05:00	7	1	15	37	130	69	27	3	0	0	0	0	0	0	289	38	42
06:00	47	8	50	146	226	90	17	1	0	0	0	0	0	0	585	36	39
07:00	147	48	144	279	191	59	9	0	0	0	0	0	0	0	877	32	36
08:00	134	61	182	295	143	23	1	1	0	0	0	0	0	0	840	30	34
09:00	107	47	152	225	140	28	2	0	0	0	0	0	0	0	701	31	35
10:00	93	53	106	205	137	21	9	2	0	0	0	0	0	0	626	32	35
11:00	67	33	138	242	142	21	4	0	0	0	0	0	0	0	647	32	35
12 PM	85	39	141	215	138	31	3	0	0	0	0	0	0	0	652	32	35
13:00	67	41	145	227	119	26	0	0	0	0	0	0	0	0	625	31	35
14:00	85	67	137	209	141	31	5	0	0	0	0	0	0	0	675	32	35
15:00	97	77	155	213	144	24	2	0	0	0	0	0	0	0	712	31	34
16:00	160	95	181	268	98	20	1	0	0	0	0	0	0	0	823	29	33
17:00	97	36	115	265	165	52	10	0	0	0	0	0	0	0	740	33	36
18:00	80	29	164	244	154	37	4	0	0	0	0	0	0	0	712	32	35
19:00	77	19	89	209	158	36	3	0	0	0	0	0	0	0	591	33	36
20:00	80	51	93	179	107	32	3	0	0	0	0	0	0	0	545	32	36
21:00	80	30	109	143	128	24	5	0	0	0	0	0	0	0	519	32	36
22:00	52	15	64	160	104	22	4	0	0	0	0	0	0	0	421	32	36
23:00	16	8	21	76	86	38	9	0	0	0	0	0	0	0	254	36	39
Total	1590	763	2229	3888	2777	761	140	8	0	0	0	0	0	0	12156		
Percent	13.1%	6.3%	18.3%	32.0%	22.8%	6.3%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	08:00	06:00	06:00	05:00	05:00									07:00
Vol.	147	61	182	295	226	90	27	3									877
PM Peak	16:00	16:00	16:00	16:00	17:00	17:00	17:00										16:00
Vol.	160	95	181	268	165	52	10										823
Total	2919	1329	4045	7597	5636	1589	246	23	5	0	0	0	0	0	23389		
Percent	12.5%	5.7%	17.3%	32.5%	24.1%	6.8%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 10 MPH
 50th Percentile : 26 MPH
 85th Percentile : 33 MPH
 95th Percentile : 36 MPH

Stats
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 11177
 Percent in Pace : 47.8%
 Number of Vehicles > 40 MPH : 386
 Percent of Vehicles > 40 MPH : 1.6%
 Mean Speed(Average) : 24 MPH

Innovative Data, LLC
 PO Box 468
 Belchertown, Massachusetts
 innovativedataallc.com or 1.413.668.5094

Westbound																
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total	
05/07/15	0	65	7	0	1	0	0	0	0	0	0	0	0	1	74	
01:00	0	38	4	0	0	1	0	0	0	0	0	0	0	0	43	
02:00	0	26	1	0	0	0	0	0	1	0	0	0	0	1	29	
03:00	0	44	6	0	1	0	0	0	0	0	0	0	0	4	55	
04:00	0	93	15	0	1	0	0	1	1	0	0	0	0	3	114	
05:00	2	248	37	2	3	0	0	2	0	0	0	0	0	11	305	
06:00	9	449	70	2	8	2	0	3	2	2	0	0	1	40	588	
07:00	13	668	82	2	10	3	1	10	1	0	2	1	0	73	866	
08:00	21	616	92	4	17	7	0	3	0	0	1	0	0	108	869	
09:00	17	509	52	3	8	1	0	8	2	0	0	0	1	71	672	
10:00	17	419	39	3	9	3	0	4	0	0	0	0	0	61	555	
11:00	15	439	56	4	4	4	0	7	1	1	1	0	1	49	582	
12 PM	12	466	59	2	7	0	0	6	0	0	0	0	0	44	596	
13:00	10	434	53	2	9	2	0	6	2	0	0	0	0	53	571	
14:00	12	488	55	3	11	3	0	2	2	0	1	0	0	66	643	
15:00	11	529	72	10	15	2	0	3	1	2	0	0	0	83	728	
16:00	24	555	71	4	9	0	0	5	1	1	0	0	1	58	729	
17:00	20	599	52	6	4	1	0	6	1	0	1	0	1	63	754	
18:00	21	511	62	2	3	0	0	1	0	0	0	0	0	66	666	
19:00	11	389	30	3	5	0	0	2	0	0	0	1	0	33	474	
20:00	15	372	27	1	2	1	0	2	0	1	0	0	0	30	451	
21:00	12	333	27	3	4	0	0	0	0	0	0	0	0	29	408	
22:00	8	235	20	0	2	0	0	2	0	0	1	0	0	25	293	
23:00	0	155	8	0	0	0	0	0	0	0	0	0	0	5	168	
Total	250	8680	997	56	133	30	1	73	15	7	7	2	5	977	11233	
Percent	2.2%	77.3%	8.9%	0.5%	1.2%	0.3%	0.0%	0.6%	0.1%	0.1%	0.1%	0.0%	0.0%	8.7%		
AM Peak	08:00	07:00	08:00	08:00	08:00	08:00	07:00	07:00	06:00	06:00	07:00	07:00	06:00	08:00		
Vol.	21	668	92	4	17	7	1	10	2	2	2	1	1	108		
PM Peak	16:00	17:00	15:00	15:00	15:00	14:00		12:00	13:00	15:00	14:00	19:00	16:00	15:00		
Vol.	24	599	72	10	15	3		6	2	2	1	1	1	83		

Innovative Data, LLC
 PO Box 468
 Belchertown, Massachusetts
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Westbound																
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total	
05/08/15	0	70	6	0	0	0	0	0	0	0	0	0	0	0	76	
01:00	1	48	4	0	1	0	0	0	0	0	0	0	0	2	56	
02:00	0	36	3	0	0	0	0	0	0	0	0	0	0	1	40	
03:00	1	45	2	0	0	0	0	0	0	0	0	0	0	1	49	
04:00	0	74	21	0	1	1	0	0	0	0	0	0	0	4	101	
05:00	4	213	50	1	8	1	1	2	0	0	0	1	0	8	289	
06:00	6	459	60	1	7	2	1	4	0	0	1	1	1	42	585	
07:00	17	666	66	5	10	2	0	4	1	1	0	0	0	105	877	
08:00	18	624	62	6	14	2	0	6	1	0	0	1	0	106	840	
09:00	18	506	60	7	14	2	0	6	2	0	0	0	0	86	701	
10:00	14	467	52	8	8	3	0	1	0	0	1	0	0	72	626	
11:00	12	498	56	7	18	1	0	6	1	0	0	0	0	48	647	
12 PM	8	509	52	6	6	3	0	6	1	1	0	0	0	60	652	
13:00	7	490	57	7	4	2	0	4	3	0	0	0	0	51	625	
14:00	17	516	53	5	12	3	0	6	1	0	2	0	2	58	675	
15:00	13	536	56	9	13	4	0	6	0	0	1	0	1	73	712	
16:00	25	629	50	2	10	0	0	5	0	0	0	1	0	101	823	
17:00	17	577	50	1	6	0	0	6	0	0	0	0	0	83	740	
18:00	11	572	48	4	8	1	0	6	1	0	0	0	0	61	712	
19:00	19	464	35	3	2	0	0	2	0	0	0	0	0	66	591	
20:00	22	432	31	1	4	0	0	0	0	0	0	0	0	55	545	
21:00	29	398	35	3	4	0	0	1	0	0	0	0	0	49	519	
22:00	14	334	32	0	2	0	0	0	0	0	0	0	0	39	421	
23:00	6	219	13	0	4	0	0	0	1	0	0	0	0	11	254	
Total	279	9382	954	76	156	27	2	71	12	2	5	4	4	1182	12156	
Percent	2.3%	77.2%	7.8%	0.6%	1.3%	0.2%	0.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	9.7%		
AM Peak	08:00	07:00	07:00	10:00	11:00	10:00	05:00	08:00	09:00	07:00	06:00	05:00	06:00	08:00		
Vol.	18	666	66	8	18	3	1	6	2	1	1	1	1	106		
PM Peak	21:00	16:00	13:00	15:00	15:00	15:00		12:00	13:00	12:00	14:00	16:00	14:00	16:00		
Vol.	29	629	57	9	13	4		6	3	1	2	1	2	101		
Grand Total	529	18062	1951	132	289	57	3	144	27	9	12	6	9	2159	23389	
Percent	2.3%	77.2%	8.3%	0.6%	1.2%	0.2%	0.0%	0.6%	0.1%	0.0%	0.1%	0.0%	0.0%	9.2%		



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Forest Park

E / W: Sumner Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 1. AM Peak - Sumner @ Forest Park

Site Code : 1

Start Date : 5/7/2015

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	1	0	1	0	270	3	0	273	3	0	0	0	3	5	170	0	0	175	452
07:15 AM	0	0	3	0	3	0	257	3	0	260	3	0	0	0	3	0	221	1	0	222	488
07:30 AM	0	0	1	0	1	0	330	3	0	333	3	0	0	0	3	0	200	0	0	200	537
07:45 AM	0	0	1	0	1	1	317	4	0	322	1	0	0	0	1	6	242	0	0	248	572
Total	0	0	6	0	6	1	1174	13	0	1188	10	0	0	0	10	11	833	1	0	845	2049
08:00 AM	0	0	0	0	0	0	301	9	0	310	0	0	0	0	0	1	237	0	0	238	548
08:15 AM	0	0	0	0	0	0	313	9	0	322	5	0	3	0	8	1	209	0	0	210	540
08:30 AM	0	0	0	0	0	0	255	1	0	256	2	0	1	0	3	4	261	1	0	266	525
08:45 AM	0	0	1	0	1	0	263	6	0	269	4	0	2	0	6	0	227	0	0	227	503
Total	0	0	1	0	1	0	1132	25	0	1157	11	0	6	0	17	6	934	1	0	941	2116
Grand Total	0	0	7	0	7	1	2306	38	0	2345	21	0	6	0	27	17	1767	2	0	1786	4165
Apprch %	0	0	100	0		0	98.3	1.6	0		77.8	0	22.2	0		1	98.9	0.1	0		
Total %	0	0	0.2	0	0.2	0	55.4	0.9	0	56.3	0.5	0	0.1	0	0.6	0.4	42.4	0	0	42.9	
PCs and Peds						2243					1683										
% PCs and Peds	0	0	71.4	0	71.4	100	97.3	94.7	0	97.2	95.2	0	100	0	96.3	100	95.2	50	0	95.2	96.3
Heavy Vehicles																					
% Heavy Vehicles	0	0	28.6	0	28.6	0	2.7	5.3	0	2.8	4.8	0	0	0	3.7	0	4.8	50	0	4.8	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	0	0	1	0	1	0	330	3	0	333	3	0	0	0	3	0	200	0	0	200	537
07:45 AM	0	0	1	0	1	1	317	4	0	322	1	0	0	0	1	6	242	0	0	248	572
08:00 AM	0	0	0	0	0	0	301	9	0	310	0	0	0	0	0	1	237	0	0	238	548
08:15 AM	0	0	0	0	0	0	313	9	0	322	5	0	3	0	8	1	209	0	0	210	540
Total Volume	0	0	2	0	2	1	1261	25	0	1287	9	0	3	0	12	8	888	0	0	896	2197
% App. Total	0	0	100	0		0.1	98	1.9	0		75	0	25	0		0.9	99.1	0	0		
PHF	.000	.000	.500	.000	.500	.250	.955	.694	.000	.966	.450	.000	.250	.000	.375	.333	.917	.000	.000	.903	.960



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Forest Park
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 1. AM Peak - Sumner @ Forest Park
 Site Code : 1
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	12
07:15 AM	0	0	2	0	2	0	9	0	0	9	1	0	0	0	1	0	9	1	0	10	22
07:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	18
07:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13
Total	0	0	2	0	2	0	23	0	0	23	1	0	0	0	1	0	38	1	0	39	65
08:00 AM	0	0	0	0	0	0	16	2	0	18	0	0	0	0	0	0	9	0	0	9	27
08:15 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	20
08:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	17
08:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	18	0	0	18	24
Total	0	0	0	0	0	0	40	2	0	42	0	0	0	0	0	0	46	0	0	46	88
Grand Total	0	0	2	0	2	0	63	2	0	65	1	0	0	0	1	0	84	1	0	85	153
Apprch %	0	0	100	0		0	96.9	3.1	0		100	0	0	0		0	98.8	1.2	0		
Total %	0	0	1.3	0	1.3	0	41.2	1.3	0	42.5	0.7	0	0	0	0.7	0	54.9	0.7	0	55.6	

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	16	2	0	18	0	0	0	0	0	0	9	0	0	9	27
08:15 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	20
08:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	17
08:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	18	0	0	18	24
Total Volume	0	0	0	0	0	0	40	2	0	42	0	0	0	0	0	0	46	0	0	46	88
% App. Total	0	0	0	0		0	95.2	4.8	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.625	.250	.000	.583	.000	.000	.000	.000	.000	.000	.639	.000	.000	.639	.815



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Oakland Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 2. AM Peak - Sumner @ Oakland
 Site Code : 2
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	23	1	2	1	27	8	277	0	1	286	0	0	0	2	2	5	181	33	7	226	541
07:15 AM	35	2	12	0	49	19	268	0	0	287	0	0	0	6	6	0	250	44	15	309	651
07:30 AM	18	0	7	0	25	36	258	11	0	305	0	0	0	13	13	0	282	28	31	341	684
07:45 AM	22	0	25	5	52	22	304	1	0	327	0	0	0	3	3	0	257	28	29	314	696
Total	98	3	46	6	153	85	1107	12	1	1205	0	0	0	24	24	5	970	133	82	1190	2572
08:00 AM	30	0	13	1	44	7	279	0	0	286	0	0	0	3	3	0	192	27	9	228	561
08:15 AM	24	0	4	30	58	3	261	0	0	264	0	0	0	0	0	1	178	45	1	225	547
08:30 AM	26	0	4	4	34	1	260	0	0	261	0	0	0	3	3	0	187	21	4	212	510
08:45 AM	17	0	3	0	20	3	216	0	0	219	0	0	0	6	6	1	219	43	36	299	544
Total	97	0	24	35	156	14	1016	0	0	1030	0	0	0	12	12	2	776	136	50	964	2162
Grand Total	195	3	70	41	309	99	2123	12	1	2235	0	0	0	36	36	7	1746	269	132	2154	4734
Apprch %	63.1	1	22.7	13.3		4.4	95	0.5	0		0	0	0	100		0.3	81.1	12.5	6.1		
Total %	4.1	0.1	1.5	0.9	6.5	2.1	44.8	0.3	0	47.2	0	0	0	0.8	0.8	0.1	36.9	5.7	2.8	45.5	
PCs and Peds						2083										1678					
% PCs and Peds	91.8	100	97.1	100	94.2	97	98.1	100	100	98.1	0	0	0	100	100	100	96.1	92.6	100	95.9	96.9
Heavy Vehicles																					
% Heavy Vehicles	8.2	0	2.9	0	5.8	3	1.8	0	0	1.9	0	0	0	0	0	0	3.9	7.4	0	4.1	3.1
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	35	2	12	0	49	19	268	0	0	287	0	0	0	6	6	0	250	44	15	309	651
07:30 AM	18	0	7	0	25	36	258	11	0	305	0	0	0	13	13	0	282	28	31	341	684
07:45 AM	22	0	25	5	52	22	304	1	0	327	0	0	0	3	3	0	257	28	29	314	696
08:00 AM	30	0	13	1	44	7	279	0	0	286	0	0	0	3	3	0	192	27	9	228	561
Total Volume	105	2	57	6	170	84	1109	12	0	1205	0	0	0	25	25	0	981	127	84	1192	2592
% App. Total	61.8	1.2	33.5	3.5		7	92	1	0		0	0	0	100		0	82.3	10.7	7		
PHF	.750	.250	.570	.300	.817	.583	.912	.273	.000	.921	.000	.000	.000	.481	.481	.000	.870	.722	.677	.874	.931



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PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 2. AM Peak - Sumner @ Oakland
 Site Code : 2
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	3	0	0	0	3	0	3	0	0	3	0	0	0	0	0	0	8	4	0	12	18
07:15 AM	3	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	5	5	0	10	15
07:30 AM	3	0	1	0	4	1	2	0	0	3	0	0	0	0	0	0	7	1	0	8	15
07:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	9	1	0	10	16
Total	9	0	1	0	10	1	13	0	0	14	0	0	0	0	0	0	29	11	0	40	64
08:00 AM	4	0	0	0	4	1	8	0	0	9	0	0	0	0	0	0	7	3	0	10	23
08:15 AM	2	0	1	0	3	1	7	0	0	8	0	0	0	0	0	0	9	3	0	12	23
08:30 AM	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	13	1	0	14	23
08:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	10	2	0	12	15
Total	7	0	1	0	8	2	26	0	0	28	0	0	0	0	0	0	39	9	0	48	84
Grand Total	16	0	2	0	18	3	39	0	0	42	0	0	0	0	0	0	68	20	0	88	148
Apprch %	88.9	0	11.1	0		7.1	92.9	0	0		0	0	0	0		0	77.3	22.7	0		
Total %	10.8	0	1.4	0	12.2	2	26.4	0	0	28.4	0	0	0	0	0	0	45.9	13.5	0	59.5	

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	9	1	0	10	16
08:00 AM	4	0	0	0	4	1	8	0	0	9	0	0	0	0	0	0	7	3	0	10	23
08:15 AM	2	0	1	0	3	1	7	0	0	8	0	0	0	0	0	0	9	3	0	12	23
08:30 AM	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	13	1	0	14	23
Total Volume	7	0	1	0	8	2	29	0	0	31	0	0	0	0	0	0	38	8	0	46	85
% App. Total	87.5	0	12.5	0		6.5	93.5	0	0		0	0	0	0		0	82.6	17.4	0		
PHF	.438	.000	.250	.000	.500	.500	.906	.000	.000	.861	.000	.000	.000	.000	.000	.000	.731	.667	.000	.821	.924



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PO Box 468

Belchertown, Massachusetts

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N / S: Cliftwood Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 3. AM Peak - Sumner @ Cliftwood
 Site Code : 3
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Driveway From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	1	0	0	0	1	2	254	1	0	257	0	0	0	0	0	16	137	0	0	153	411
07:15 AM	0	0	0	0	0	1	279	1	0	281	0	0	0	0	0	22	190	1	0	213	494
07:30 AM	0	0	0	0	0	4	280	6	0	290	0	0	0	0	0	15	175	0	0	190	480
07:45 AM	0	0	0	0	0	4	271	2	0	277	0	0	0	0	0	32	184	0	0	216	493
Total	1	0	0	0	1	11	1084	10	0	1105	0	0	0	0	0	85	686	1	0	772	1878
08:00 AM	0	0	0	0	0	0	253	1	0	254	0	0	0	1	1	25	176	1	0	202	457
08:15 AM	1	0	0	0	1	0	250	4	0	254	0	0	0	0	0	23	151	2	0	176	431
08:30 AM	1	0	0	0	1	1	254	8	0	263	0	0	0	0	0	18	172	0	0	190	454
08:45 AM	2	0	0	0	2	3	208	8	0	219	0	0	0	0	0	21	157	3	0	181	402
Total	4	0	0	0	4	4	965	21	0	990	0	0	0	1	1	87	656	6	0	749	1744
Grand Total	5	0	0	0	5	15	2049	31	0	2095	0	0	0	1	1	172	1342	7	0	1521	3622
Apprch %	100	0	0	0		0.7	97.8	1.5	0		0	0	0	100		11.3	88.2	0.5	0		
Total %	0.1	0	0	0	0.1	0.4	56.6	0.9	0	57.8	0	0	0	0	0	4.7	37.1	0.2	0	42	
PCs and Peds						2023					1286										
% PCs and Peds	100	0	0	0	100	100	98.7	93.5	0	98.7	0	0	0	0	0	98.3	95.8	100	0	96.1	97.6
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	1.3	6.5	0	1.3	0	0	0	0	0	1.7	4.2	0	0	3.9	2.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0

Start Time	Driveway From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	1	279	1	0	281	0	0	0	0	0	22	190	1	0	213	494
07:30 AM	0	0	0	0	0	4	280	6	0	290	0	0	0	0	0	15	175	0	0	190	480
07:45 AM	0	0	0	0	0	4	271	2	0	277	0	0	0	0	0	32	184	0	0	216	493
08:00 AM	0	0	0	0	0	0	253	1	0	254	0	0	0	1	1	25	176	1	0	202	457
Total Volume	0	0	0	0	0	9	1083	10	0	1102	0	0	0	1	1	94	725	2	0	821	1924
% App. Total	0	0	0	0	0	0.8	98.3	0.9	0		0	0	0	100		11.4	88.3	0.2	0		
PHF	.000	.000	.000	.000	.000	.563	.967	.417	.000	.950	.000	.000	.000	.250	.250	.734	.954	.500	.000	.950	.974



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Belchertown, Massachusetts

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N / S: Cliftwood Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 3. AM Peak - Sumner @ Cliftwood
 Site Code : 3
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Driveway From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
07:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
07:30 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	1	7	0	0	8	12
07:45 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	5	0	0	5	11
Total	0	0	0	0	0	0	14	2	0	16	0	0	0	0	0	1	24	0	0	25	41
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	10
08:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	7	0	0	8	11
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	10	0	0	11	14
08:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	11
Total	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	2	32	0	0	34	46
Grand Total	0	0	0	0	0	0	26	2	0	28	0	0	0	0	0	3	56	0	0	59	87
Apprch %	0	0	0	0	0	0	92.9	7.1	0	32.2	0	0	0	0	0	5.1	94.9	0	0	67.8	
Total %	0	0	0	0	0	0	29.9	2.3	0	32.2	0	0	0	0	0	3.4	64.4	0	0	67.8	

Start Time	Driveway From North					Sumner From East					Cliftwood From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	5	0	0	5	11
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	10
08:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	7	0	0	8	11
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	10	0	0	11	14
Total Volume	0	0	0	0	0	0	14	1	0	15	0	0	0	0	0	2	29	0	0	31	46
% App. Total	0	0	0	0	0	0	93.3	6.7	0	32.2	0	0	0	0	0	6.5	93.5	0	0	67.8	
PHF	.000	.000	.000	.000	.000	.000	.700	.250	.000	.625	.000	.000	.000	.000	.000	.500	.725	.000	.000	.705	.821



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PO Box 468

Belchertown, Massachusetts

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N / S: Beaumont Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 4. AM Peak - Sumner @ Beaumont
 Site Code : 4
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	3	0	1	0	4	3	291	0	0	294	0	0	0	0	0	0	116	0	0	116	414
07:15 AM	7	0	1	0	8	3	165	0	0	168	0	0	0	0	0	0	154	1	0	155	331
07:30 AM	4	0	0	0	4	1	293	0	0	294	0	0	0	0	0	0	208	2	0	210	508
07:45 AM	8	0	0	0	8	0	311	0	0	311	0	0	0	31	31	0	217	1	0	218	568
Total	22	0	2	0	24	7	1060	0	0	1067	0	0	0	31	31	0	695	4	0	699	1821
08:00 AM	4	0	0	0	4	3	253	0	0	256	0	0	0	10	10	0	199	3	0	202	472
08:15 AM	5	0	0	0	5	1	281	0	0	282	0	0	0	14	14	0	176	3	0	179	480
08:30 AM	5	0	6	0	11	0	236	0	0	236	0	0	0	2	2	0	193	1	2	196	445
08:45 AM	1	0	1	0	2	2	235	0	0	237	0	0	0	8	8	0	187	6	1	194	441
Total	15	0	7	0	22	6	1005	0	0	1011	0	0	0	34	34	0	755	13	3	771	1838
Grand Total	37	0	9	0	46	13	2065	0	0	2078	0	0	0	65	65	0	1450	17	3	1470	3659
Apprch %	80.4	0	19.6	0		0.6	99.4	0	0		0	0	0	100		0	98.6	1.2	0.2		
Total %	1	0	0.2	0	1.3	0.4	56.4	0	0	56.8	0	0	0	1.8	1.8	0	39.6	0.5	0.1	40.2	
PCs and Peds						2029					1403										
% PCs and Peds	100	0	100	0	100	61.5	98.3	0	0	98	0	0	0	100	100	0	96.8	100	100	96.8	97.6
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	23.1	1.6	0	0	1.8	0	0	0	0	0	0	3.2	0	0	3.1	2.3
Bicycles	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	0	1	0	0	1	5
% Bicycles	0	0	0	0	0	15.4	0.1	0	0	0.2	0	0	0	0	0	0	0.1	0	0	0.1	0.1

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

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

Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	4	0	0	0	4	1	293	0	0	294	0	0	0	0	0	0	208	2	0	210	508
07:45 AM	8	0	0	0	8	0	311	0	0	311	0	0	0	31	31	0	217	1	0	218	568
08:00 AM	4	0	0	0	4	3	253	0	0	256	0	0	0	10	10	0	199	3	0	202	472
08:15 AM	5	0	0	0	5	1	281	0	0	282	0	0	0	14	14	0	176	3	0	179	480
Total Volume	21	0	0	0	21	5	1138	0	0	1143	0	0	0	55	55	0	800	9	0	809	2028
% App. Total	100	0	0	0		0.4	99.6	0	0		0	0	0	100		0	98.9	1.1	0		
PHF	.656	.000	.000	.000	.656	.417	.915	.000	.000	.919	.000	.000	.000	.444	.444	.000	.922	.750	.000	.928	.893



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N / S: Beaumont Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 4. AM Peak - Sumner @ Beaumont
 Site Code : 4
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	4	0	0	4	6
07:15 AM	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	0	5	0	0	5	11
07:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
Total	0	0	0	0	0	3	11	0	0	14	0	0	0	0	0	0	20	0	0	20	34
08:00 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	14
08:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	16
08:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	12
Total	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	26	0	0	26	49
Grand Total	0	0	0	0	0	3	34	0	0	37	0	0	0	0	0	0	46	0	0	46	83
Apprch %	0	0	0	0	0	8.1	91.9	0	0		0	0	0	0	0	0	100	0	0		
Total %	0	0	0	0	0	3.6	41	0	0	44.6	0	0	0	0	0	0	55.4	0	0	55.4	

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	14
08:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	16
08:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	12
Total Volume	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	26	0	0	26	49
% App. Total	0	0	0	0	0	0	100	0	0		0	0	0	0	0	0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.639	.000	.000	.639	.000	.000	.000	.000	.000	.000	.650	.000	.000	.650	.766



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N / S: Belmont & Lenox
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 5. AM Peak - Sumner @ Belmont & Lenox
 Site Code : 5
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	1	0	29	2	32	60	180	0	0	240	0	19	56	4	79	0	0	0	0	0	351
07:15 AM	2	0	32	1	35	70	240	0	0	310	1	11	53	2	67	0	0	0	0	0	412
07:30 AM	0	0	47	2	49	83	218	0	0	301	1	26	62	0	89	0	0	0	0	0	439
07:45 AM	0	0	37	2	39	81	211	0	1	293	1	21	54	6	82	0	0	0	1	1	415
Total	3	0	145	7	155	294	849	0	1	1144	3	77	225	12	317	0	0	0	1	1	1617
08:00 AM	0	6	34	1	41	57	205	0	1	263	1	19	75	3	98	0	0	0	1	1	403
08:15 AM	1	0	60	1	62	71	196	0	2	269	3	13	44	1	61	0	0	0	2	2	394
08:30 AM	0	0	42	2	44	69	178	0	2	249	1	27	62	0	90	0	0	0	2	2	385
08:45 AM	1	0	37	2	40	55	187	0	0	242	0	14	35	1	50	0	0	0	0	0	332
Total	2	6	173	6	187	252	766	0	5	1023	5	73	216	5	299	0	0	0	5	5	1514
Grand Total	5	6	318	13	342	546	1615	0	6	2167	8	150	441	17	616	0	0	0	6	6	3131
Apprch %	1.5	1.8	93	3.8		25.2	74.5	0	0.3		1.3	24.4	71.6	2.8		0	0	0	100		
Total %	0.2	0.2	10.2	0.4	10.9	17.4	51.6	0	0.2	69.2	0.3	4.8	14.1	0.5	19.7	0	0	0	0.2	0.2	
PCs and Peds						1595															
% PCs and Peds	100	100	95.3	100	95.6	98	98.8	0	100	98.6	100	99.3	100	100	99.8	0	0	0	100	100	98.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	4.7	0	4.4	2	1.2	0	0	1.4	0	0.7	0	0	0.2	0	0	0	0	0	1.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* EB Thru Traffic Counted at Locations 6 & 7 - Sumner @ Belmont & Dickinson

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	0	32	1	35	70	240	0	0	310	1	11	53	2	67	0	0	0	0	0	412
07:30 AM	0	0	47	2	49	83	218	0	0	301	1	26	62	0	89	0	0	0	0	0	439
07:45 AM	0	0	37	2	39	81	211	0	1	293	1	21	54	6	82	0	0	0	1	1	415
08:00 AM	0	6	34	1	41	57	205	0	1	263	1	19	75	3	98	0	0	0	1	1	403
Total Volume	2	6	150	6	164	291	874	0	2	1167	4	77	244	11	336	0	0	0	2	2	1669
% App. Total	1.2	3.7	91.5	3.7		24.9	74.9	0	0.2		1.2	22.9	72.6	3.3		0	0	0	100		
PHF	.250	.250	.798	.750	.837	.877	.910	.000	.500	.941	1.00	.740	.813	.458	.857	.000	.000	.000	.500	.500	.950



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Belmont & Lenox

E / W: Sumner Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 5. AM Peak - Sumner @ Belmont & Lenox

Site Code : 5

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	1	0	1	2	3	0	0	5	0	1	0	0	1	0	0	0	0	0	7
07:15 AM	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	5
07:30 AM	0	0	2	0	2	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	0	0	2	0	2	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	6	0	6	5	13	0	0	18	0	1	0	0	1	0	0	0	0	0	25
08:00 AM	0	0	4	0	4	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	10
08:15 AM	0	0	4	0	4	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	7
08:30 AM	0	0	1	0	1	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	5
*** BREAK ***																					
Total	0	0	9	0	9	6	7	0	0	13	0	0	0	0	0	0	0	0	0	0	22
Grand Total	0	0	15	0	15	11	20	0	0	31	0	1	0	0	1	0	0	0	0	0	47
Apprch %	0	0	100	0		35.5	64.5	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	31.9	0	31.9	23.4	42.6	0	0	66	0	2.1	0	0	2.1	0	0	0	0	0	

* EB Thru Traffic Counted at Locations 6 & 7 - Sumner @ Belmont & Dickinson

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	2	0	2	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	0	0	2	0	2	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	8
08:00 AM	0	0	4	0	4	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	10
08:15 AM	0	0	4	0	4	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	7
Total Volume	0	0	12	0	12	5	13	0	0	18	0	0	0	0	0	0	0	0	0	0	30
% App. Total	0	0	100	0		27.8	72.2	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.750	.000	.750	.625	.650	.000	.000	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750



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Belchertown, Massachusetts

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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 6 & 7. AM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South					Sumner From West					Int. Total
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds	App. Total	
07:00 AM	0	17	7	6	0	30	3	191	5	199	0	93	0	93	5	36	4	3	48	12	37	86	3	138	508
07:15 AM	1	19	4	3	0	27	6	200	5	211	0	75	0	75	2	42	2	3	49	19	69	133	3	224	586
07:30 AM	0	31	9	2	4	46	12	223	6	241	0	98	0	98	7	57	1	9	74	17	69	132	4	222	681
07:45 AM	2	29	13	2	1	47	17	254	4	275	0	83	0	83	12	53	3	10	78	23	78	141	0	242	725
Total	3	96	33	13	5	150	38	868	20	926	0	349	0	349	26	188	10	25	249	71	253	492	10	826	2500
08:00 AM	1	28	11	5	0	45	24	200	4	228	0	80	0	80	5	56	4	4	69	19	61	130	10	220	642
08:15 AM	0	37	7	3	0	47	14	202	1	217	1	98	0	99	17	63	5	3	88	26	53	114	0	193	644
08:30 AM	0	46	8	4	0	58	23	202	5	230	2	87	0	89	4	59	1	2	66	22	69	123	3	217	660
08:45 AM	2	32	15	5	0	54	12	166	2	180	0	92	0	92	17	52	1	5	75	20	68	115	2	205	606
Total	3	143	41	17	0	204	73	770	12	855	3	357	0	360	43	230	11	14	298	87	251	482	15	835	2552
Grand Total	6	239	74	30	5	354	111	1638	32	1781	3	706	0	709	69	418	21	39	547	158	504	974	25	1661	5052
Apprch %	1.7	67.5	20.9	8.5	1.4		6.2	92	1.8		0.4	99.6	0		12.6	76.4	3.8	7.1		9.5	30.3	58.6	1.5		
Total %	0.1	4.7	1.5	0.6	0.1	7	2.2	32.4	0.6	35.3	0.1	14	0	14	1.4	8.3	0.4	0.8	10.8	3.1	10	19.3	0.5	32.9	
PCs and Peds	6	233	73	28	5	345	111	1622	32	1765	3	693	0	696	66	408	21	39	534	154	491	951	25	1621	4961
% PCs and Peds	100	97.5	98.6	93.3	100	97.5	100	99	100	99.1	100	98.2	0	98.2	95.7	97.6	100	100	97.6	97.5	97.4	97.6	100	97.6	98.2
Heavy Vehicles	0	6	1	2	0	9	0	15	0	15	0	13	0	13	3	10	0	0	13	4	13	23	0	40	90
% Heavy Vehicles	0	2.5	1.4	6.7	0	2.5	0	0.9	0	0.8	0	1.8	0	1.8	4.3	2.4	0	0	2.4	2.5	2.6	2.4	0	2.4	1.8
Bicycles	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 6 & 7. AM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 2

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South				Sumner From West					Int. Total	
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:30 AM																									
07:30 AM	0	31	9	2	4	46	12	223	6	241	0	98	0	98	7	57	1	9	74	17	69	132	4	222	681
07:45 AM	2	29	13	2	1	47	17	254	4	275	0	83	0	83	12	53	3	10	78	23	78	141	0	242	725
08:00 AM	1	28	11	5	0	45	24	200	4	228	0	80	0	80	5	56	4	4	69	19	61	130	10	220	642
08:15 AM	0	37	7	3	0	47	14	202	1	217	1	98	0	99	17	63	5	3	88	26	53	114	0	193	644
Total Volume	3	125	40	12	5	185	67	879	15	961	1	359	0	360	41	229	13	26	309	85	261	517	14	877	2692
% App. Total	1.6	67.6	21.6	6.5	2.7		7	91.5	1.6		0.3	99.7	0		13.3	74.1	4.2	8.4		9.7	29.8	59	1.6		
PHF	.375	.845	.769	.600	.313	.984	.698	.865	.625	.874	.250	.916	.000	.909	.603	.909	.650	.650	.878	.817	.837	.917	.350	.906	.928



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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 6 & 7. AM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South				Sumner From West					Int. Total	
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds		App. Total
07:00 AM	0	0	0	0	0	0	0	2	0	2	0	2	0	2	1	0	0	0	1	0	2	2	0	4	9
07:15 AM	0	0	0	1	0	1	0	1	0	1	0	2	0	2	0	2	0	0	2	0	3	1	0	4	10
07:30 AM	0	2	1	0	0	3	0	3	0	3	0	2	0	2	0	0	0	0	0	1	0	1	0	2	10
07:45 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	0	2	0	3	4	0	7	11
Total	0	2	1	1	0	4	0	7	0	7	0	7	0	7	3	2	0	0	5	1	8	8	0	17	40
08:00 AM	0	1	0	0	0	1	0	5	0	5	0	1	0	1	0	3	0	0	3	1	2	3	0	6	16
08:15 AM	0	2	0	1	0	3	0	1	0	1	0	1	0	1	0	3	0	0	3	1	1	5	0	7	15
08:30 AM	0	1	0	0	0	1	0	2	0	2	0	3	0	3	0	2	0	0	2	0	1	3	0	4	12
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	4	0	6	7
Total	0	4	0	1	0	5	0	8	0	8	0	6	0	6	0	8	0	0	8	3	5	15	0	23	50
Grand Total	0	6	1	2	0	9	0	15	0	15	0	13	0	13	3	10	0	0	13	4	13	23	0	40	90
Apprch %	0	66.7	11.1	22.2	0		0	100	0		0	100	0		23.1	76.9	0	0		10	32.5	57.5	0		
Total %	0	6.7	1.1	2.2	0	10	0	16.7	0	16.7	0	14.4	0	14.4	3.3	11.1	0	0	14.4	4.4	14.4	25.6	0	44.4	



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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 6 & 7. AM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 2

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South				Sumner From West					Int. Total	
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:45 AM																									
07:45 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	0	2	0	3	4	0	7	11
08:00 AM	0	1	0	0	0	1	0	5	0	5	0	1	0	1	0	3	0	0	3	1	2	3	0	6	16
08:15 AM	0	2	0	1	0	3	0	1	0	1	0	1	0	1	0	3	0	0	3	1	1	5	0	7	15
08:30 AM	0	1	0	0	0	1	0	2	0	2	0	3	0	3	0	2	0	0	2	0	1	3	0	4	12
Total Volume	0	4	0	1	0	5	0	9	0	9	0	6	0	6	2	8	0	0	10	2	7	15	0	24	54
% App. Total	0	.80	0	.20	0		0	100	0		0	100	0		20	80	0	0		8.3	29.2	62.5	0		
PHF	.000	.500	.000	.250	.000	.417	.000	.450	.000	.450	.000	.500	.000	.500	.250	.667	.000	.000	.833	.500	.583	.750	.000	.857	.844



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Belchertown, Massachusetts

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N / S: Ventura / Driveway
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 8. AM Peak - Sumner @ Ventura
 Site Code : 8
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	1	2	3	3	184	0	1	188	0	1	0	5	6	0	107	2	1	110	307
07:15 AM	1	0	0	3	4	6	238	0	0	244	0	0	0	4	4	0	151	0	0	151	403
07:30 AM	3	0	0	12	15	4	253	0	1	258	0	0	0	2	2	1	138	2	2	143	418
07:45 AM	2	1	0	6	9	10	209	1	0	220	0	0	0	3	3	0	151	1	0	152	384
Total	6	1	1	23	31	23	884	1	2	910	0	1	0	14	15	1	547	5	3	556	1512
08:00 AM	2	0	2	5	9	6	218	0	0	224	0	1	0	0	1	0	129	3	0	132	366
08:15 AM	2	1	2	11	16	10	230	1	0	241	0	0	0	0	0	0	138	4	2	144	401
08:30 AM	1	0	2	7	10	13	218	0	1	232	0	0	0	2	2	1	127	4	0	132	376
08:45 AM	3	0	2	7	12	10	182	0	0	192	0	0	0	5	5	0	141	7	1	149	358
Total	8	1	8	30	47	39	848	1	1	889	0	1	0	7	8	1	535	18	3	557	1501
Grand Total	14	2	9	53	78	62	1732	2	3	1799	0	2	0	21	23	2	1082	23	6	1113	3013
Apprch %	17.9	2.6	11.5	67.9		3.4	96.3	0.1	0.2		0	8.7	0	91.3		0.2	97.2	2.1	0.5		
Total %	0.5	0.1	0.3	1.8	2.6	2.1	57.5	0.1	0.1	59.7	0	0.1	0	0.7	0.8	0.1	35.9	0.8	0.2	36.9	
PCs and Peds						1712										1045					
% PCs and Peds	92.9	100	100	100	98.7	100	98.8	100	100	98.9	0	100	0	85.7	87	100	96.6	95.7	100	96.6	97.9
Heavy Vehicles																					
% Heavy Vehicles	7.1	0	0	0	1.3	0	1.1	0	0	1.1	0	0	0	0	0	0	3.4	0	0	3.3	1.9
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	3	3	0	0	1	0	1	5
% Bicycles	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	14.3	13	0	0	4.3	0	0.1	0.2

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	1	0	0	3	4	6	238	0	0	244	0	0	0	4	4	0	151	0	0	151	403
07:30 AM	3	0	0	12	15	4	253	0	1	258	0	0	0	2	2	1	138	2	2	143	418
07:45 AM	2	1	0	6	9	10	209	1	0	220	0	0	0	3	3	0	151	1	0	152	384
08:00 AM	2	0	2	5	9	6	218	0	0	224	0	1	0	0	1	0	129	3	0	132	366
Total Volume	8	1	2	26	37	26	918	1	1	946	0	1	0	9	10	1	569	6	2	578	1571
% App. Total	21.6	2.7	5.4	70.3		2.7	97	0.1	0.1		0	10	0	90		0.2	98.4	1	0.3		
PHF	.667	.250	.250	.542	.617	.650	.907	.250	.250	.917	.000	.250	.000	.563	.625	.250	.942	.500	.250	.951	.940



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovatedatallc.com or 1.413.668.5094

N / S: Ventura / Driveway
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 8. AM Peak - Sumner @ Ventura
 Site Code : 8
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
07:30 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
Total	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	13	0	0	13	22
08:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	12
Total	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	24	0	0	24	35
Grand Total	1	0	0	0	1	0	19	0	0	19	0	0	0	0	0	0	37	0	0	37	57
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	1.8	0	0	0	1.8	0	33.3	0	0	33.3	0	0	0	0	0	0	64.9	0	0	64.9	

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	12
Total Volume	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	24	0	0	24	35
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.550	.000	.000	.550	.000	.000	.000	.000	.000	.000	.600	.000	.000	.600	.729



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Ormond Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 9. AM Peak - Sumner @ Ormond
 Site Code : 9
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	2	0	2	0	174	8	0	182	17	1	6	1	25	1	120	1	2	124	333
07:15 AM	2	0	1	2	5	0	223	8	0	231	12	1	12	3	28	1	124	0	2	127	391
07:30 AM	2	1	0	2	5	1	240	7	3	251	14	1	16	1	32	1	156	0	0	157	445
07:45 AM	3	0	2	5	10	0	226	11	0	237	22	1	22	6	51	2	154	1	1	158	456
Total	7	1	5	9	22	1	863	34	3	901	65	4	56	11	136	5	554	2	5	566	1625
08:00 AM	5	0	0	2	7	0	191	13	0	204	23	0	22	0	45	1	155	2	2	160	416
08:15 AM	1	0	0	6	7	0	227	4	0	231	26	0	13	0	39	5	147	1	1	154	431
08:30 AM	1	1	2	0	4	0	207	9	0	216	23	1	33	0	57	3	123	0	5	131	408
08:45 AM	5	0	1	0	6	1	189	12	0	202	15	0	12	1	28	3	148	0	2	153	389
Total	12	1	3	8	24	1	814	38	0	853	87	1	80	1	169	12	573	3	10	598	1644
Grand Total	19	2	8	17	46	2	1677	72	3	1754	152	5	136	12	305	17	1127	5	15	1164	3269
Apprch %	41.3	4.3	17.4	37		0.1	95.6	4.1	0.2		49.8	1.6	44.6	3.9		1.5	96.8	0.4	1.3		
Total %	0.6	0.1	0.2	0.5	1.4	0.1	51.3	2.2	0.1	53.7	4.6	0.2	4.2	0.4	9.3	0.5	34.5	0.2	0.5	35.6	
PCs and Peds						1661					1098										
% PCs and Peds	100	100	100	100	100	100	99	98.6	100	99	100	100	100	100	100	94.1	97.4	80	100	97.3	98.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	0.9	1.4	0	0.9	0	0	0	0	0	5.9	2.5	20	0	2.6	1.4
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Bicycles	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0.1	0.1

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	1	0	2	5	1	240	7	3	251	14	1	16	1	32	1	156	0	0	157	445
07:45 AM	3	0	2	5	10	0	226	11	0	237	22	1	22	6	51	2	154	1	1	158	456
08:00 AM	5	0	0	2	7	0	191	13	0	204	23	0	22	0	45	1	155	2	2	160	416
08:15 AM	1	0	0	6	7	0	227	4	0	231	26	0	13	0	39	5	147	1	1	154	431
Total Volume	11	1	2	15	29	1	884	35	3	923	85	2	73	7	167	9	612	4	4	629	1748
% App. Total	37.9	3.4	6.9	51.7		0.1	95.8	3.8	0.3		50.9	1.2	43.7	4.2		1.4	97.3	0.6	0.6		
PHF	.550	.250	.250	.625	.725	.250	.921	.673	.250	.919	.817	.500	.830	.292	.819	.450	.981	.500	.500	.983	.958



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovatedatallc.com or 1.413.668.5094

N / S: Ormond Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 9. AM Peak - Sumner @ Ormond
 Site Code : 9
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
07:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
Total	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	10	0	0	10	18
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	7
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	3	0	0	4	6
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	1	18	1	0	20	28
Grand Total	0	0	0	0	0	0	15	1	0	16	0	0	0	0	0	1	28	1	0	30	46
Apprch %	0	0	0	0	0	0	93.8	6.2	0		0	0	0	0	0	3.3	93.3	3.3	0		
Total %	0	0	0	0	0	0	32.6	2.2	0	34.8	0	0	0	0	0	2.2	60.9	2.2	0	65.2	

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	7
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	3	0	0	4	6
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
Total Volume	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	1	18	1	0	20	28
% App. Total	0	0	0	0	0	0	100	0	0		0	0	0	0	0	5	90	5	0		
PHF	.000	.000	.000	.000	.000	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.250	.750	.250	.000	.833	.875



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Daytona Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 10. AM Peak - Sumner @ Daytona
 Site Code : 10
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	180	2	0	182	1	0	1	2	4	2	134	0	0	136	322
07:15 AM	0	0	0	0	0	0	238	4	0	242	5	0	5	3	13	4	126	0	0	130	385
07:30 AM	0	0	0	0	0	1	248	2	0	251	11	0	9	1	21	0	159	0	0	159	431
07:45 AM	0	0	0	0	0	0	239	2	0	241	7	0	5	1	13	1	175	0	0	176	430
Total	0	0	0	0	0	1	905	10	0	916	24	0	20	7	51	7	594	0	0	601	1568
08:00 AM	0	0	0	0	0	0	197	3	0	200	7	0	7	0	14	5	159	2	0	166	380
08:15 AM	0	0	0	0	0	0	233	2	0	235	9	0	7	0	16	5	161	0	0	166	417
08:30 AM	0	0	0	0	0	0	210	2	0	212	7	0	11	1	19	0	130	0	0	130	361
08:45 AM	0	0	0	0	0	0	201	4	0	205	8	0	4	3	15	3	154	0	0	157	377
Total	0	0	0	0	0	0	841	11	0	852	31	0	29	4	64	13	604	2	0	619	1535
Grand Total	0	0	0	0	0	1	1746	21	0	1768	55	0	49	11	115	20	1198	2	0	1220	3103
Apprch %	0	0	0	0		0.1	98.8	1.2	0		47.8	0	42.6	9.6		1.6	98.2	0.2	0		
Total %	0	0	0	0	0	0	56.3	0.7	0	57	1.8	0	1.6	0.4	3.7	0.6	38.6	0.1	0	39.3	
PCs and Peds						1727					1167										
% PCs and Peds	0	0	0	0	0	100	98.9	81	0	98.7	100	0	100	100	100	100	97.4	100	0	97.5	98.3
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	1	19	0	1.2	0	0	0	0	0	0	2.6	0	0	2.5	1.7
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	1	248	2	0	251	11	0	9	1	21	0	159	0	0	159	431
07:45 AM	0	0	0	0	0	0	239	2	0	241	7	0	5	1	13	1	175	0	0	176	430
08:00 AM	0	0	0	0	0	0	197	3	0	200	7	0	7	0	14	5	159	2	0	166	380
08:15 AM	0	0	0	0	0	0	233	2	0	235	9	0	7	0	16	5	161	0	0	166	417
Total Volume	0	0	0	0	0	1	917	9	0	927	34	0	28	2	64	11	654	2	0	667	1658
% App. Total	0	0	0	0	0	0.1	98.9	1	0		53.1	0	43.8	3.1		1.6	98.1	0.3	0		
PHF	.000	.000	.000	.000	.000	.250	.924	.750	.000	.923	.773	.000	.778	.500	.762	.550	.934	.250	.000	.947	.962



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovatedatallc.com or 1.413.668.5094

N / S: Daytona Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 10. AM Peak - Sumner @ Daytona
 Site Code : 10
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
07:15 AM	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	2	0	0	2	6
07:30 AM	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	1	0	0	1	4
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8
Total	0	0	0	0	0	0	8	4	0	12	0	0	0	0	0	0	12	0	0	12	24
08:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	9
Total	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	19	0	0	19	29
Grand Total	0	0	0	0	0	0	18	4	0	22	0	0	0	0	0	0	31	0	0	31	53
Apprch %	0	0	0	0	0	0	81.8	18.2	0	41.5	0	0	0	0	0	0	100	0	0	58.5	
Total %	0	0	0	0	0	0	34	7.5	0	41.5	0	0	0	0	0	0	58.5	0	0	58.5	

Start Time	From North					Sumner From East					Daytona From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

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

08:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	9
Total Volume	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	19	0	0	19	29
% App. Total	0	0	0	0	0	0	100	0	0	41.5	0	0	0	0	0	0	100	0	0	58.5	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.679	.000	.000	.679	.806



Innovative Data, LLC

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Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: White Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 11. AM Peak - Sumner @ White
 Site Code : 11
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	White From North					Sumner From East					White From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	8	13	10	0	31	12	191	6	1	210	4	25	6	1	36	1	110	20	1	132	409
07:15 AM	16	20	14	0	50	11	235	0	0	246	3	26	5	0	34	0	173	27	0	200	530
07:30 AM	12	16	13	1	42	26	225	3	1	255	5	19	11	0	35	1	139	45	0	185	517
07:45 AM	12	15	9	3	39	46	194	4	3	247	6	19	13	0	38	0	195	45	0	240	564
Total	48	64	46	4	162	95	845	13	5	958	18	89	35	1	143	2	617	137	1	757	2020
08:00 AM	15	21	14	0	50	26	191	9	1	227	4	18	6	1	29	2	161	17	0	180	486
08:15 AM	11	14	11	1	37	24	249	4	0	277	3	16	8	0	27	1	196	39	3	239	580
08:30 AM	11	16	11	0	38	28	239	5	0	272	5	6	3	0	14	0	171	40	0	211	535
08:45 AM	14	17	12	2	45	19	200	13	0	232	0	5	2	0	7	0	162	40	0	202	486
Total	51	68	48	3	170	97	879	31	1	1008	12	45	19	1	77	3	690	136	3	832	2087
Grand Total	99	132	94	7	332	192	1724	44	6	1966	30	134	54	2	220	5	1307	273	4	1589	4107
Apprch %	29.8	39.8	28.3	2.1		9.8	87.7	2.2	0.3		13.6	60.9	24.5	0.9		0.3	82.3	17.2	0.3		
Total %	2.4	3.2	2.3	0.2	8.1	4.7	42	1.1	0.1	47.9	0.7	3.3	1.3	0	5.4	0.1	31.8	6.6	0.1	38.7	
PCs and Peds						1708										1284					
% PCs and Peds	96	96.2	96.8	100	96.4	98.4	99.1	95.5	100	98.9	86.7	97.8	100	100	96.8	100	98.2	98.9	100	98.4	98.4
Heavy Vehicles																					
% Heavy Vehicles	4	3.8	3.2	0	3.6	1.6	0.9	4.5	0	1.1	13.3	2.2	0	0	3.2	0	1.8	1.1	0	1.6	1.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	White From North					Sumner From East					White From South					Sumner From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	12	15	9	3	39	46	194	4	3	247	6	19	13	0	38	0	195	45	0	240	564
08:00 AM	15	21	14	0	50	26	191	9	1	227	4	18	6	1	29	2	161	17	0	180	486
08:15 AM	11	14	11	1	37	24	249	4	0	277	3	16	8	0	27	1	196	39	3	239	580
08:30 AM	11	16	11	0	38	28	239	5	0	272	5	6	3	0	14	0	171	40	0	211	535
Total Volume	49	66	45	4	164	124	873	22	4	1023	18	59	30	1	108	3	723	141	3	870	2165
% App. Total	29.9	40.2	27.4	2.4		12.1	85.3	2.2	0.4		16.7	54.6	27.8	0.9		0.3	83.1	16.2	0.3		
PHF	.817	.786	.804	.333	.820	.674	.877	.611	.333	.923	.750	.776	.577	.250	.711	.375	.922	.783	.250	.906	.933



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: White Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 11. AM Peak - Sumner @ White
 Site Code : 11
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	White From North					Sumner From East					White From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	1	0	0	1	0	4	2	0	6	2	0	0	0	2	0	1	1	0	2	11
07:15 AM	1	0	1	0	2	2	2	0	0	4	0	0	0	0	0	0	3	1	0	4	10
07:30 AM	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	5
07:45 AM	1	0	0	0	1	0	3	0	0	3	0	2	0	0	2	0	2	1	0	3	9
Total	2	2	2	0	6	2	10	2	0	14	2	2	0	0	4	0	8	3	0	11	35
08:00 AM	1	2	1	0	4	0	4	0	0	4	1	0	0	0	1	0	2	0	0	2	11
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	0	3	4
08:30 AM	0	1	0	0	1	1	1	0	0	2	1	0	0	0	1	0	2	0	0	2	6
08:45 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	8	0	0	8	10
Total	2	3	1	0	6	1	6	0	0	7	2	1	0	0	3	0	15	0	0	15	31
Grand Total	4	5	3	0	12	3	16	2	0	21	4	3	0	0	7	0	23	3	0	26	66
Apprch %	33.3	41.7	25	0		14.3	76.2	9.5	0		57.1	42.9	0	0		0	88.5	11.5	0		
Total %	6.1	7.6	4.5	0	18.2	4.5	24.2	3	0	31.8	6.1	4.5	0	0	10.6	0	34.8	4.5	0	39.4	

Start Time	White From North					Sumner From East					White From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	1	0	0	1	0	4	2	0	6	2	0	0	0	2	0	1	1	0	2	11
07:15 AM	1	0	1	0	2	2	2	0	0	4	0	0	0	0	0	0	3	1	0	4	10
07:30 AM	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	5
07:45 AM	1	0	0	0	1	0	3	0	0	3	0	2	0	0	2	0	2	1	0	3	9
Total Volume	2	2	2	0	6	2	10	2	0	14	2	2	0	0	4	0	8	3	0	11	35
% App. Total	33.3	33.3	33.3	0		14.3	71.4	14.3	0		50	50	0	0		0	72.7	27.3	0		
PHF	.500	.500	.500	.000	.750	.250	.625	.250	.000	.583	.250	.250	.000	.000	.500	.000	.667	.750	.000	.688	.795



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PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Dickinson Street
 E / W: Burlington & Grenada
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 12. AM Peak - Dickinson @ Burlington & Grenada
 Site Code : 12
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	2	31	7	0	40	4	2	2	1	9	0	43	1	4	48	1	4	4	0	9	106
07:15 AM	6	22	5	7	40	15	2	2	5	24	4	63	4	3	74	2	8	1	1	12	150
07:30 AM	3	42	7	3	55	17	4	3	6	30	3	78	2	2	85	1	2	1	1	5	175
07:45 AM	4	43	10	1	58	24	4	2	2	32	2	71	3	0	76	1	8	1	0	10	176
Total	15	138	29	11	193	60	12	9	14	95	9	255	10	9	283	5	22	7	2	36	607
08:00 AM	1	50	4	1	56	13	2	6	1	22	2	95	5	0	102	1	6	2	2	11	191
08:15 AM	1	43	10	1	55	15	5	1	4	25	4	90	3	2	99	0	2	0	1	3	182
08:30 AM	5	55	7	1	68	13	10	7	4	34	5	96	6	6	113	2	8	1	3	14	229
08:45 AM	1	44	10	1	56	14	4	5	4	27	5	69	6	0	80	3	3	1	1	8	171
Total	8	192	31	4	235	55	21	19	13	108	16	350	20	8	394	6	19	4	7	36	773
Grand Total	23	330	60	15	428	115	33	28	27	203	25	605	30	17	677	11	41	11	9	72	1380
Apprch %	5.4	77.1	14	3.5		56.7	16.3	13.8	13.3		3.7	89.4	4.4	2.5		15.3	56.9	15.3	12.5		
Total %	1.7	23.9	4.3	1.1	31	8.3	2.4	2	2	14.7	1.8	43.8	2.2	1.2	49.1	0.8	3	0.8	0.7	5.2	
PCs and Peds	95.7	95.2	95	100	95.3	97.4	100	96.4	92.6	97	100	97	90	88.2	96.6	100	100	100	100	100	96.4
Heavy Vehicles																					
% Heavy Vehicles	4.3	4.8	3.3	0	4.4	1.7	0	3.6	7.4	2.5	0	2.8	10	0	3	0	0	0	0	0	3.2
Bicycles	0	0	1	0	1	1	0	0	0	1	0	1	0	2	3	0	0	0	0	0	5
% Bicycles	0	0	1.7	0	0.2	0.9	0	0	0	0.5	0	0.2	0	11.8	0.4	0	0	0	0	0	0.4

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	4	43	10	1	58	24	4	2	2	32	2	71	3	0	76	1	8	1	0	10	176
08:00 AM	1	50	4	1	56	13	2	6	1	22	2	95	5	0	102	1	6	2	2	11	191
08:15 AM	1	43	10	1	55	15	5	1	4	25	4	90	3	2	99	0	2	0	1	3	182
08:30 AM	5	55	7	1	68	13	10	7	4	34	5	96	6	6	113	2	8	1	3	14	229
Total Volume	11	191	31	4	237	65	21	16	11	113	13	352	17	8	390	4	24	4	6	38	778
% App. Total	4.6	80.6	13.1	1.7		57.5	18.6	14.2	9.7		3.3	90.3	4.4	2.1		10.5	63.2	10.5	15.8		
PHF	.550	.868	.775	1.00	.871	.677	.525	.571	.688	.831	.650	.917	.708	.333	.863	.500	.750	.500	.500	.679	.849



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PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson Street
 E / W: Burlington & Grenada
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 12. AM Peak - Dickinson @ Burlington & Grenada
 Site Code : 12
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West					Int. Total					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total						
07:00 AM	0	3	1	0	4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5
07:15 AM	1	3	1	0	5	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	9
07:30 AM	0	2	0	0	2	0	0	0	2	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	8	2	0	11	1	0	1	2	4	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	20
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	8
08:15 AM	0	4	0	0	4	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	10
08:30 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	8	0	0	8	1	0	0	0	1	0	13	2	0	15	0	0	0	0	0	0	0	0	0	0	24
Grand Total	1	16	2	0	19	2	0	1	2	5	0	17	3	0	20	0	0	0	0	0	0	0	0	0	0	44
Apprch %	5.3	84.2	10.5	0		40	0	20	40		0	85	15	0		0	0	0	0		0	0	0	0		
Total %	2.3	36.4	4.5	0	43.2	4.5	0	2.3	4.5	11.4	0	38.6	6.8	0	45.5	0	0	0	0		0	0	0	0		

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West										
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total						
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	0	2	0	0	2	0	0	0	2	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	8
08:15 AM	0	4	0	0	4	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	10
Total Volume	0	8	0	0	8	1	0	1	2	4	0	10	2	0	12	0	0	0	0	0	0	0	0	0	0	24
% App. Total	0	100	0	0		25	0	25	50		0	83.3	16.7	0		0	0	0	0		0	0	0	0		
PHF	.000	.500	.000	.000	.500	.250	.000	.250	.250	.500	.000	.500	.250	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.600	



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PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson Street
E / W: Cliftwood & Trenton

File Name : 13. AM Peak - Dickinson @ Cliftwood & Trenton

Site Code : 13

City, State: Springfield, Massachusetts

Start Date : 5/7/2015

Client: Tighe & Bond

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	3	23	1	1	28	6	0	3	3	12	4	65	59	1	129	13	0	1	7	21	190
07:15 AM	3	27	0	2	32	5	0	1	2	8	6	74	60	13	153	22	0	0	11	33	226
07:30 AM	2	44	0	7	53	0	0	0	4	4	3	86	97	6	192	26	0	0	13	39	288
07:45 AM	1	52	0	1	54	0	0	0	0	0	5	89	72	3	169	28	0	2	12	42	265
Total	9	146	1	11	167	11	0	4	9	24	18	314	288	23	643	89	0	3	43	135	969
08:00 AM	1	47	0	2	50	0	0	0	1	1	4	87	80	4	175	32	0	0	7	39	265
08:15 AM	3	60	0	1	64	0	0	0	0	0	8	92	58	3	161	19	0	1	2	22	247
08:30 AM	5	56	0	3	64	0	0	0	1	1	7	89	90	3	189	23	0	2	5	30	284
08:45 AM	3	58	0	3	64	0	0	0	1	1	6	70	48	4	128	22	0	2	6	30	223
Total	12	221	0	9	242	0	0	0	3	3	25	338	276	14	653	96	0	5	20	121	1019
Grand Total	21	367	1	20	409	11	0	4	12	27	43	652	564	37	1296	185	0	8	63	256	1988
Apprch %	5.1	89.7	0.2	4.9		40.7	0	14.8	44.4		3.3	50.3	43.5	2.9		72.3	0	3.1	24.6		
Total %	1.1	18.5	0.1	1	20.6	0.6	0	0.2	0.6	1.4	2.2	32.8	28.4	1.9	65.2	9.3	0	0.4	3.2	12.9	
PCs and Peds	100	93.7	100	100	94.4	100	0	100	100	100	100	96.2	98.8	83.8	97.1	96.2	0	87.5	100	96.9	96.5
Heavy Vehicles																					
% Heavy Vehicles	0	6.3	0	0	5.6	0	0	0	0	0	0	3.5	1.2	0	2.3	3.8	0	12.5	0	3.1	3.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	2	0	6	8	0	0	0	0	0	8
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0.3	0	16.2	0.6	0	0	0	0	0	0.4

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:30 AM

07:30 AM	2	44	0	7	53	0	0	0	4	4	3	86	97	6	192	26	0	0	13	39	288
07:45 AM	1	52	0	1	54	0	0	0	0	0	5	89	72	3	169	28	0	2	12	42	265
08:00 AM	1	47	0	2	50	0	0	0	1	1	4	87	80	4	175	32	0	0	7	39	265
08:15 AM	3	60	0	1	64	0	0	0	0	0	8	92	58	3	161	19	0	1	2	22	247
Total Volume	7	203	0	11	221	0	0	0	5	5	20	354	307	16	697	105	0	3	34	142	1065
% App. Total	3.2	91.9	0	5		0	0	0	100		2.9	50.8	44	2.3		73.9	0	2.1	23.9		
PHF	.583	.846	.000	.393	.863	.000	.000	.000	.313	.313	.625	.962	.791	.667	.908	.820	.000	.375	.654	.845	.924



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PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson Street
E / W: Cliftwood & Trenton

City, State: Springfield, Massachusetts
Client: Tighe & Bond

File Name : 13. AM Peak - Dickinson @ Cliftwood & Trenton

Site Code : 13

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	1	3	0	4	0	0	0	0	0	6
07:15 AM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	6
07:30 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	9
Total	0	9	0	0	9	0	0	0	0	0	0	11	3	0	14	2	0	0	0	2	25
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	4	1	0	5	2	0	0	0	2	10
08:15 AM	0	7	0	0	7	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	13
08:30 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	3	0	0	0	3	7
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	6
Total	0	14	0	0	14	0	0	0	0	0	0	12	4	0	16	5	0	1	0	6	36
Grand Total	0	23	0	0	23	0	0	0	0	0	0	23	7	0	30	7	0	1	0	8	61
Apprch %	0	100	0	0		0	0	0	0		0	76.7	23.3	0		87.5	0	12.5	0		
Total %	0	37.7	0	0	37.7	0	0	0	0	0	0	37.7	11.5	0	49.2	11.5	0	1.6	0	13.1	

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

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

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	9
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	4	1	0	5	2	0	0	0	2	10
08:15 AM	0	7	0	0	7	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	13
08:30 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	3	0	0	0	3	7
Total Volume	0	15	0	0	15	0	0	0	0	0	0	15	2	0	17	6	0	1	0	7	39
% App. Total	0	100	0	0		0	0	0	0		0	88.2	11.8	0		85.7	0	14.3	0		
PHF	.000	.536	.000	.000	.536	.000	.000	.000	.000	.000	.000	.750	.500	.000	.850	.500	.000	.250	.000	.583	.750



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Dickinson Street
 E / W: Trafton & Holywood
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 14. AM Peak - Dickinson @ Trafton & Holywood
 Site Code : 14
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	3	41	0	0	44	4	2	3	3	12	0	108	2	0	110	1	0	7	5	13	179
07:15 AM	1	49	0	4	54	4	2	3	7	16	0	122	1	2	125	1	0	11	5	17	212
07:30 AM	4	54	0	2	60	11	1	5	5	22	0	148	1	0	149	0	0	12	6	18	249
07:45 AM	8	65	0	1	74	11	1	2	0	14	0	138	0	0	138	1	0	14	9	24	250
Total	16	209	0	7	232	30	6	13	15	64	0	516	4	2	522	3	0	44	25	72	890
08:00 AM	2	71	0	0	73	8	2	8	1	19	0	137	0	0	137	0	0	13	6	19	248
08:15 AM	7	67	0	0	74	5	3	9	1	18	0	161	0	3	164	0	0	7	2	9	265
08:30 AM	9	69	0	0	78	7	2	8	3	20	0	168	0	0	168	1	0	17	4	22	288
08:45 AM	7	62	0	0	69	10	4	1	1	16	0	106	0	2	108	1	0	10	2	13	206
Total	25	269	0	0	294	30	11	26	6	73	0	572	0	5	577	2	0	47	14	63	1007
Grand Total	41	478	0	7	526	60	17	39	21	137	0	1088	4	7	1099	5	0	91	39	135	1897
Apprch %	7.8	90.9	0	1.3		43.8	12.4	28.5	15.3		0	99	0.4	0.6		3.7	0	67.4	28.9		
Total %	2.2	25.2	0	0.4	27.7	3.2	0.9	2.1	1.1	7.2	0	57.4	0.2	0.4	57.9	0.3	0	4.8	2.1	7.1	
PCs and Peds												1067									
% PCs and Peds	100	96.2	0	100	96.6	98.3	100	92.3	100	97.1	0	98.1	100	100	98.1	100	0	98.9	100	99.3	97.7
Heavy Vehicles																					
% Heavy Vehicles	0	3.8	0	0	3.4	1.7	0	7.7	0	2.9	0	1.9	0	0	1.9	0	0	1.1	0	0.7	2.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	8	65	0	1	74	11	1	2	0	14	0	138	0	0	138	1	0	14	9	24	250
08:00 AM	2	71	0	0	73	8	2	8	1	19	0	137	0	0	137	0	0	13	6	19	248
08:15 AM	7	67	0	0	74	5	3	9	1	18	0	161	0	3	164	0	0	7	2	9	265
08:30 AM	9	69	0	0	78	7	2	8	3	20	0	168	0	0	168	1	0	17	4	22	288
Total Volume	26	272	0	1	299	31	8	27	5	71	0	604	0	3	607	2	0	51	21	74	1051
% App. Total	8.7	91	0	0.3		43.7	11.3	38	7		0	99.5	0	0.5		2.7	0	68.9	28.4		
PHF	.722	.958	.000	.250	.958	.705	.667	.750	.417	.888	.000	.899	.000	.250	.903	.500	.000	.750	.583	.771	.912



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovatedatallc.com or 1.413.668.5094

N / S: Dickinson Street

E / W: Trafton & Holywood

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 14. AM Peak - Dickinson @ Trafton & Holywood

Site Code : 14

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total						
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
07:30 AM	0	4	0	0	4	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	7
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
Total	0	6	0	0	6	0	0	2	0	2	0	8	0	0	8	0	0	1	0	1	0	0	0	0	0	17
08:00 AM	0	3	0	0	3	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
08:30 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total	0	12	0	0	12	1	0	1	0	2	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	27
Grand Total	0	18	0	0	18	1	0	3	0	4	0	21	0	0	21	0	0	1	0	1	0	0	0	0	0	44
Apprch %	0	100	0	0		25	0	75	0		0	100	0	0		0	0	100	0		0	0	0	0		
Total %	0	40.9	0	0	40.9	2.3	0	6.8	0	9.1	0	47.7	0	0	47.7	0	0	2.3	0	2.3	0	0	0	0	0	

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West										
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total						
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	0	4	0	0	4	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	7
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
08:00 AM	0	3	0	0	3	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
Total Volume	0	13	0	0	13	1	0	3	0	4	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	30
% App. Total	0	100	0	0		25	0	75	0		0	100	0	0		0	0	0	0	0	0	0	0	0	0	
PHF	.000	.813	.000	.000	.813	.250	.000	.375	.000	.500	.000	.650	.000	.000	.650	.000	.000	.000	.000	.000	.000	.000	.000	.000	.833	



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PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 15. AM Peak - Belmont @ Oakland
 Site Code : 15
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	8	36	2	2	48	5	59	10	0	74	2	24	1	0	27	9	34	13	9	65	214
07:15 AM	3	57	2	2	64	11	68	21	5	105	5	31	3	4	43	7	41	8	22	78	290
07:30 AM	9	59	8	7	83	11	66	31	1	109	11	32	4	0	47	18	38	6	27	89	328
07:45 AM	7	62	6	13	88	9	95	24	0	128	13	35	2	2	52	15	37	13	50	115	383
Total	27	214	18	24	283	36	288	86	6	416	31	122	10	6	169	49	150	40	108	347	1215
08:00 AM	4	53	7	19	83	8	71	14	1	94	7	24	6	1	38	9	42	6	22	79	294
08:15 AM	11	36	7	5	59	11	72	16	0	99	3	33	0	0	36	5	71	14	11	101	295
08:30 AM	14	52	12	1	79	14	84	15	3	116	5	14	3	3	25	2	45	16	7	70	290
08:45 AM	5	28	7	6	46	10	92	16	7	125	6	26	2	2	36	4	60	14	2	80	287
Total	34	169	33	31	267	43	319	61	11	434	21	97	11	6	135	20	218	50	42	330	1166
Grand Total	61	383	51	55	550	79	607	147	17	850	52	219	21	12	304	69	368	90	150	677	2381
Apprch %	11.1	69.6	9.3	10		9.3	71.4	17.3	2		17.1	72	6.9	3.9		10.2	54.4	13.3	22.2		
Total %	2.6	16.1	2.1	2.3	23.1	3.3	25.5	6.2	0.7	35.7	2.2	9.2	0.9	0.5	12.8	2.9	15.5	3.8	6.3	28.4	
PCs and Peds	91.8	92.7	96.1	100	93.6	93.7	95.9	98.6	100	96.2	98.1	92.2	81	100	92.8	97.1	92.9	96.7	100	95.4	95
% PCs and Peds																					
Heavy Vehicles	8.2	5.7	2	0	5.1	6.3	3.6	1.4	0	3.4	1.9	7.3	19	0	6.9	2.9	7.1	3.3	0	4.6	4.6
% Heavy Vehicles																					
Bicycles	0	6	1	0	7	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	11
% Bicycles	0	1.6	2	0	1.3	0	0.5	0	0	0.4	0	0.5	0	0	0.3	0	0	0	0	0	0.5

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	9	59	8	7	83	11	66	31	1	109	11	32	4	0	47	18	38	6	27	89	328
07:45 AM	7	62	6	13	88	9	95	24	0	128	13	35	2	2	52	15	37	13	50	115	383
08:00 AM	4	53	7	19	83	8	71	14	1	94	7	24	6	1	38	9	42	6	22	79	294
08:15 AM	11	36	7	5	59	11	72	16	0	99	3	33	0	0	36	5	71	14	11	101	295
Total Volume	31	210	28	44	313	39	304	85	2	430	34	124	12	3	173	47	188	39	110	384	1300
% App. Total	9.9	67.1	8.9	14.1		9.1	70.7	19.8	0.5		19.7	71.7	6.9	1.7		12.2	49	10.2	28.6		
PHF	.705	.847	.875	.579	.889	.886	.800	.685	.500	.840	.654	.886	.500	.375	.832	.653	.662	.696	.550	.835	.849



Innovative Data, LLC

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Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 15. AM Peak - Belmont @ Oakland
 Site Code : 15
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	3	0	0	3	1	4	0	0	5	0	5	0	0	5	1	2	0	0	3	16
07:15 AM	0	4	0	0	4	1	0	2	0	3	0	1	1	0	2	0	2	0	0	2	11
07:30 AM	0	5	0	0	5	0	1	0	0	1	0	4	2	0	6	0	3	1	0	4	16
07:45 AM	1	1	0	0	2	0	2	0	0	2	1	0	0	0	1	0	2	1	0	3	8
Total	1	13	0	0	14	2	7	2	0	11	1	10	3	0	14	1	9	2	0	12	51
08:00 AM	1	3	0	0	4	0	5	0	0	5	0	2	1	0	3	1	7	0	0	8	20
08:15 AM	2	3	0	0	5	0	3	0	0	3	0	2	0	0	2	0	5	0	0	5	15
08:30 AM	0	2	1	0	3	2	5	0	0	7	0	0	0	0	0	0	1	0	0	1	11
08:45 AM	1	1	0	0	2	1	2	0	0	3	0	2	0	0	2	0	4	1	0	5	12
Total	4	9	1	0	14	3	15	0	0	18	0	6	1	0	7	1	17	1	0	19	58
Grand Total	5	22	1	0	28	5	22	2	0	29	1	16	4	0	21	2	26	3	0	31	109
Apprch %	17.9	78.6	3.6	0		17.2	75.9	6.9	0		4.8	76.2	19	0		6.5	83.9	9.7	0		
Total %	4.6	20.2	0.9	0	25.7	4.6	20.2	1.8	0	26.6	0.9	14.7	3.7	0	19.3	1.8	23.9	2.8	0	28.4	

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	5	0	0	5	0	1	0	0	1	0	4	2	0	6	0	3	1	0	4	16
07:45 AM	1	1	0	0	2	0	2	0	0	2	1	0	0	0	1	0	2	1	0	3	8
08:00 AM	1	3	0	0	4	0	5	0	0	5	0	2	1	0	3	1	7	0	0	8	20
08:15 AM	2	3	0	0	5	0	3	0	0	3	0	2	0	0	2	0	5	0	0	5	15
Total Volume	4	12	0	0	16	0	11	0	0	11	1	8	3	0	12	1	17	2	0	20	59
% App. Total	25	75	0	0		0	100	0	0		8.3	66.7	25	0		5	85	10	0		
PHF	.500	.600	.000	.000	.800	.000	.550	.000	.000	.550	.250	.500	.375	.000	.500	.250	.607	.500	.000	.625	.738



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Belchertown, Massachusetts

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N / S: Beaumont Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 16. AM Peak - Belmont @ Beaumont
 Site Code : 16
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	3	1	0	3	7	1	67	1	0	69	1	1	0	0	2	0	29	3	0	32	110
07:15 AM	1	0	1	2	4	1	90	0	3	94	2	1	0	3	6	0	40	5	0	45	149
07:30 AM	2	2	0	1	5	1	97	2	0	100	1	1	1	10	13	0	52	3	0	55	173
07:45 AM	2	4	2	6	14	2	129	0	1	132	0	0	4	6	10	1	54	4	3	62	218
Total	8	7	3	12	30	5	383	3	4	395	4	3	5	19	31	1	175	15	3	194	650
08:00 AM	2	1	1	3	7	2	81	1	0	84	1	2	2	0	5	0	41	4	0	45	141
08:15 AM	5	4	0	0	9	0	88	1	3	92	2	3	1	2	8	1	68	6	1	76	185
08:30 AM	10	4	0	4	18	2	97	0	0	99	2	0	1	6	9	0	54	2	1	57	183
08:45 AM	6	0	0	2	8	2	98	2	0	102	2	3	3	0	8	0	58	2	0	60	178
Total	23	9	1	9	42	6	364	4	3	377	7	8	7	8	30	1	221	14	2	238	687
Grand Total	31	16	4	21	72	11	747	7	7	772	11	11	12	27	61	2	396	29	5	432	1337
Apprch %	43.1	22.2	5.6	29.2		1.4	96.8	0.9	0.9		18	18	19.7	44.3		0.5	91.7	6.7	1.2		
Total %	2.3	1.2	0.3	1.6	5.4	0.8	55.9	0.5	0.5	57.7	0.8	0.8	0.9	2	4.6	0.1	29.6	2.2	0.4	32.3	
PCs and Peds																					
% PCs and Peds	90.3	100	100	100	95.8	100	97.9	100	100	97.9	100	100	100	100	100	100	96.5	100	100	96.8	97.5
Heavy Vehicles																					
% Heavy Vehicles	9.7	0	0	0	4.2	0	2	0	0	1.9	0	0	0	0	0	0	3.3	0	0	3	2.3
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Bicycles	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.3	0	0	0.2	0.1

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	2	4	2	6	14	2	129	0	1	132	0	0	4	6	10	1	54	4	3	62	218
08:00 AM	2	1	1	3	7	2	81	1	0	84	1	2	2	0	5	0	41	4	0	45	141
08:15 AM	5	4	0	0	9	0	88	1	3	92	2	3	1	2	8	1	68	6	1	76	185
08:30 AM	10	4	0	4	18	2	97	0	0	99	2	0	1	6	9	0	54	2	1	57	183
Total Volume	19	13	3	13	48	6	395	2	4	407	5	5	8	14	32	2	217	16	5	240	727
% App. Total	39.6	27.1	6.2	27.1		1.5	97.1	0.5	1		15.6	15.6	25	43.8		0.8	90.4	6.7	2.1		
PHF	.475	.813	.375	.542	.667	.750	.766	.500	.333	.771	.625	.417	.500	.583	.800	.500	.798	.667	.417	.789	.834



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Beaumont Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 16. AM Peak - Belmont @ Beaumont
 Site Code : 16
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	6	0	0	6	13
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
08:15 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5
08:30 AM	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	3	0	0	0	3	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	18
Grand Total	3	0	0	0	3	0	15	0	0	15	0	0	0	0	0	0	13	0	0	13	31
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	9.7	0	0	0	9.7	0	48.4	0	0	48.4	0	0	0	0	0	0	41.9	0	0	41.9	

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
08:15 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5
08:30 AM	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total Volume	3	0	0	0	3	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	19
% App. Total	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.375	.000	.000	.000	.375	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.000	.667	.000	.000	.667	.792



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Belchertown, Massachusetts

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N / S: Commonwealth Avenue
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 17. AM Peak - Belmont @ Commonwealth
 Site Code : 17
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	1	1	0	89	10	1	100	13	0	0	1	14	8	58	0	2	68	183
07:15 AM	0	0	0	0	0	0	91	23	2	116	17	0	4	3	24	8	86	0	4	98	238
07:30 AM	0	0	0	0	0	0	107	24	2	133	14	0	0	9	23	9	88	0	1	98	254
07:45 AM	0	0	0	0	0	0	90	18	4	112	20	0	1	5	26	9	96	0	0	105	243
Total	0	0	0	1	1	0	377	75	9	461	64	0	5	18	87	34	328	0	7	369	918
08:00 AM	0	0	0	0	0	0	78	23	1	102	22	0	0	5	27	13	88	0	2	103	232
08:15 AM	0	0	0	0	0	1	96	26	1	124	26	0	0	4	30	13	70	0	1	84	238
08:30 AM	0	0	0	1	1	0	78	32	0	110	33	0	3	1	37	13	83	0	7	103	251
08:45 AM	0	0	0	1	1	0	84	23	0	107	17	0	1	0	18	14	86	0	4	104	230
Total	0	0	0	2	2	1	336	104	2	443	98	0	4	10	112	53	327	0	14	394	951
Grand Total	0	0	0	3	3	1	713	179	11	904	162	0	9	28	199	87	655	0	21	763	1869
Apprch %	0	0	0	100		0.1	78.9	19.8	1.2		81.4	0	4.5	14.1		11.4	85.8	0	2.8		
Total %	0	0	0	0.2	0.2	0.1	38.1	9.6	0.6	48.4	8.7	0	0.5	1.5	10.6	4.7	35	0	1.1	40.8	
PCs and Peds																					
% PCs and Peds	0	0	0	100	100	100	94	95	100	94.2	98.1	0	100	100	98.5	98.9	94.4	0	100	95	95
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	6	5	0	5.8	1.9	0	0	0	1.5	1.1	5.6	0	0	5	5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	91	23	2	116	17	0	4	3	24	8	86	0	4	98	238
07:30 AM	0	0	0	0	0	0	107	24	2	133	14	0	0	9	23	9	88	0	1	98	254
07:45 AM	0	0	0	0	0	0	90	18	4	112	20	0	1	5	26	9	96	0	0	105	243
08:00 AM	0	0	0	0	0	0	78	23	1	102	22	0	0	5	27	13	88	0	2	103	232
Total Volume	0	0	0	0	0	0	366	88	9	463	73	0	5	22	100	39	358	0	7	404	967
% App. Total	0	0	0	0	0	0	79	19	1.9		73	0	5	22		9.7	88.6	0	1.7		
PHF	.000	.000	.000	.000	.000	.000	.855	.917	.563	.870	.830	.000	.313	.611	.926	.750	.932	.000	.438	.962	.952



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Belchertown, Massachusetts

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N / S: Commonwealth Avenue
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 17. AM Peak - Belmont @ Commonwealth
 Site Code : 17
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	1	3	0	0	4	11
07:15 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	8	0	0	8	12
07:30 AM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	0	0	3	8
07:45 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	12
Total	0	0	0	0	0	0	20	3	0	23	1	0	0	0	1	1	18	0	0	19	43
08:00 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	6	0	0	6	10
08:15 AM	0	0	0	0	0	0	8	2	0	10	1	0	0	0	1	0	6	0	0	6	17
08:30 AM	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	3	0	0	3	11
08:45 AM	0	0	0	0	0	0	5	2	0	7	1	0	0	0	1	0	4	0	0	4	12
Total	0	0	0	0	0	0	23	6	0	29	2	0	0	0	2	0	19	0	0	19	50
Grand Total	0	0	0	0	0	0	43	9	0	52	3	0	0	0	3	1	37	0	0	38	93
Apprch %	0	0	0	0	0	0	82.7	17.3	0	52	100	0	0	0	3	2.6	97.4	0	0	38	93
Total %	0	0	0	0	0	0	46.2	9.7	0	55.9	3.2	0	0	0	3.2	1.1	39.8	0	0	40.9	93

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	12
08:00 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	6	0	0	6	10
08:15 AM	0	0	0	0	0	0	8	2	0	10	1	0	0	0	1	0	6	0	0	6	17
08:30 AM	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	3	0	0	3	11
Total Volume	0	0	0	0	0	0	26	4	0	30	1	0	0	0	1	0	19	0	0	19	50
% App. Total	0	0	0	0	0	0	86.7	13.3	0	30	100	0	0	0	1	0	100	0	0	19	50
PHF	.000	.000	.000	.000	.000	.000	.813	.500	.000	.750	.250	.000	.000	.000	.250	.000	.792	.000	.000	.792	.735



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PO Box 468

Belchertown, Massachusetts

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N / S: Ormond Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 18. AM Peak - Belmont @ Ormond
 Site Code : 18
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	8	0	1	4	13	10	81	0	0	91	0	0	0	0	0	0	60	14	0	74	178
07:15 AM	8	0	2	1	11	12	116	0	3	131	0	0	0	0	0	0	73	9	2	84	226
07:30 AM	7	0	1	2	10	23	117	0	1	141	0	0	0	0	0	0	91	14	2	107	258
07:45 AM	9	0	4	3	16	24	98	0	0	122	0	0	0	0	0	0	95	17	0	112	250
Total	32	0	8	10	50	69	412	0	4	485	0	0	0	0	0	0	319	54	4	377	912
08:00 AM	13	0	2	1	16	26	112	0	0	138	0	0	0	0	0	0	85	21	0	106	260
08:15 AM	5	0	5	1	11	19	116	0	0	135	0	0	0	0	0	0	63	27	0	90	236
08:30 AM	10	0	2	3	15	29	107	0	0	136	0	0	0	0	0	0	87	22	0	109	260
08:45 AM	13	0	3	0	16	10	98	0	0	108	0	0	0	0	0	0	91	16	0	107	231
Total	41	0	12	5	58	84	433	0	0	517	0	0	0	0	0	0	326	86	0	412	987
Grand Total	73	0	20	15	108	153	845	0	4	1002	0	0	0	0	0	0	645	140	4	789	1899
Apprch %	67.6	0	18.5	13.9		15.3	84.3	0	0.4		0	0	0	0	0	0	81.7	17.7	0.5		
Total %	3.8	0	1.1	0.8	5.7	8.1	44.5	0	0.2	52.8	0	0	0	0	0	0	34	7.4	0.2	41.5	
PCs and Peds	95.9	0	100	100	97.2	99.3	97.8	0	100	98	0	0	0	0	0	0	95.8	99.3	100	96.5	97.3
% PCs and Peds																					
Heavy Vehicles	4.1	0	0	0	2.8	0.7	2.2	0	0	2	0	0	0	0	0	0	4.2	0.7	0	3.5	2.7
% Heavy Vehicles																					
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	9	0	4	3	16	24	98	0	0	122	0	0	0	0	0	0	95	17	0	112	250
08:00 AM	13	0	2	1	16	26	112	0	0	138	0	0	0	0	0	0	85	21	0	106	260
08:15 AM	5	0	5	1	11	19	116	0	0	135	0	0	0	0	0	0	63	27	0	90	236
08:30 AM	10	0	2	3	15	29	107	0	0	136	0	0	0	0	0	0	87	22	0	109	260
Total Volume	37	0	13	8	58	98	433	0	0	531	0	0	0	0	0	0	330	87	0	417	1006
% App. Total	63.8	0	22.4	13.8		18.5	81.5	0	0		0	0	0	0	0	0	79.1	20.9	0		
PHF	.712	.000	.650	.667	.906	.845	.933	.000	.000	.962	.000	.000	.000	.000	.000	.000	.868	.806	.000	.931	.967



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Belchertown, Massachusetts

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N / S: Ormond Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 18. AM Peak - Belmont @ Ormond
 Site Code : 18
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	6
07:15 AM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	9
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
Total	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	0	14	1	0	15	25
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
08:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
08:30 AM	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	6
08:45 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5
Total	2	0	0	0	2	1	10	0	0	11	0	0	0	0	0	0	13	0	0	13	26
Grand Total	3	0	0	0	3	1	19	0	0	20	0	0	0	0	0	0	27	1	0	28	51
Apprch %	100	0	0	0		5	95	0	0		0	0	0	0		0	96.4	3.6	0		
Total %	5.9	0	0	0	5.9	2	37.3	0	0	39.2	0	0	0	0	0	0	52.9	2	0	54.9	

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
08:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
08:30 AM	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	6
Total Volume	1	0	0	0	1	1	12	0	0	13	0	0	0	0	0	0	14	0	0	14	28
% App. Total	100	0	0	0		7.7	92.3	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.250	.500	.000	.000	.542	.000	.000	.000	.000	.000	.000	.875	.000	.000	.875	.700



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Belchertown, Massachusetts

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N / S: Walden Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 19. AM Peak - Belmont @ Walden
 Site Code : 19
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Belmont From East					Walden From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	91	0	0	91	5	0	0	2	7	0	60	0	2	62	160
07:15 AM	0	0	0	0	0	0	129	0	0	129	10	0	1	7	18	0	75	0	0	75	222
07:30 AM	0	0	0	0	0	0	141	0	0	141	10	0	2	1	13	0	93	0	0	93	247
07:45 AM	0	0	0	0	0	0	126	0	0	126	8	0	1	5	14	0	101	0	0	101	241
Total	0	0	0	0	0	0	487	0	0	487	33	0	4	15	52	0	329	0	2	331	870
08:00 AM	0	0	0	0	0	0	137	0	0	137	10	0	1	1	12	0	85	0	0	85	234
08:15 AM	0	0	0	0	0	0	136	0	0	136	14	0	2	4	20	0	63	0	1	64	220
08:30 AM	0	0	0	0	0	0	140	0	1	141	11	0	0	4	15	0	87	0	0	87	243
08:45 AM	0	0	0	0	0	0	110	0	0	110	7	0	1	2	10	0	97	0	0	97	217
Total	0	0	0	0	0	0	523	0	1	524	42	0	4	11	57	0	332	0	1	333	914
Grand Total	0	0	0	0	0	0	1010	0	1	1011	75	0	8	26	109	0	661	0	3	664	1784
Apprch %	0	0	0	0	0	0	99.9	0	0.1	100	68.8	0	7.3	23.9	76.1	0	99.5	0	0.5	100	
Total %	0	0	0	0	0	0	56.6	0	0.1	56.7	4.2	0	0.4	1.5	6.1	0	37.1	0	0.2	37.2	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	97.8	0	100	97.8	93.3	0	100	100	95.4	0	95.9	0	100	95.9	97
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	2.2	0	0	2.2	6.7	0	0	0	4.6	0	4.1	0	0	4.1	3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	From North					Belmont From East					Walden From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	129	0	0	129	10	0	1	7	18	0	75	0	0	75	222
07:30 AM	0	0	0	0	0	0	141	0	0	141	10	0	2	1	13	0	93	0	0	93	247
07:45 AM	0	0	0	0	0	0	126	0	0	126	8	0	1	5	14	0	101	0	0	101	241
08:00 AM	0	0	0	0	0	0	137	0	0	137	10	0	1	1	12	0	85	0	0	85	234
Total Volume	0	0	0	0	0	0	533	0	0	533	38	0	5	14	57	0	354	0	0	354	944
% App. Total	0	0	0	0	0	0	100	0	0	100	66.7	0	8.8	24.6	76.1	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.945	.000	.000	.945	.950	.000	.625	.500	.792	.000	.876	.000	.000	.876	.955



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovatedatallc.com or 1.413.668.5094

N / S: Walden Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 19. AM Peak - Belmont @ Walden
 Site Code : 19
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Belmont From East					Walden From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	5
07:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	9
07:30 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	4
07:45 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	4	0	0	4	8
Total	0	0	0	0	0	0	10	0	0	10	3	0	0	0	3	0	13	0	0	13	26
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
08:15 AM	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	0	4	0	0	4	10
08:30 AM	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	0	2	0	0	2	7
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total	0	0	0	0	0	0	12	0	0	12	2	0	0	0	2	0	14	0	0	14	28
Grand Total	0	0	0	0	0	0	22	0	0	22	5	0	0	0	5	0	27	0	0	27	54
Apprch %	0	0	0	0	0	0	100	0	0	100	100	0	0	0	100	0	100	0	0	100	
Total %	0	0	0	0	0	0	40.7	0	0	40.7	9.3	0	0	0	9.3	0	50	0	0	50	

Start Time	From North					Belmont From East					Walden From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

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

07:45 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	4	0	0	4	8
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
08:15 AM	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	0	4	0	0	4	10
08:30 AM	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	0	2	0	0	2	7
Total Volume	0	0	0	0	0	0	13	0	0	13	3	0	0	0	3	0	14	0	0	14	30
% App. Total	0	0	0	0	0	0	100	0	0	100	100	0	0	0	100	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.650	.000	.000	.650	.750	.000	.000	.000	.750	.000	.875	.000	.000	.875	.750



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Belchertown, Massachusetts

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N / S: Daytona & Holywood

File Name : 20. AM Peak - Belmont @ Daytona & Holywood

E / W: Belmont Avenue

Site Code : 20

City, State: Springfield, Massachusetts

Start Date : 5/7/2015

Client: Tighe & Bond

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	1	1	4	3	9	1	92	3	1	97	0	0	0	2	2	2	63	3	0	68	176
07:15 AM	0	1	3	1	5	5	135	2	1	143	0	0	0	6	6	1	76	6	0	83	237
07:30 AM	0	2	1	1	4	11	138	11	0	160	0	0	0	2	2	4	92	11	0	107	273
07:45 AM	0	0	3	2	5	4	125	13	0	142	0	0	0	7	7	5	97	5	0	107	261
Total	1	4	11	7	23	21	490	29	2	542	0	0	0	17	17	12	328	25	0	365	947
08:00 AM	0	3	4	0	7	11	135	10	0	156	0	0	0	0	0	0	88	8	0	96	259
08:15 AM	1	3	2	1	7	8	131	9	0	148	0	0	0	2	2	2	70	8	0	80	237
08:30 AM	1	1	3	4	9	10	140	9	2	161	0	0	0	5	5	3	88	7	0	98	273
08:45 AM	0	2	3	2	7	3	112	7	1	123	0	0	0	5	5	2	92	7	0	101	236
Total	2	9	12	7	30	32	518	35	3	588	0	0	0	12	12	7	338	30	0	375	1005
Grand Total	3	13	23	14	53	53	1008	64	5	1130	0	0	0	29	29	19	666	55	0	740	1952
Apprch %	5.7	24.5	43.4	26.4		4.7	89.2	5.7	0.4		0	0	0	100		2.6	90	7.4	0		
Total %	0.2	0.7	1.2	0.7	2.7	2.7	51.6	3.3	0.3	57.9	0	0	0	1.5	1.5	1	34.1	2.8	0	37.9	
PCs and Peds																					
% PCs and Peds	100	84.6	91.3	100	92.5	98.1	97.9	98.4	100	98	0	0	0	100	100	94.7	95.2	96.4	0	95.3	96.8
Heavy Vehicles																					
% Heavy Vehicles	0	15.4	8.7	0	7.5	1.9	2.1	1.6	0	2	0	0	0	0	0	5.3	4.8	3.6	0	4.7	3.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

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

Peak Hour for Entire Intersection Begins at 07:15 AM

07:15 AM	0	1	3	1	5	5	135	2	1	143	0	0	0	6	6	1	76	6	0	83	237
07:30 AM	0	2	1	1	4	11	138	11	0	160	0	0	0	2	2	4	92	11	0	107	273
07:45 AM	0	0	3	2	5	4	125	13	0	142	0	0	0	7	7	5	97	5	0	107	261
08:00 AM	0	3	4	0	7	11	135	10	0	156	0	0	0	0	0	0	88	8	0	96	259
Total Volume	0	6	11	4	21	31	533	36	1	601	0	0	0	15	15	10	353	30	0	393	1030
% App. Total	0	28.6	52.4	19		5.2	88.7	6	0.2		0	0	0	100		2.5	89.8	7.6	0		
PHF	.000	.500	.688	.500	.750	.705	.966	.692	.250	.939	.000	.000	.000	.536	.536	.500	.910	.682	.000	.918	.943



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Daytona & Holywood

E / W: Belmont Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 20. AM Peak - Belmont @ Daytona & Holywood

Site Code : 20

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	3	0	0	4	7
07:15 AM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	7	1	0	8	12
07:30 AM	0	2	1	0	3	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	7
07:45 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	5	0	0	5	9
Total	0	2	2	0	4	0	10	1	0	11	0	0	0	0	0	1	18	1	0	20	35
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
08:15 AM	0	0	0	0	0	0	6	0	0	7	0	0	0	0	0	0	4	1	0	5	12
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
Total	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	0	14	1	0	15	27
Grand Total	0	2	2	0	4	1	21	1	0	23	0	0	0	0	0	1	32	2	0	35	62
Apprch %	0	50	50	0		4.3	91.3	4.3	0		0	0	0	0		2.9	91.4	5.7	0		
Total %	0	3.2	3.2	0	6.5	1.6	33.9	1.6	0	37.1	0	0	0	0	0	1.6	51.6	3.2	0	56.5	

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

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

Peak Hour for Entire Intersection Begins at 07:00 AM

07:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	3	0	0	4	7
07:15 AM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	7	1	0	8	12
07:30 AM	0	2	1	0	3	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	7
07:45 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	5	0	0	5	9
Total Volume	0	2	2	0	4	0	10	1	0	11	0	0	0	0	0	1	18	1	0	20	35
% App. Total	0	50	50	0		0	90.9	9.1	0		0	0	0	0		5	90	5	0		
PHF	.000	.250	.500	.000	.333	.000	.833	.250	.000	.688	.000	.000	.000	.000	.000	.250	.643	.250	.000	.625	.729



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedata.com or 1.413.668.5094

N / S: Forest Park
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 1. PM Peak - Sumner @ Forest Park
 Site Code : 1
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	200	11	0	211	5	0	4	0	9	1	221	1	0	223	443
02:15 PM	0	1	0	0	1	0	234	9	0	243	9	0	2	0	11	4	270	1	0	275	530
02:30 PM	0	0	0	0	0	0	240	10	0	250	9	0	4	0	13	1	275	0	0	276	539
02:45 PM	0	0	0	0	0	0	244	4	0	248	3	0	3	0	6	5	252	0	0	257	511
Total	0	1	0	0	1	0	918	34	0	952	26	0	13	0	39	11	1018	2	0	1031	2023
03:00 PM	0	0	0	0	0	0	204	3	0	207	3	0	1	0	4	5	328	0	0	333	544
03:15 PM	2	0	0	0	2	0	262	6	0	268	3	0	1	0	4	7	296	0	0	303	577
03:30 PM	0	0	0	0	0	0	246	10	0	256	13	0	3	0	16	10	271	0	0	281	553
03:45 PM	0	0	0	0	0	0	292	1	0	293	1	0	0	0	1	4	409	0	0	413	707
Total	2	0	0	0	2	0	1004	20	0	1024	20	0	5	0	25	26	1304	0	0	1330	2381
04:00 PM	0	0	0	0	0	0	273	1	0	274	0	0	0	0	0	3	435	0	0	438	712
04:15 PM	0	0	0	0	0	0	269	8	0	277	3	0	0	0	3	3	359	0	0	362	642
04:30 PM	0	0	0	0	0	0	294	2	0	296	2	1	0	0	3	10	364	0	0	374	673
04:45 PM	0	0	0	0	0	0	284	8	0	292	1	0	1	0	2	5	338	0	0	343	637
Total	0	0	0	0	0	0	1120	19	0	1139	6	1	1	0	8	21	1496	0	0	1517	2664
05:00 PM	0	0	0	0	0	0	251	9	0	260	1	0	2	0	3	2	379	0	0	381	644
05:15 PM	0	0	0	0	0	0	340	3	0	343	1	0	0	0	1	1	392	0	0	393	737
05:30 PM	0	0	0	0	0	0	302	2	0	304	3	0	2	0	5	6	356	0	0	362	671
05:45 PM	0	0	0	0	0	0	303	6	0	309	2	0	1	0	3	7	354	0	0	361	673
Total	0	0	0	0	0	0	1196	20	0	1216	7	0	5	0	12	16	1481	0	0	1497	2725
Grand Total	2	1	0	0	3	0	4238	93	0	4331	59	1	24	0	84	74	5299	2	0	5375	9793
Apprch %	66.7	33.3	0	0		0	97.9	2.1	0		70.2	1.2	28.6	0		1.4	98.6	0	0		
Total %	0	0	0	0	0	0	43.3	0.9	0	44.2	0.6	0	0.2	0	0.9	0.8	54.1	0	0	54.9	
PCs and Peds						4117					5197										
% PCs and Peds	100	100	0	0	100	0	97.1	95.7	0	97.1	96.6	100	95.8	0	96.4	95.9	98.1	50	0	98	97.6
Heavy Vehicles						0					3.4					4.1					
% Heavy Vehicles	0	0	0	0	0	0	2.9	4.3	0	2.9	3.4	0	4.2	0	3.6	4.1	1.9	50	0	2	2.4
Bicycles						0					0					0					
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	0	0	0	0	0	292	1	0	293	1	0	0	0	1	4	409	0	0	413	707
04:00 PM	0	0	0	0	0	0	273	1	0	274	0	0	0	0	0	3	435	0	0	438	712
04:15 PM	0	0	0	0	0	0	269	8	0	277	3	0	0	0	3	3	359	0	0	362	642
04:30 PM	0	0	0	0	0	0	294	2	0	296	2	1	0	0	3	10	364	0	0	374	673
Total Volume	0	0	0	0	0	0	1128	12	0	1140	6	1	0	0	7	20	1567	0	0	1587	2734
% App. Total	0	0	0	0	0	0	98.9	1.1	0		85.7	14.3	0	0		1.3	98.7	0	0		
PHF	.000	.000	.000	.000	.000	.000	.959	.375	.000	.963	.500	.250	.000	.000	.583	.500	.901	.000	.000	.906	.960



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Forest Park

E / W: Sumner Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 1. PM Peak - Sumner @ Forest Park

Site Code : 1

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	5	1	0	6	17
02:15 PM	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	0	5	0	0	5	16
02:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	1	10	0	0	11	17
02:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	14
Total	0	0	0	0	0	0	36	1	0	37	0	0	0	0	0	1	25	1	0	27	64
03:00 PM	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	1	7	0	0	8	21
03:15 PM	0	0	0	0	0	0	6	2	0	8	0	0	0	0	0	0	6	0	0	6	14
03:30 PM	0	0	0	0	0	0	8	1	0	9	2	0	0	0	2	1	10	0	0	11	22
03:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	9	0	0	9	18
Total	0	0	0	0	0	0	36	3	0	39	2	0	0	0	2	2	32	0	0	34	75
04:00 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	15
04:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	13
04:30 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	12	0	0	12	20
04:45 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	10
Total	0	0	0	0	0	0	30	0	0	30	0	0	0	0	0	0	28	0	0	28	58
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
05:45 PM	0	0	0	0	0	0	7	0	0	7	0	0	1	0	1	0	5	0	0	5	13
Total	0	0	0	0	0	0	19	0	0	19	0	0	1	0	1	0	17	0	0	17	37
Grand Total	0	0	0	0	0	0	121	4	0	125	2	0	1	0	3	3	102	1	0	106	234
Apprch %	0	0	0	0	0	0	96.8	3.2	0	100	66.7	0	33.3	0	100	2.8	96.2	0.9	0	100	
Total %	0	0	0	0	0	0	51.7	1.7	0	53.4	0.9	0	0.4	0	1.3	1.3	43.6	0.4	0	45.3	

Start Time	Driveway From North					Sumner From East					Forest Park From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	1	7	0	0	8	21
03:15 PM	0	0	0	0	0	0	6	2	0	8	0	0	0	0	0	0	6	0	0	6	14
03:30 PM	0	0	0	0	0	0	8	1	0	9	2	0	0	0	2	1	10	0	0	11	22
03:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	9	0	0	9	18
Total Volume	0	0	0	0	0	0	36	3	0	39	2	0	0	0	2	2	32	0	0	34	75
% App. Total	0	0	0	0	0	0	92.3	7.7	0	100	100	0	0	0	100	5.9	94.1	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.692	.375	.000	.750	.250	.000	.000	.000	.250	.500	.800	.000	.000	.773	.852



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 2. PM Peak - Sumner @ Oakland
 Site Code : 2
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	28	6	13	1	48	19	187	0	0	206	0	0	0	4	4	0	217	23	9	249	507
02:15 PM	8	0	2	0	10	27	213	4	1	245	0	0	0	3	3	0	264	16	67	347	605
02:30 PM	20	0	19	0	39	6	195	0	2	203	0	0	0	0	0	0	240	12	66	318	560
02:45 PM	22	0	22	49	93	28	220	0	0	248	0	0	0	18	18	0	282	28	28	338	697
Total	78	6	56	50	190	80	815	4	3	902	0	0	0	25	25	0	1003	79	170	1252	2369
03:00 PM	26	0	13	2	41	5	200	1	6	212	0	0	0	9	9	0	244	22	11	277	539
03:15 PM	42	0	9	14	65	8	224	0	1	233	0	0	0	0	0	0	234	26	4	264	562
03:30 PM	34	0	9	3	46	2	222	0	0	224	0	0	0	0	0	0	305	24	2	331	601
03:45 PM	24	0	9	5	38	3	256	2	0	261	0	0	0	9	9	0	342	43	14	399	707
Total	126	0	40	24	190	18	902	3	7	930	0	0	0	18	18	0	1125	115	31	1271	2409
04:00 PM	34	0	8	13	55	11	238	0	3	252	0	0	0	1	1	0	375	32	2	409	717
04:15 PM	38	0	10	3	51	4	243	1	0	248	0	0	0	0	0	0	284	53	6	343	642
04:30 PM	34	0	10	9	53	5	241	0	0	246	0	0	0	0	0	0	299	41	4	344	643
04:45 PM	43	0	4	11	58	6	246	0	1	253	0	0	0	0	0	1	326	39	2	368	679
Total	149	0	32	36	217	26	968	1	4	999	0	0	0	1	1	1	1284	165	14	1464	2681
05:00 PM	49	0	8	12	69	2	252	0	0	254	0	0	0	1	1	0	346	32	5	383	707
05:15 PM	55	0	8	3	66	1	293	0	0	294	0	0	0	0	0	0	349	35	10	394	754
05:30 PM	50	1	8	14	73	3	238	0	0	241	0	0	0	4	4	0	274	50	6	330	648
05:45 PM	49	2	10	10	71	10	237	1	0	248	0	0	0	9	9	0	312	43	3	358	686
Total	203	3	34	39	279	16	1020	1	0	1037	0	0	0	14	14	0	1281	160	24	1465	2795
Grand Total	556	9	162	149	876	140	3705	9	14	3868	0	0	0	58	58	1	4693	519	239	5452	10254
Apprch %	63.5	1	18.5	17		3.6	95.8	0.2	0.4		0	0	0	100		0	86.1	9.5	4.4		
Total %	5.4	0.1	1.6	1.5	8.5	1.4	36.1	0.1	0.1	37.7	0	0	0	0.6	0.6	0	45.8	5.1	2.3	53.2	
PCs and Peds						3607										4605					
% PCs and Peds	98.6	100	95.1	88.6	96.2	95	97.4	100	92.9	97.3	0	0	0	100	100	100	98.1	95.6	95	97.7	97.4
Heavy Vehicles																					
% Heavy Vehicles	1.4	0	4.9	0	1.8	5	2.6	0	0	2.7	0	0	0	0	0	0	1.9	4.2	0.8	2	2.3
Bicycles	0	0	0	17	17	0	0	0	1	1	0	0	0	0	0	0	1	1	10	12	30
% Bicycles	0	0	0	11.4	1.9	0	0	0	7.1	0	0	0	0	0	0	0	0	0.2	4.2	0.2	0.3

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	49	0	8	12	69	2	252	0	0	254	0	0	0	1	1	0	346	32	5	383	707
05:15 PM	55	0	8	3	66	1	293	0	0	294	0	0	0	0	0	0	349	35	10	394	754
05:30 PM	50	1	8	14	73	3	238	0	0	241	0	0	0	4	4	0	274	50	6	330	648
05:45 PM	49	2	10	10	71	10	237	1	0	248	0	0	0	9	9	0	312	43	3	358	686
Total Volume	203	3	34	39	279	16	1020	1	0	1037	0	0	0	14	14	0	1281	160	24	1465	2795
% App. Total	72.8	1.1	12.2	14		1.5	98.4	0.1	0		0	0	0	100		0	87.4	10.9	1.6		
PHF	.923	.375	.850	.696	.955	.400	.870	.250	.000	.882	.000	.000	.000	.389	.389	.000	.918	.800	.600	.930	.927



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PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 2. PM Peak - Sumner @ Oakland
 Site Code : 2
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Oakland From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	1	0	0	0	1	3	8	0	0	11	0	0	0	0	0	0	4	0	0	4	16
02:15 PM	0	0	0	0	0	2	8	0	0	10	0	0	0	0	0	0	6	1	0	7	17
02:30 PM	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	0	10	0	0	10	16
02:45 PM	2	0	3	0	5	0	10	0	0	10	0	0	0	0	0	0	6	1	0	7	22
Total	3	0	5	0	8	5	30	0	0	35	0	0	0	0	0	0	26	2	0	28	71
03:00 PM	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
03:15 PM	3	0	0	0	3	0	10	0	0	10	0	0	0	0	0	0	6	4	0	10	23
03:30 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	8	1	0	9	19
03:45 PM	1	0	0	0	1	1	4	0	0	5	0	0	0	0	0	0	7	0	0	7	13
Total	5	0	1	0	6	2	28	0	0	30	0	0	0	0	0	0	26	5	0	31	67
04:00 PM	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	0	6	5	0	11	20
04:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	3	1	8	15
04:30 PM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	6	4	1	11	15
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	6	1	0	7	11
Total	0	0	2	0	2	0	22	0	0	22	0	0	0	0	0	0	22	13	2	37	61
05:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	9
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	2	0	6	7
05:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	13
Total	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	13	2	0	15	33
Grand Total	8	0	8	0	16	7	98	0	0	105	0	0	0	0	0	0	87	22	2	111	232
Apprch %	50	0	50	0		6.7	93.3	0	0		0	0	0	0		0	78.4	19.8	1.8		
Total %	3.4	0	3.4	0	6.9	3	42.2	0	0	45.3	0	0	0	0	0	0	37.5	9.5	0.9	47.8	

Start Time	Oakland From North					Sumner From East					From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	2	0	3	0	5	0	10	0	0	10	0	0	0	0	0	0	6	1	0	7	22
03:00 PM	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
03:15 PM	3	0	0	0	3	0	10	0	0	10	0	0	0	0	0	0	6	4	0	10	23
03:30 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	8	1	0	9	19
Total Volume	6	0	4	0	10	1	34	0	0	35	0	0	0	0	0	0	25	6	0	31	76
% App. Total	60	0	40	0		2.9	97.1	0	0		0	0	0	0		0	80.6	19.4	0		
PHF	.500	.000	.333	.000	.500	.250	.850	.000	.000	.875	.000	.000	.000	.000	.000	.000	.781	.375	.000	.775	.826



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Belchertown, Massachusetts

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N / S: Cliftwood Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 3. PM Peak - Sumner @ Cliftwood
 Site Code : 3
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	3	3	0	205	10	1	216	0	0	0	2	2	22	189	0	3	214	435
02:15 PM	0	0	0	4	4	0	224	3	0	227	0	0	0	5	5	29	210	1	3	243	479
02:30 PM	0	0	0	0	0	0	215	2	5	222	0	0	0	11	11	24	226	0	1	251	484
02:45 PM	0	0	0	10	10	0	221	3	1	225	0	0	0	40	40	40	168	0	4	212	487
Total	0	0	0	17	17	0	865	18	7	890	0	0	0	58	58	115	793	1	11	920	1885
03:00 PM	0	0	0	10	10	0	198	12	6	216	0	0	0	17	17	48	211	0	0	259	502
03:15 PM	0	0	0	13	13	0	220	2	4	226	0	0	0	7	7	35	187	0	0	222	468
03:30 PM	0	0	0	5	5	0	227	10	0	237	0	0	0	5	5	33	202	0	1	236	483
03:45 PM	0	0	0	11	11	0	253	7	5	265	0	0	0	11	11	34	213	0	7	254	541
Total	0	0	0	39	39	0	898	31	15	944	0	0	0	40	40	150	813	0	8	971	1994
04:00 PM	0	0	0	6	6	0	238	5	0	243	0	0	0	20	20	35	243	1	1	280	549
04:15 PM	0	0	0	11	11	0	228	6	2	236	0	0	0	9	9	31	233	0	0	264	520
04:30 PM	0	0	0	7	7	0	250	8	3	261	0	0	0	3	3	42	234	1	0	277	548
04:45 PM	0	0	0	6	6	0	248	6	5	259	0	0	0	1	1	33	234	0	0	267	533
Total	0	0	0	30	30	0	964	25	10	999	0	0	0	33	33	141	944	2	1	1088	2150
05:00 PM	0	0	0	3	3	0	224	4	1	229	0	0	0	5	5	27	246	0	0	273	510
05:15 PM	0	0	0	2	2	0	290	5	4	299	0	0	0	15	15	25	254	0	1	280	596
05:30 PM	0	0	0	6	6	0	234	9	3	246	0	0	0	7	7	33	221	0	2	256	515
05:45 PM	0	0	0	13	13	0	255	8	1	264	0	0	0	3	3	26	233	0	0	259	539
Total	0	0	0	24	24	0	1003	26	9	1038	0	0	0	30	30	111	954	0	3	1068	2160
Grand Total	0	0	0	110	110	0	3730	100	41	3871	0	0	0	161	161	517	3504	3	23	4047	8189
Apprch %	0	0	0	100		0	96.4	2.6	1.1		0	0	0	100		12.8	86.6	0.1	0.6		
Total %	0	0	0	1.3	1.3	0	45.5	1.2	0.5	47.3	0	0	0	2	2	6.3	42.8	0	0.3	49.4	
PCs and Peds						3606										3395					
% PCs and Peds	0	0	0	98.2	98.2	0	96.7	97	97.6	96.7	0	0	0	96.9	96.9	97.5	96.9	100	95.7	97	96.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	3.2	3	0	3.2	0	0	0	0	0	2.5	2.9	0	4.3	2.8	2.9
Bicycles	0	0	0	2	2	0	5	0	1	6	0	0	0	5	5	0	8	0	0	8	21
% Bicycles	0	0	0	1.8	1.8	0	0.1	0	2.4	0.2	0	0	0	3.1	3.1	0	0.2	0	0	0.2	0.3

Start Time	From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	7	7	0	250	8	3	261	0	0	0	3	3	42	234	1	0	277	548
04:45 PM	0	0	0	6	6	0	248	6	5	259	0	0	0	1	1	33	234	0	0	267	533
05:00 PM	0	0	0	3	3	0	224	4	1	229	0	0	0	5	5	27	246	0	0	273	510
05:15 PM	0	0	0	2	2	0	290	5	4	299	0	0	0	15	15	25	254	0	1	280	596
Total Volume	0	0	0	18	18	0	1012	23	13	1048	0	0	0	24	24	127	968	1	1	1097	2187
% App. Total	0	0	0	100		0	96.6	2.2	1.2		0	0	0	100		11.6	88.2	0.1	0.1		
PHF	.000	.000	.000	.643	.643	.000	.872	.719	.650	.876	.000	.000	.000	.400	.400	.756	.953	.250	.250	.979	.917



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 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 3. PM Peak - Sumner @ Cliftwood
 Site Code : 3
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Sumner From East					Cliftwood From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	6	0	0	6	16
02:15 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	1	10	0	0	11	23
02:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	13	0	1	15	22
02:45 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	1	4	0	0	5	17
Total	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	3	33	0	1	37	78
03:00 PM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	7	0	0	7	13
03:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	3	8	0	0	11	21
03:30 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	2	6	0	0	8	20
03:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	13
Total	0	0	0	0	0	0	32	1	0	33	0	0	0	0	0	5	29	0	0	34	67
04:00 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	1	7	0	0	8	16
04:15 PM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	5	0	0	5	11
04:30 PM	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	3	5	0	0	8	16
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	10
Total	0	0	0	0	0	0	24	2	0	26	0	0	0	0	0	4	23	0	0	27	53
05:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
05:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	1	5	0	0	6	12
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
05:45 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	2	0	0	2	12
Total	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	1	16	0	0	17	39
Grand Total	0	0	0	0	0	0	119	3	0	122	0	0	0	0	0	13	101	0	1	115	237
Apprch %	0	0	0	0	0	0	97.5	2.5	0		0	0	0	0	0	11.3	87.8	0	0.9		
Total %	0	0	0	0	0	0	50.2	1.3	0	51.5	0	0	0	0	0	5.5	42.6	0	0.4	48.5	

Start Time	From North					Sumner From East					Cliftwood From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM

02:00 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	6	0	0	6	16
02:15 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	1	10	0	0	11	23
02:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	13	0	1	15	22
02:45 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	1	4	0	0	5	17
Total Volume	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	3	33	0	1	37	78
% App. Total	0	0	0	0	0	0	100	0	0		0	0	0	0	0	8.1	89.2	0	2.7		
PHF	.000	.000	.000	.000	.000	.000	.854	.000	.000	.854	.000	.000	.000	.000	.000	.750	.635	.000	.250	.617	.848



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Beaumont Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 4. PM Peak - Sumner @ Beaumont
 Site Code : 4
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	5	0	1	3	9	1	182	0	0	183	0	0	0	4	4	0	182	1	0	183	379
02:15 PM	7	0	3	5	15	1	208	0	0	209	0	0	0	2	2	0	260	3	0	263	489
02:30 PM	3	0	0	5	8	5	209	0	0	214	0	0	0	1	1	1	257	1	0	259	482
02:45 PM	7	0	0	7	14	1	240	0	0	241	0	0	0	44	44	0	215	3	0	218	517
Total	22	0	4	20	46	8	839	0	0	847	0	0	0	51	51	1	914	8	0	923	1867
03:00 PM	1	0	0	10	11	2	174	0	0	176	0	0	0	32	32	0	263	5	0	268	487
03:15 PM	3	0	0	8	11	3	237	0	0	240	0	0	0	9	9	0	227	4	0	231	491
03:30 PM	3	0	1	5	9	3	218	0	0	221	0	0	0	7	7	0	237	4	0	241	478
03:45 PM	5	0	2	11	18	9	242	0	0	251	0	0	0	3	3	0	291	13	0	304	576
Total	12	0	3	34	49	17	871	0	0	888	0	0	0	51	51	0	1018	26	0	1044	2032
04:00 PM	9	0	2	6	17	7	243	0	0	250	0	0	0	18	18	0	309	6	0	315	600
04:15 PM	8	0	0	1	9	6	230	0	0	236	0	0	0	14	14	0	281	5	0	286	545
04:30 PM	3	0	1	6	10	3	238	0	0	241	0	0	0	4	4	0	268	3	0	271	526
04:45 PM	3	0	1	3	7	4	260	0	0	264	0	0	0	1	1	0	281	1	0	282	554
Total	23	0	4	16	43	20	971	0	0	991	0	0	0	37	37	0	1139	15	0	1154	2225
05:00 PM	6	0	4	3	13	5	196	0	0	201	0	0	0	1	1	0	263	5	0	268	483
05:15 PM	11	0	2	7	20	6	287	0	0	293	0	0	0	2	2	0	294	5	0	299	614
05:30 PM	4	0	3	12	19	8	294	0	0	302	0	0	0	7	7	0	263	11	0	274	602
05:45 PM	11	0	3	7	21	1	247	0	0	248	0	0	0	5	5	0	276	2	0	278	552
Total	32	0	12	29	73	20	1024	0	0	1044	0	0	0	15	15	0	1096	23	0	1119	2251
Grand Total	89	0	23	99	211	65	3705	0	0	3770	0	0	0	154	154	1	4167	72	0	4240	8375
Apprch %	42.2	0	10.9	46.9		1.7	98.3	0	0		0	0	0	100		0	98.3	1.7	0		
Total %	1.1	0	0.3	1.2	2.5	0.8	44.2	0	0	45	0	0	0	1.8	1.8	0	49.8	0.9	0	50.6	
PCs and Peds						3618					4100										
% PCs and Peds	97.8	0	100	100	99.1	100	97.7	0	0	97.7	0	0	0	100	100	100	98.4	100	0	98.4	98.1
Heavy Vehicles						2					0										
% Heavy Vehicles	2.2	0	0	0	0.9	0	2.1	0	0	2	0	0	0	0	0	0	1.4	0	0	1.3	1.6
Bicycles						10					0										
% Bicycles	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	10	0	0	10	20
% Bicycles	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.2	0	0	0.2	0.2

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	3	0	1	3	7	4	260	0	0	264	0	0	0	1	1	0	281	1	0	282	554
05:00 PM	6	0	4	3	13	5	196	0	0	201	0	0	0	1	1	0	263	5	0	268	483
05:15 PM	11	0	2	7	20	6	287	0	0	293	0	0	0	2	2	0	294	5	0	299	614
05:30 PM	4	0	3	12	19	8	294	0	0	302	0	0	0	7	7	0	263	11	0	274	602
Total Volume	24	0	10	25	59	23	1037	0	0	1060	0	0	0	11	11	0	1101	22	0	1123	2253
% App. Total	40.7	0	16.9	42.4		2.2	97.8	0	0		0	0	0	100		0	98	2	0		
PHF	.545	.000	.625	.521	.738	.719	.882	.000	.000	.877	.000	.000	.000	.393	.393	.000	.936	.500	.000	.939	.917



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PO Box 468

Belchertown, Massachusetts

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N / S: Beaumont Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 4. PM Peak - Sumner @ Beaumont
 Site Code : 4
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
02:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
02:30 PM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	12
02:45 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9
Total	1	0	0	0	1	0	23	0	0	23	0	0	0	0	0	0	18	0	0	18	42
03:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
03:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
03:30 PM	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	13
03:45 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14
Total	1	0	0	0	1	0	22	0	0	22	0	0	0	0	0	0	19	0	0	19	42
04:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
04:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6
Total	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	9	0	0	9	25
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
05:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
05:45 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	8
Total	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	11	0	0	11	27
Grand Total	2	0	0	0	2	0	77	0	0	77	0	0	0	0	0	0	57	0	0	57	136
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	1.5	0	0	0	1.5	0	56.6	0	0	56.6	0	0	0	0	0	0	41.9	0	0	41.9	

Start Time	Beaumont From North					Sumner From East					From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM

02:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
02:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
02:30 PM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	12
02:45 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9
Total Volume	1	0	0	0	1	0	23	0	0	23	0	0	0	0	0	0	18	0	0	18	42
% App. Total	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.000	.958	.000	.000	.958	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.875



Innovative Data, LLC

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Belchertown, Massachusetts

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N / S: Belmont & Lenox
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 5. PM Peak - Sumner @ Belmont & Lenox
 Site Code : 5
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
01:45 PM	3	0	46	2	51	45	161	0	1	207	3	10	33	1	47	0	0	0	0	0	305
Total	3	0	46	2	51	45	161	0	1	207	3	10	33	1	47	0	0	0	0	0	305
02:00 PM	3	0	60	3	66	41	146	0	3	190	0	6	40	3	49	0	0	0	0	0	305
02:15 PM	2	0	66	1	69	44	156	0	0	200	4	12	39	0	55	0	0	0	0	0	324
02:30 PM	3	0	50	2	55	60	185	0	3	248	2	6	44	0	52	0	0	0	0	0	355
02:45 PM	0	0	71	1	72	42	173	0	3	218	3	6	30	4	43	0	0	0	0	0	333
Total	8	0	247	7	262	187	660	0	9	856	9	30	153	7	199	0	0	0	0	0	1317
03:00 PM	3	0	76	3	82	59	148	0	3	210	3	13	34	1	51	0	0	0	0	0	343
03:15 PM	2	0	59	2	63	52	191	0	4	247	3	17	46	3	69	0	0	0	0	0	379
03:30 PM	1	0	87	2	90	56	203	0	1	260	1	16	59	4	80	0	0	0	0	0	430
03:45 PM	1	0	82	2	85	61	189	0	0	250	3	11	45	3	62	0	0	0	0	0	397
Total	7	0	304	9	320	228	731	0	8	967	10	57	184	11	262	0	0	0	0	0	1549
04:00 PM	2	0	76	1	79	53	179	0	5	237	7	6	44	3	60	0	0	0	0	0	376
04:15 PM	2	0	78	0	80	62	190	0	2	254	2	7	33	2	44	0	0	0	0	0	378
04:30 PM	3	0	85	2	90	58	196	0	3	257	0	5	44	2	51	0	0	0	0	0	398
04:45 PM	3	0	88	1	92	58	192	0	0	250	1	7	41	3	52	0	0	0	0	0	394
Total	10	0	327	4	341	231	757	0	10	998	10	25	162	10	207	0	0	0	0	0	1546
05:00 PM	2	0	91	3	96	67	183	0	2	252	1	7	32	4	44	0	0	0	0	0	392
05:15 PM	2	0	79	4	85	63	213	0	1	277	1	11	45	2	59	0	0	0	0	0	421
05:30 PM	2	0	88	3	93	49	203	0	0	252	0	8	38	5	51	0	0	0	0	0	396
05:45 PM	1	0	79	0	80	67	182	0	0	249	2	10	44	0	56	0	0	0	0	0	385
Total	7	0	337	10	354	246	781	0	3	1030	4	36	159	11	210	0	0	0	0	0	1594
Grand Total	35	0	1261	32	1328	937	3090	0	31	4058	36	158	691	40	925	0	0	0	0	0	6311
Apprch %	2.6	0	95	2.4		23.1	76.1	0	0.8		3.9	17.1	74.7	4.3		0	0	0	0		
Total %	0.6	0	20	0.5	21	14.8	49	0	0.5	64.3	0.6	2.5	10.9	0.6	14.7	0	0	0	0	0	
PCs and Peds	35	0	1235	32	1302	910	3016	0	31	3957	36	158	691	40	925	0	0	0	0	0	6184
% PCs and Peds	100	0	97.9	100	98	97.1	97.6	0	100	97.5	100	100	100	100	100	0	0	0	0	0	98
Heavy Vehicles	0	0	26	0	26	27	74	0	0	101	0	0	0	0	0	0	0	0	0	0	127
% Heavy Vehicles	0	0	2.1	0	2	2.9	2.4	0	0	2.5	0	0	0	0	0	0	0	0	0	0	2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* EB Thru Traffic Counted at Locations 6 & 7 - Sumner @ Belmont & Dickinson

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 01:45 PM to 03:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	0	0	71	1	72	42	173	0	3	218	3	6	30	4	43	0	0	0	0	0	333
03:00 PM	3	0	76	3	82	59	148	0	3	210	3	13	34	1	51	0	0	0	0	0	343
03:15 PM	2	0	59	2	63	52	191	0	4	247	3	17	46	3	69	0	0	0	0	0	379
03:30 PM	1	0	87	2	90	56	203	0	1	260	1	16	59	4	80	0	0	0	0	0	430
Total Volume	6	0	293	8	307	209	715	0	11	935	10	52	169	12	243	0	0	0	0	0	1485
% App. Total	2	0	95.4	2.6		22.4	76.5	0	1.2		4.1	21.4	69.5	4.9		0	0	0	0		
PHF	.500	.000	.842	.667	.853	.886	.881	.000	.688	.899	.833	.765	.716	.750	.759	.000	.000	.000	.000	.000	.863



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N / S: Belmont & Lenox
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 5. PM Peak - Sumner @ Belmont & Lenox
 Site Code : 5
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
01:45 PM	0	0	1	0	1	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	1	0	1	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	8
02:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
02:15 PM	0	0	5	0	5	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	11
02:30 PM	0	0	1	0	1	3	4	0	0	7	0	0	0	0	0	0	0	0	0	0	8
02:45 PM	0	0	4	0	4	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	11
Total	0	0	10	0	10	6	19	0	0	25	0	0	0	0	0	0	0	0	0	0	35
03:00 PM	0	0	2	0	2	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	6
03:15 PM	0	0	1	0	1	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	7
03:30 PM	0	0	3	0	3	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	0	4	0	4	4	4	0	0	8	0	0	0	0	0	0	0	0	0	0	12
Total	0	0	10	0	10	9	18	0	0	27	0	0	0	0	0	0	0	0	0	0	37
04:00 PM	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4
04:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	3	5	0	0	8	0	0	0	0	0	0	0	0	0	0	8
04:45 PM	0	0	1	0	1	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	2	0	2	6	15	0	0	21	0	0	0	0	0	0	0	0	0	0	23
05:00 PM	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	6
05:15 PM	0	0	2	0	2	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	6
05:30 PM	0	0	1	0	1	2	5	0	0	7	0	0	0	0	0	0	0	0	0	0	8
05:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	3	0	3	5	16	0	0	21	0	0	0	0	0	0	0	0	0	0	24
Grand Total	0	0	26	0	26	27	74	0	0	101	0	0	0	0	0	0	0	0	0	0	127
Apprch %	0	0	100	0		26.7	73.3	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	20.5	0	20.5	21.3	58.3	0	0	79.5	0	0	0	0	0	0	0	0	0	0	

* EB Thru Traffic Counted at Locations 6 & 7 - Sumner @ Belmont & Dickinson

Start Time	Belmont From North					Sumner From East					Lenox From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 01:45 PM to 03:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	0	5	0	5	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	11
02:30 PM	0	0	1	0	1	3	4	0	0	7	0	0	0	0	0	0	0	0	0	0	8
02:45 PM	0	0	4	0	4	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	11
03:00 PM	0	0	2	0	2	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	0	12	0	12	8	16	0	0	24	0	0	0	0	0	0	0	0	0	0	36
% App. Total	0	0	100	0		33.3	66.7	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.600	.000	.600	.667	.667	.000	.000	.857	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.818



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Belchertown, Massachusetts

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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 6 & 7. PM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South				Sumner From West					Int. Total	
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds		App. Total
02:00 PM	0	35	13	9	1	58	13	136	1	150	1	81	0	82	12	39	5	2	58	25	74	113	4	216	564
02:15 PM	1	39	15	7	1	63	10	119	2	131	1	85	0	86	14	38	1	7	60	11	98	135	9	253	593
02:30 PM	1	41	10	10	7	69	14	153	3	170	1	76	0	77	8	47	2	7	64	19	87	150	12	268	648
02:45 PM	0	44	15	9	5	73	9	169	6	184	5	80	0	85	12	34	2	9	57	14	95	122	6	237	636
Total	2	159	53	35	14	263	46	577	12	635	8	322	0	330	46	158	10	25	239	69	354	520	31	974	2441
03:00 PM	2	30	16	6	3	57	23	126	9	158	1	85	0	86	6	46	2	15	69	23	93	147	8	271	641
03:15 PM	1	41	19	7	3	71	15	168	1	184	2	82	0	84	16	52	4	11	83	22	114	141	10	287	709
03:30 PM	2	42	23	3	3	73	17	156	6	179	2	80	0	82	10	49	0	7	66	21	99	147	1	268	668
03:45 PM	1	40	17	7	1	66	15	192	10	217	1	75	0	76	10	36	0	4	50	21	110	184	3	318	727
Total	6	153	75	23	10	267	70	642	26	738	6	322	0	328	42	183	6	37	268	87	416	619	22	1144	2745
04:00 PM	1	46	13	8	4	72	9	123	3	135	1	95	0	96	7	56	3	12	78	26	109	154	2	291	672
04:15 PM	4	43	24	7	0	78	10	169	1	180	0	85	0	85	15	43	1	7	66	25	110	189	2	326	735
04:30 PM	1	46	18	7	3	75	10	166	4	180	2	87	0	89	11	34	3	5	53	31	111	152	8	302	699
04:45 PM	1	52	14	8	1	76	11	177	0	188	0	70	0	70	21	37	1	3	62	31	97	171	7	306	702
Total	7	187	69	30	8	301	40	635	8	683	3	337	0	340	54	170	8	27	259	113	427	666	19	1225	2808
05:00 PM	2	42	23	2	2	71	4	152	10	166	0	92	0	92	10	47	0	5	62	32	128	174	1	335	726
05:15 PM	2	56	21	4	0	83	5	209	3	217	2	89	0	91	11	46	5	1	63	18	129	181	11	339	793
05:30 PM	3	48	14	8	0	73	10	178	1	189	0	79	0	79	12	41	1	7	61	30	127	167	1	325	727
05:45 PM	3	54	17	6	0	80	4	164	3	171	1	90	0	91	10	52	3	3	68	31	111	139	7	288	698
Total	10	200	75	20	2	307	23	703	17	743	3	350	0	353	43	186	9	16	254	111	495	661	20	1287	2944
Grand Total	25	699	272	108	34	1138	179	2557	63	2799	20	1331	0	1351	185	697	33	105	1020	380	1692	2466	92	4630	10938
Apprch %	2.2	61.4	23.9	9.5	3		6.4	91.4	2.3		1.5	98.5	0		18.1	68.3	3.2	10.3		8.2	36.5	53.3	2		
Total %	0.2	6.4	2.5	1	0.3	10.4	1.6	23.4	0.6	25.6	0.2	12.2	0	12.4	1.7	6.4	0.3	1	9.3	3.5	15.5	22.5	0.8	42.3	
PCs and Peds	25	678	269	108	34	1114	175	2513	63	2751	19	1292	0	1311	181	678	32	105	996	370	1659	2435	92	4556	10728
% PCs and Peds	100	97	98.9	100	100	97.9	97.8	98.3	100	98.3	95	97.1	0	97	97.8	97.3	97	100	97.6	97.4	98	98.7	100	98.4	98.1
Heavy Vehicles	0	17	3	0	0	20	4	44	0	48	1	39	0	40	4	19	1	0	24	10	33	31	0	74	206
% Heavy Vehicles	0	2.4	1.1	0	0	1.8	2.2	1.7	0	1.7	5	2.9	0	3	2.2	2.7	3	0	2.4	2.6	2	1.3	0	1.6	1.9
Bicycles	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
% Bicycles	0	0.6	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 6 & 7. PM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 2

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South					Sumner From West					Int. Total
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 03:45 PM																									
03:45 PM	1	40	17	7	1	66	15	192	10	217	1	75	0	76	10	36	0	4	50	21	110	184	3	318	727
04:00 PM	1	46	13	8	4	72	9	123	3	135	1	95	0	96	7	56	3	12	78	26	109	154	2	291	672
04:15 PM	4	43	24	7	0	78	10	169	1	180	0	85	0	85	15	43	1	7	66	25	110	189	2	326	735
04:30 PM	1	46	18	7	3	75	10	166	4	180	2	87	0	89	11	34	3	5	53	31	111	152	8	302	699
Total Volume	7	175	72	29	8	291	44	650	18	712	4	342	0	346	43	169	7	28	247	103	440	679	15	1237	2833
% App. Total	2.4	60.1	24.7	10	2.7		6.2	91.3	2.5		1.2	98.8	0		17.4	68.4	2.8	11.3		8.3	35.6	54.9	1.2		
PHF	.438	.951	.750	.906	.500	.933	.733	.846	.450	.820	.500	.900	.000	.901	.717	.754	.583	.583	.792	.831	.991	.898	.469	.949	.964



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Belchertown, Massachusetts

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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 6 & 7. PM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South				Sumner From West					Int. Total	
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds		App. Total
02:00 PM	0	1	0	0	0	1	0	6	0	6	0	1	0	1	1	0	1	0	2	0	2	2	0	4	14
02:15 PM	0	0	1	0	0	1	1	1	0	2	0	6	0	6	0	1	0	0	1	0	3	2	0	5	15
02:30 PM	0	1	0	0	0	1	0	4	0	4	0	3	0	3	0	1	0	0	1	0	1	1	0	2	11
02:45 PM	0	3	1	0	0	4	0	1	0	1	1	7	0	8	1	1	0	0	2	0	2	2	0	4	19
Total	0	5	2	0	0	7	1	12	0	13	1	17	0	18	2	3	1	0	6	0	8	7	0	15	59
03:00 PM	0	1	1	0	0	2	1	3	0	4	0	2	0	2	0	0	0	0	0	0	2	2	0	4	12
03:15 PM	0	1	0	0	0	1	0	7	0	7	0	2	0	2	0	2	0	0	2	0	3	2	0	5	17
03:30 PM	0	1	0	0	0	1	1	4	0	5	0	3	0	3	1	0	0	0	1	0	3	3	0	6	16
03:45 PM	0	0	0	0	0	0	1	3	0	4	0	2	0	2	0	1	0	0	1	0	4	3	0	7	14
Total	0	3	1	0	0	4	3	17	0	20	0	9	0	9	1	3	0	0	4	0	12	10	0	22	59
04:00 PM	0	1	0	0	0	1	0	2	0	2	0	3	0	3	0	6	0	0	6	2	2	0	0	4	16
04:15 PM	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	1	2	1	4	0	7	10
04:30 PM	0	3	0	0	0	3	0	1	0	1	0	2	0	2	1	1	0	0	2	0	2	2	0	4	12
04:45 PM	0	2	0	0	0	2	0	2	0	2	0	1	0	1	0	0	0	0	0	3	2	0	0	5	10
Total	0	7	0	0	0	7	0	6	0	6	0	6	0	6	1	8	0	0	9	7	7	6	0	20	48
05:00 PM	0	0	0	0	0	0	0	2	0	2	0	1	0	1	0	3	0	0	3	2	1	2	0	5	11
05:15 PM	0	1	0	0	0	1	0	4	0	4	0	3	0	3	0	1	0	0	1	0	2	4	0	6	15
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	0	0	2	4
05:45 PM	0	1	0	0	0	1	0	3	0	3	0	1	0	1	0	1	0	0	1	0	2	2	0	4	10
Total	0	2	0	0	0	2	0	9	0	9	0	7	0	7	0	5	0	0	5	3	6	8	0	17	40
Grand Total	0	17	3	0	0	20	4	44	0	48	1	39	0	40	4	19	1	0	24	10	33	31	0	74	206
Apprch %	0	85	15	0	0		8.3	91.7	0		2.5	97.5	0		16.7	79.2	4.2	0		13.5	44.6	41.9	0		
Total %	0	8.3	1.5	0	0	9.7	1.9	21.4	0	23.3	0.5	18.9	0	19.4	1.9	9.2	0.5	0	11.7	4.9	16	15	0	35.9	



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson & Belmont
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 6 & 7. PM Peak - Sumner @ Belmont & Dickinson
 Site Code : 6 & 7
 Start Date : 5/7/2015
 Page No : 2

Start Time	Dickinson From North						Sumner From East				Belmont From Southeast				Dickinson From South					Sumner From West					Int. Total
	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right to Sumner	Left to Sumner	Peds	App. Total	Right to Sumner	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 02:45 PM																									
02:45 PM	0	3	1	0	0	4	0	1	0	1	1	7	0	8	1	1	0	0	2	0	2	2	0	4	19
03:00 PM	0	1	1	0	0	2	1	3	0	4	0	2	0	2	0	0	0	0	0	0	2	2	0	4	12
03:15 PM	0	1	0	0	0	1	0	7	0	7	0	2	0	2	0	2	0	0	2	0	3	2	0	5	17
03:30 PM	0	1	0	0	0	1	1	4	0	5	0	3	0	3	1	0	0	0	1	0	3	3	0	6	16
Total Volume	0	6	2	0	0	8	2	15	0	17	1	14	0	15	2	3	0	0	5	0	10	9	0	19	64
% App. Total	0	75	25	0	0		11.8	88.2	0		6.7	93.3	0		40	60	0	0		0	52.6	47.4	0		
PHF	.000	.500	.500	.000	.000	.500	.500	.536	.000	.607	.250	.500	.000	.469	.500	.375	.000	.000	.625	.000	.833	.750	.000	.792	.842



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Belchertown, Massachusetts

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N / S: Ventura / Driveway
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 8. PM Peak - Sumner @ Ventura
 Site Code : 8
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	2	0	1	6	9	2	140	0	1	143	6	0	2	8	16	2	123	2	0	127	295
02:15 PM	1	1	4	13	19	9	148	0	0	157	0	1	2	5	8	2	167	2	6	177	361
02:30 PM	4	0	2	2	8	2	165	0	3	170	3	0	3	7	13	1	169	1	7	178	369
02:45 PM	3	3	0	4	10	6	143	0	1	150	1	0	0	0	1	1	134	2	0	137	298
Total	10	4	7	25	46	19	596	0	5	620	10	1	7	20	38	6	593	7	13	619	1323
03:00 PM	6	0	0	14	20	6	160	2	4	172	0	1	0	8	9	0	160	3	1	164	365
03:15 PM	2	0	3	7	12	8	181	1	0	190	4	1	0	7	12	0	158	3	0	161	375
03:30 PM	2	2	1	11	16	2	169	2	3	176	0	0	0	2	2	1	172	3	0	176	370
03:45 PM	2	1	4	11	18	8	187	2	0	197	1	1	0	8	10	1	193	2	4	200	425
Total	12	3	8	43	66	24	697	7	7	735	5	3	0	25	33	2	683	11	5	701	1535
04:00 PM	3	6	7	8	24	8	153	1	0	162	1	1	2	1	5	2	176	4	2	184	375
04:15 PM	1	1	6	7	15	10	173	0	2	185	1	0	0	12	13	1	179	3	2	185	398
04:30 PM	5	1	6	4	16	7	172	2	6	187	0	0	2	5	7	1	185	2	2	190	400
04:45 PM	5	0	6	11	22	8	145	2	1	156	1	0	1	5	7	0	194	2	1	197	382
Total	14	8	25	30	77	33	643	5	9	690	3	1	5	23	32	4	734	11	7	756	1555
05:00 PM	7	1	4	7	19	5	180	1	3	189	1	1	0	5	7	0	207	1	0	208	423
05:15 PM	0	3	4	11	18	2	194	1	1	198	5	2	1	1	9	2	177	0	2	181	406
05:30 PM	5	4	3	0	12	4	166	0	1	171	0	1	0	5	6	1	184	2	0	187	376
05:45 PM	4	2	3	7	16	1	197	0	1	199	0	1	0	5	6	1	169	1	0	171	392
Total	16	10	14	25	65	12	737	2	6	757	6	5	1	16	28	4	737	4	2	747	1597
Grand Total	52	25	54	123	254	88	2673	14	27	2802	24	10	13	84	131	16	2747	33	27	2823	6010
Apprch %	20.5	9.8	21.3	48.4		3.1	95.4	0.5	1		18.3	7.6	9.9	64.1		0.6	97.3	1.2	1		
Total %	0.9	0.4	0.9	2	4.2	1.5	44.5	0.2	0.4	46.6	0.4	0.2	0.2	1.4	2.2	0.3	45.7	0.5	0.4	47	
PCs and Peds						2620					2706										
% PCs and Peds	100	96	100	100	99.6	100	98	100	100	98.1	100	100	100	98.8	99.2	100	98.5	100	100	98.5	98.4
Heavy Vehicles						2620					2706										
% Heavy Vehicles	0	0	0	0	0	0	1.9	0	0	1.8	0	0	0	0	0	0	1.4	0	0	1.3	1.5
Bicycles	0	1	0	0	1	0	2	0	0	2	0	0	0	1	1	0	3	0	0	3	7
% Bicycles	0	4	0	0	0.4	0	0.1	0	0	0.1	0	0	0	1.2	0.8	0	0.1	0	0	0.1	0.1

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	5	1	6	4	16	7	172	2	6	187	0	0	2	5	7	1	185	2	2	190	400
04:45 PM	5	0	6	11	22	8	145	2	1	156	1	0	1	5	7	0	194	2	1	197	382
05:00 PM	7	1	4	7	19	5	180	1	3	189	1	1	0	5	7	0	207	1	0	208	423
05:15 PM	0	3	4	11	18	2	194	1	1	198	5	2	1	1	9	2	177	0	2	181	406
Total Volume	17	5	20	33	75	22	691	6	11	730	7	3	4	16	30	3	763	5	5	776	1611
% App. Total	22.7	6.7	26.7	44		3	94.7	0.8	1.5		23.3	10	13.3	53.3		0.4	98.3	0.6	0.6		
PHF	.607	.417	.833	.750	.852	.688	.890	.750	.458	.922	.350	.375	.500	.800	.833	.375	.921	.625	.625	.933	.952



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

www.innovativedatallc.com or 1.413.668.5094

N / S: Ventura / Driveway

E / W: Sumner Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 8. PM Peak - Sumner @ Ventura

Site Code : 8

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
02:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
02:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Total	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	13	0	0	13	28
03:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
03:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
03:30 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
03:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Total	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	12	0	0	12	31
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
04:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	14
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
Total	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	16
Grand Total	0	0	0	0	0	0	51	0	0	51	0	0	0	0	0	0	38	0	0	38	89
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	
Total %	0	0	0	0	0	0	57.3	0	0	57.3	0	0	0	0	0	0	42.7	0	0	42.7	

Start Time	Ventura From North					Sumner From East					Driveway From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
03:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
03:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
03:30 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Total Volume	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	14	0	0	14	33
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.594	.000	.000	.594	.000	.000	.000	.000	.000	.000	.700	.000	.000	.700	.635



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Belchertown, Massachusetts

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N / S: Ormond Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 9. PM Peak - Sumner @ Ormond
 Site Code : 9
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	2	0	1	0	3	0	136	0	0	136	11	1	3	0	15	0	128	0	0	128	282
02:15 PM	1	1	0	0	2	1	173	11	0	185	13	0	7	2	22	6	178	2	3	189	398
02:30 PM	1	1	1	2	5	1	175	11	0	187	15	1	4	2	22	2	184	1	5	192	406
02:45 PM	4	0	0	2	6	1	155	15	0	171	16	2	14	2	34	2	142	3	2	149	360
Total	8	2	2	4	16	3	639	37	0	679	55	4	28	6	93	10	632	6	10	658	1446
03:00 PM	2	3	1	4	10	2	167	14	0	183	19	0	6	7	32	4	181	2	4	191	416
03:15 PM	1	0	0	4	5	0	182	12	1	195	13	1	14	4	32	0	172	1	2	175	407
03:30 PM	7	1	5	1	14	1	191	17	1	210	19	0	8	4	31	3	164	4	2	173	428
03:45 PM	5	0	0	4	9	0	206	22	0	228	16	1	8	3	28	4	184	3	8	199	464
Total	15	4	6	13	38	3	746	65	2	816	67	2	36	18	123	11	701	10	16	738	1715
04:00 PM	3	1	0	7	11	0	182	16	2	200	15	0	5	4	24	4	192	2	0	198	433
04:15 PM	7	1	1	12	21	1	180	15	0	196	12	0	6	2	20	4	191	1	6	202	439
04:30 PM	5	1	1	8	15	3	195	14	1	213	9	1	6	1	17	6	193	5	0	204	449
04:45 PM	5	1	1	0	7	3	172	22	0	197	12	2	9	6	29	5	210	3	1	219	452
Total	20	4	3	27	54	7	729	67	3	806	48	3	26	13	90	19	786	11	7	823	1773
05:00 PM	6	3	1	17	27	2	192	14	0	208	11	0	3	4	18	2	221	2	0	225	478
05:15 PM	5	0	1	10	16	0	186	18	0	204	20	0	10	4	34	8	228	2	9	247	501
05:30 PM	3	0	4	5	12	3	159	19	4	185	13	0	3	8	24	8	166	2	2	178	399
05:45 PM	4	1	2	7	14	2	205	12	2	221	14	1	3	4	22	2	189	1	1	193	450
Total	18	4	8	39	69	7	742	63	6	818	58	1	19	20	98	20	804	7	12	843	1828
Grand Total	61	14	19	83	177	20	2856	232	11	3119	228	10	109	57	404	60	2923	34	45	3062	6762
Apprch %	34.5	7.9	10.7	46.9		0.6	91.6	7.4	0.4		56.4	2.5	27	14.1		2	95.5	1.1	1.5		
Total %	0.9	0.2	0.3	1.2	2.6	0.3	42.2	3.4	0.2	46.1	3.4	0.1	1.6	0.8	6	0.9	43.2	0.5	0.7	45.3	
PCs and Peds						2760										2846					
% PCs and Peds	100	100	100	100	100	100	96.6	100	100	96.9	100	100	100	100	100	100	97.4	100	100	97.5	97.4
Heavy Vehicles						0										0					
% Heavy Vehicles	0	0	0	0	0	0	3.4	0	0	3.1	0	0	0	0	0	0	2.6	0	0	2.5	2.6
Bicycles						0										0					
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	5	1	1	8	15	3	195	14	1	213	9	1	6	1	17	6	193	5	0	204	449
04:45 PM	5	1	1	0	7	3	172	22	0	197	12	2	9	6	29	5	210	3	1	219	452
05:00 PM	6	3	1	17	27	2	192	14	0	208	11	0	3	4	18	2	221	2	0	225	478
05:15 PM	5	0	1	10	16	0	186	18	0	204	20	0	10	4	34	8	228	2	9	247	501
Total Volume	21	5	4	35	65	8	745	68	1	822	52	3	28	15	98	21	852	12	10	895	1880
% App. Total	32.3	7.7	6.2	53.8		1	90.6	8.3	0.1		53.1	3.1	28.6	15.3		2.3	95.2	1.3	1.1		
PHF	.875	.417	1.00	.515	.602	.667	.955	.773	.250	.965	.650	.375	.700	.625	.721	.656	.934	.600	.278	.906	.938



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Belchertown, Massachusetts

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N / S: Ormond Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 9. PM Peak - Sumner @ Ormond
 Site Code : 9
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14
02:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13
02:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	13
Total	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	25	0	0	25	48
03:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
03:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	11
03:30 PM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	3	0	0	3	14
03:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
Total	0	0	0	0	0	0	30	0	0	30	0	0	0	0	0	0	17	0	0	17	47
04:00 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
04:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13
04:30 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	15
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	9
Total	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	23	0	0	23	48
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
05:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:45 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	10
Total	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	12	0	0	12	30
Grand Total	0	0	0	0	0	0	96	0	0	96	0	0	0	0	0	0	77	0	0	77	173
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	
Total %	0	0	0	0	0	0	55.5	0	0	55.5	0	0	0	0	0	0	44.5	0	0	44.5	

Start Time	Driveway From North					Sumner From East					Ormond From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14
02:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13
02:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	13
03:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
Total Volume	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	27	0	0	27	51
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.857	.000	.000	.857	.000	.000	.000	.000	.000	.000	.844	.000	.000	.844	.911



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N / S: Daytona Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 10. PM Peak - Sumner @ Daytona
 Site Code : 10
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	140	0	0	140	3	0	2	0	5	0	131	0	0	131	276
02:15 PM	0	0	0	0	0	0	173	2	0	175	4	0	2	0	6	5	183	0	4	192	373
02:30 PM	0	0	0	0	0	0	169	7	0	176	2	0	2	0	4	5	196	0	2	203	383
02:45 PM	0	0	0	0	0	0	157	9	0	166	7	0	4	0	11	3	151	0	4	158	335
Total	0	0	0	0	0	0	639	18	0	657	16	0	10	0	26	13	661	0	10	684	1367
03:00 PM	0	0	0	0	0	0	173	10	0	183	4	0	5	6	15	6	195	0	3	204	402
03:15 PM	0	0	0	0	0	0	185	4	0	189	6	0	5	6	17	3	174	0	0	177	383
03:30 PM	0	0	0	0	0	0	189	2	0	191	11	0	6	4	21	3	184	0	0	187	399
03:45 PM	0	0	0	0	0	0	205	4	0	209	9	0	6	7	22	3	207	0	0	210	441
Total	0	0	0	0	0	0	752	20	0	772	30	0	22	23	75	15	760	0	3	778	1625
04:00 PM	0	0	0	0	0	0	174	5	0	179	5	0	2	9	16	7	200	0	0	207	402
04:15 PM	0	0	0	0	0	0	185	6	0	191	5	0	6	5	16	5	206	0	0	211	418
04:30 PM	0	0	0	0	0	0	191	7	0	198	2	0	2	2	6	2	204	0	0	206	410
04:45 PM	0	0	0	0	0	0	189	3	0	192	7	0	2	2	11	3	228	0	0	231	434
Total	0	0	0	0	0	0	739	21	0	760	19	0	12	18	49	17	838	0	0	855	1664
05:00 PM	0	0	0	0	0	0	210	6	0	216	6	0	6	10	22	6	235	0	0	241	479
05:15 PM	0	0	0	0	0	0	199	9	0	208	7	0	3	5	15	6	236	0	0	242	465
05:30 PM	0	0	0	0	0	0	176	6	0	182	12	0	5	7	24	6	187	0	0	193	399
05:45 PM	0	0	0	0	0	0	200	4	0	204	3	0	4	2	9	4	199	0	0	203	416
Total	0	0	0	0	0	0	785	25	0	810	28	0	18	24	70	22	857	0	0	879	1759
Grand Total	0	0	0	0	0	0	2915	84	0	2999	93	0	62	65	220	67	3116	0	13	3196	6415
Apprch %	0	0	0	0	0	0	97.2	2.8	0	97.2	42.3	0	28.2	29.5	42.3	2.1	97.5	0	0.4	97.5	
Total %	0	0	0	0	0	0	45.4	1.3	0	46.7	1.4	0	1	1	3.4	1	48.6	0	0.2	49.8	
PCs and Peds						2811					3039										
% PCs and Peds	0	0	0	0	0	0	96.4	94	0	96.4	97.8	0	100	92.3	96.8	100	97.5	0	100	97.6	97
Heavy Vehicles						3.6					0.9					2.4					
% Heavy Vehicles	0	0	0	0	0	0	3.5	6	0	3.6	2.2	0	0	0	0.9	0	2.5	0	0	2.4	2.9
Bicycles						1					5					0					
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	7.7	2.3	0	0	0	0	0	0.1

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	191	7	0	198	2	0	2	2	6	2	204	0	0	206	410
04:45 PM	0	0	0	0	0	0	189	3	0	192	7	0	2	2	11	3	228	0	0	231	434
05:00 PM	0	0	0	0	0	0	210	6	0	216	6	0	6	10	22	6	235	0	0	241	479
05:15 PM	0	0	0	0	0	0	199	9	0	208	7	0	3	5	15	6	236	0	0	242	465
Total Volume	0	0	0	0	0	0	789	25	0	814	22	0	13	19	54	17	903	0	0	920	1788
% App. Total	0	0	0	0	0	0	96.9	3.1	0	96.9	40.7	0	24.1	35.2	40.7	1.8	98.2	0	0	98.2	
PHF	.000	.000	.000	.000	.000	.000	.939	.694	.000	.942	.786	.000	.542	.475	.614	.708	.957	.000	.000	.950	.933



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 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 10. PM Peak - Sumner @ Daytona
 Site Code : 10
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Sumner From East					Daytona From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
02:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	15
02:30 PM	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	8	0	0	8	17
02:45 PM	0	0	0	0	0	0	4	2	0	6	1	0	0	0	1	0	7	0	0	7	14
Total	0	0	0	0	0	0	25	3	0	28	1	0	0	0	1	0	26	0	0	26	55
03:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
03:15 PM	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	2	0	0	2	11
03:30 PM	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	4	0	0	4	17
03:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Total	0	0	0	0	0	0	32	1	0	33	0	0	0	0	0	0	18	0	0	18	51
04:00 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	12
04:15 PM	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	9	0	0	9	18
04:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	6	0	0	6	13
04:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
Total	0	0	0	0	0	0	28	0	0	28	1	0	0	0	1	0	23	0	0	23	52
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
05:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	3	0	0	3	13
Total	0	0	0	0	0	0	18	1	0	19	0	0	0	0	0	0	10	0	0	10	29
Grand Total	0	0	0	0	0	0	103	5	0	108	2	0	0	0	2	0	77	0	0	77	187
Apprch %	0	0	0	0	0	0	95.4	4.6	0	100	100	0	0	0	100	0	100	0	0	100	
Total %	0	0	0	0	0	0	55.1	2.7	0	57.8	1.1	0	0	0	1.1	0	41.2	0	0	41.2	

Start Time	From North					Sumner From East					Daytona From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:30 PM

03:30 PM	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	4	0	0	4	17
03:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
04:00 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	12
04:15 PM	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	9	0	0	9	18
Total Volume	0	0	0	0	0	0	34	0	0	34	1	0	0	0	1	0	24	0	0	24	59
% App. Total	0	0	0	0	0	0	100	0	0	100	100	0	0	0	100	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.654	.000	.000	.654	.250	.000	.000	.000	.250	.000	.667	.000	.000	.667	.819



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: White Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 11. PM Peak - Sumner @ White
 Site Code : 11
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	White From North					Sumner From East					White From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	14	21	14	0	49	13	154	8	0	175	4	15	4	0	23	3	164	43	0	210	457
02:15 PM	25	37	24	0	86	21	175	8	0	204	7	10	1	0	18	3	159	41	0	203	511
02:30 PM	19	42	12	2	75	17	204	7	0	228	8	18	5	1	32	4	197	53	0	254	589
02:45 PM	12	32	21	2	67	17	238	11	1	267	7	19	4	0	30	4	185	50	3	242	606
Total	70	132	71	4	277	68	771	34	1	874	26	62	14	1	103	14	705	187	3	909	2163
03:00 PM	24	34	33	8	99	5	202	11	0	218	1	28	11	0	40	2	204	37	1	244	601
03:15 PM	15	39	14	0	68	18	286	8	1	313	9	21	1	6	37	2	207	56	0	265	683
03:30 PM	16	54	23	2	95	17	211	13	0	241	15	38	10	1	64	2	187	43	0	232	632
03:45 PM	15	82	26	2	125	12	246	12	0	270	9	60	14	0	83	1	220	46	0	267	745
Total	70	209	96	12	387	52	945	44	1	1042	34	147	36	7	224	7	818	182	1	1008	2661
04:00 PM	18	100	21	8	147	13	218	9	0	240	18	60	9	0	87	4	194	31	0	229	703
04:15 PM	20	71	32	3	126	5	175	20	0	200	10	73	15	0	98	4	198	38	0	240	664
04:30 PM	16	75	29	1	121	12	179	13	0	204	13	56	11	0	80	1	197	24	0	222	627
04:45 PM	22	93	34	0	149	12	187	5	0	204	6	52	10	1	69	4	218	24	0	246	668
Total	76	339	116	12	543	42	759	47	0	848	47	241	45	1	334	13	807	117	0	937	2662
05:00 PM	12	77	49	2	140	21	228	7	0	256	10	77	12	0	99	5	242	15	0	262	757
05:15 PM	18	97	15	2	132	34	195	7	1	237	7	35	15	0	57	0	230	34	0	264	690
05:30 PM	13	66	34	0	113	6	185	8	1	200	16	54	13	3	86	3	222	20	1	246	645
05:45 PM	15	74	19	7	115	12	201	12	0	225	20	53	11	0	84	4	241	20	1	266	690
Total	58	314	117	11	500	73	809	34	2	918	53	219	51	3	326	12	935	89	2	1038	2782
Grand Total	274	994	400	39	1707	235	3284	159	4	3682	160	669	146	12	987	46	3265	575	6	3892	10268
Apprch %	16.1	58.2	23.4	2.3		6.4	89.2	4.3	0.1		16.2	67.8	14.8	1.2		1.2	83.9	14.8	0.2		
Total %	2.7	9.7	3.9	0.4	16.6	2.3	32	1.5	0	35.9	1.6	6.5	1.4	0.1	9.6	0.4	31.8	5.6	0.1	37.9	
PCs and Peds						3238										3238					10125
% PCs and Peds	97.8	98.4	97.5	100	98.1	97	98.6	96.9	100	98.4	98.1	97.9	99.3	91.7	98.1	100	99.2	98.8	100	99.1	98.6
Heavy Vehicles																					
% Heavy Vehicles	2.2	1.6	2.5	0	1.9	3	1.4	3.1	0	1.6	1.9	2.1	0.7	8.3	1.9	0	0.8	1.2	0	0.9	1.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	White From North					Sumner From East					White From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	12	77	49	2	140	21	228	7	0	256	10	77	12	0	99	5	242	15	0	262	757
05:15 PM	18	97	15	2	132	34	195	7	1	237	7	35	15	0	57	0	230	34	0	264	690
05:30 PM	13	66	34	0	113	6	185	8	1	200	16	54	13	3	86	3	222	20	1	246	645
05:45 PM	15	74	19	7	115	12	201	12	0	225	20	53	11	0	84	4	241	20	1	266	690
Total Volume	58	314	117	11	500	73	809	34	2	918	53	219	51	3	326	12	935	89	2	1038	2782
% App. Total	11.6	62.8	23.4	2.2		8	88.1	3.7	0.2		16.3	67.2	15.6	0.9		1.2	90.1	8.6	0.2		
PHF	.806	.809	.597	.393	.893	.537	.887	.708	.500	.896	.663	.711	.850	.250	.823	.600	.966	.654	.500	.976	.919



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Belchertown, Massachusetts

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N / S: White Street
 E / W: Sumner Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 11. PM Peak - Sumner @ White
 Site Code : 11
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	White From North					Sumner From East					White From South					Sumner From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	2	1	0	3	2	5	0	0	7	0	1	0	0	1	0	3	0	0	3	14
02:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	4
02:30 PM	0	1	0	0	1	0	4	1	0	5	0	0	0	0	0	0	3	0	0	3	9
02:45 PM	1	1	3	0	5	1	1	2	0	4	0	1	0	0	1	0	3	1	0	4	14
Total	1	4	4	0	9	3	11	3	0	17	0	2	0	0	2	0	11	2	0	13	41
03:00 PM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	0	1	2	0	3	8
03:15 PM	1	3	0	0	4	0	7	0	0	7	0	1	0	1	2	0	4	1	0	5	18
03:30 PM	1	2	1	0	4	0	4	1	0	5	0	1	1	0	2	0	1	0	0	1	12
03:45 PM	1	0	1	0	2	2	5	0	0	7	0	1	0	0	1	0	4	0	0	4	14
Total	4	5	3	0	12	3	18	1	0	22	0	3	1	1	5	0	10	3	0	13	52
04:00 PM	0	1	0	0	1	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	4
04:15 PM	0	2	1	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	1	1	1	0	3	0	2	1	0	3	1	1	0	0	2	0	2	0	0	2	10
04:45 PM	0	1	0	0	1	0	2	0	0	2	0	3	0	0	3	0	0	1	0	1	7
Total	1	5	2	0	8	0	8	1	0	9	2	5	0	0	7	0	2	1	0	3	27
05:00 PM	0	1	1	0	2	0	1	0	0	1	0	2	0	0	2	0	2	1	0	3	8
05:15 PM	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	4
05:45 PM	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	0	1	0	0	1	7
Total	0	2	1	0	3	1	9	0	0	10	1	4	0	0	5	0	4	1	0	5	23
Grand Total	6	16	10	0	32	7	46	5	0	58	3	14	1	1	19	0	27	7	0	34	143
Apprch %	18.8	50	31.2	0		12.1	79.3	8.6	0		15.8	73.7	5.3	5.3		0	79.4	20.6	0		
Total %	4.2	11.2	7	0	22.4	4.9	32.2	3.5	0	40.6	2.1	9.8	0.7	0.7	13.3	0	18.9	4.9	0	23.8	

Start Time	White From North					Sumner From East					White From South					Sumner From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	1	1	3	0	5	1	1	2	0	4	0	1	0	0	1	0	3	1	0	4	14
03:00 PM	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	0	1	2	0	3	8
03:15 PM	1	3	0	0	4	0	7	0	0	7	0	1	0	1	2	0	4	1	0	5	18
03:30 PM	1	2	1	0	4	0	4	1	0	5	0	1	1	0	2	0	1	0	0	1	12
Total Volume	4	6	5	0	15	2	14	3	0	19	0	3	1	1	5	0	9	4	0	13	52
% App. Total	26.7	40	33.3	0		10.5	73.7	15.8	0		0	60	20	20		0	69.2	30.8	0		
PHF	1.00	.500	.417	.000	.750	.500	.500	.375	.000	.679	.000	.750	.250	.250	.625	.000	.563	.500	.000	.650	.722



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Belchertown, Massachusetts

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N / S: Dickinson Street
 E / W: Burlington & Grenada
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 12. PM Peak - Dickinson @ Burlington & Grenada
 Site Code : 12
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	3	54	6	1	64	15	3	5	8	31	4	62	3	0	69	1	6	0	6	13	177
02:15 PM	4	61	6	2	73	6	4	6	17	33	6	55	2	2	65	2	5	6	5	18	189
02:30 PM	1	62	6	6	75	10	3	4	5	22	4	68	6	2	80	5	6	5	6	22	199
02:45 PM	2	64	9	1	76	10	3	7	7	27	5	44	3	4	56	4	7	0	5	16	175
Total	10	241	27	10	288	41	13	22	37	113	19	229	14	8	270	12	24	11	22	69	740
03:00 PM	5	67	12	5	89	16	1	2	9	28	6	71	3	0	80	7	5	1	3	16	213
03:15 PM	4	78	6	1	89	10	4	2	6	22	4	76	8	1	89	0	12	1	11	24	224
03:30 PM	2	58	15	0	75	16	8	2	7	33	3	66	4	0	73	1	12	2	3	18	199
03:45 PM	2	81	27	0	110	25	5	3	3	36	7	54	2	3	66	3	5	1	7	16	228
Total	13	284	60	6	363	67	18	9	25	119	20	267	17	4	308	11	34	5	24	74	864
04:00 PM	12	78	20	0	110	12	1	5	12	30	6	63	4	3	76	4	16	4	2	26	242
04:15 PM	5	78	22	0	105	12	5	2	4	23	4	59	8	3	74	1	10	0	7	18	220
04:30 PM	3	74	16	2	95	11	3	0	5	19	3	53	2	5	63	2	13	1	8	24	201
04:45 PM	5	68	18	0	91	14	1	2	0	17	4	55	3	1	63	2	7	0	8	17	188
Total	25	298	76	2	401	49	10	9	21	89	17	230	17	12	276	9	46	5	25	85	851
05:00 PM	7	80	23	1	111	13	1	3	2	19	5	69	3	5	82	5	6	2	6	19	231
05:15 PM	4	90	18	1	113	9	2	1	8	20	1	53	3	11	68	1	14	1	7	23	224
05:30 PM	7	85	24	1	117	11	2	3	3	19	5	68	6	1	80	0	7	2	0	9	225
05:45 PM	4	76	15	3	98	10	1	3	0	14	3	60	4	1	68	2	13	2	3	20	200
Total	22	331	80	6	439	43	6	10	13	72	14	250	16	18	298	8	40	7	16	71	880
Grand Total	70	1154	243	24	1491	200	47	50	96	393	70	976	64	42	1152	40	144	28	87	299	3335
Apprch %	4.7	77.4	16.3	1.6		50.9	12	12.7	24.4		6.1	84.7	5.6	3.6		13.4	48.2	9.4	29.1		
Total %	2.1	34.6	7.3	0.7	44.7	6	1.4	1.5	2.9	11.8	2.1	29.3	1.9	1.3	34.5	1.2	4.3	0.8	2.6	9	
PCs and Peds	1122																				
% PCs and Peds	97.1	97.2	99.2	100	97.6	99	93.6	100	95.8	97.7	98.6	95.1	93.8	92.9	95.1	100	99.3	96.4	98.9	99	96.9
Heavy Vehicles																					
% Heavy Vehicles	2.9	2.5	0.8	0	2.2	1	4.3	0	0	1	1.4	4.7	4.7	0	4.3	0	0.7	3.6	0	0.7	2.7
Bicycles	0	3	0	0	3	0	1	0	4	5	0	2	1	3	6	0	0	0	1	1	15
% Bicycles	0	0.3	0	0	0.2	0	2.1	0	4.2	1.3	0	0.2	1.6	7.1	0.5	0	0	0	1.1	0.3	0.4

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	4	78	6	1	89	10	4	2	6	22	4	76	8	1	89	0	12	1	11	24	224
03:30 PM	2	58	15	0	75	16	8	2	7	33	3	66	4	0	73	1	12	2	3	18	199
03:45 PM	2	81	27	0	110	25	5	3	3	36	7	54	2	3	66	3	5	1	7	16	228
04:00 PM	12	78	20	0	110	12	1	5	12	30	6	63	4	3	76	4	16	4	2	26	242
Total Volume	20	295	68	1	384	63	18	12	28	121	20	259	18	7	304	8	45	8	23	84	893
% App. Total	5.2	76.8	17.7	0.3		52.1	14.9	9.9	23.1		6.6	85.2	5.9	2.3		9.5	53.6	9.5	27.4		
PHF	.417	.910	.630	.250	.873	.630	.563	.600	.583	.840	.714	.852	.563	.583	.854	.500	.703	.500	.523	.808	.923



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N / S: Dickinson Street
 E / W: Burlington & Grenada
 City, State: Springfield, Mass
 Client: Tighe & Bond

File Name : 12. PM Peak - Dickinson @ Burlington & Grenada
 Site Code : 12
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
02:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
02:30 PM	0	1	1	0	2	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	6
02:45 PM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
Total	0	8	1	0	9	1	0	0	0	1	0	10	1	0	11	0	0	0	0	0	21
03:00 PM	0	2	0	0	2	0	1	0	0	1	0	9	0	0	9	0	0	0	0	0	12
03:15 PM	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7
03:30 PM	1	2	1	0	4	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	7
03:45 PM	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	5
Total	2	6	1	0	9	0	2	0	0	2	1	18	0	0	19	0	0	1	0	1	31
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	9
04:15 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	5
04:30 PM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
04:45 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	12	0	0	12	0	0	0	0	0	0	11	2	0	13	0	1	0	0	1	26
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
Total	0	3	0	0	3	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	11
Grand Total	2	29	2	0	33	2	2	0	0	4	1	46	3	0	50	0	1	1	0	2	89
Apprch %	6.1	87.9	6.1	0		50	50	0	0		2	92	6	0		0	50	50	0		
Total %	2.2	32.6	2.2	0	37.1	2.2	2.2	0	0	4.5	1.1	51.7	3.4	0	56.2	0	1.1	1.1	0	2.2	

Start Time	Dickinson From North					Grenada From East					Dickinson From South					Burlington From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
03:00 PM	0	2	0	0	2	0	1	0	0	1	0	9	0	0	9	0	0	0	0	0	12
03:15 PM	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7
03:30 PM	1	2	1	0	4	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	7
Total Volume	1	10	1	0	12	0	2	0	0	2	1	18	0	0	19	0	0	0	0	0	33
% App. Total	8.3	83.3	8.3	0		0	100	0	0		5.3	94.7	0	0		0	0	0	0		
PHF	.250	.625	.250	.000	.750	.000	.500	.000	.000	.500	.250	.500	.000	.000	.528	.000	.000	.000	.000	.000	.688



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson Street
E / W: Cliftwood & Trenton

File Name : 13. PM Peak - Dickinson @ Cliftwood & Trenton

Site Code : 13

City, State: Springfield, Massachusetts

Start Date : 5/7/2015

Client: Tighe & Bond

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	3	50	0	1	54	0	0	0	0	0	12	55	38	3	108	24	0	4	6	34	196
02:15 PM	2	60	0	8	70	0	0	0	2	2	5	60	41	1	107	37	0	3	6	46	225
02:30 PM	2	51	0	8	61	0	0	0	0	0	4	51	41	3	99	42	0	1	5	48	208
02:45 PM	1	61	0	26	88	0	0	0	2	2	5	56	45	3	109	56	0	6	10	72	271
Total	8	222	0	43	273	0	0	0	4	4	26	222	165	10	423	159	0	14	27	200	900
03:00 PM	3	46	0	33	82	0	0	0	3	3	8	57	40	2	107	61	0	4	9	74	266
03:15 PM	3	62	0	20	85	0	0	0	0	0	9	68	56	3	136	45	0	1	4	50	271
03:30 PM	3	53	0	8	64	0	0	0	1	1	8	51	75	6	140	44	0	2	7	53	258
03:45 PM	3	63	6	18	90	0	0	0	8	8	5	57	49	6	117	46	0	2	7	55	270
Total	12	224	6	79	321	0	0	0	12	12	30	233	220	17	500	196	0	9	27	232	1065
04:00 PM	0	67	0	7	74	0	0	0	5	5	12	52	41	3	108	54	0	6	14	74	261
04:15 PM	3	74	0	8	85	0	0	0	0	0	9	52	42	4	107	61	0	0	2	63	255
04:30 PM	2	81	0	8	91	0	0	0	2	2	3	65	49	2	119	50	0	4	6	60	272
04:45 PM	3	93	0	5	101	0	0	0	5	5	8	43	48	1	100	41	0	5	7	53	259
Total	8	315	0	28	351	0	0	0	12	12	32	212	180	10	434	206	0	15	29	250	1047
05:00 PM	1	77	0	6	84	0	0	0	3	3	5	70	36	8	119	42	0	2	6	50	256
05:15 PM	4	74	0	10	88	0	0	0	2	2	9	59	51	3	122	38	0	1	3	42	254
05:30 PM	3	80	0	7	90	0	0	0	5	5	8	53	43	7	111	47	0	5	3	55	261
05:45 PM	4	75	1	13	93	0	0	0	9	9	6	61	53	2	122	36	0	3	5	44	268
Total	12	306	1	36	355	0	0	0	19	19	28	243	183	20	474	163	0	11	17	191	1039
Grand Total	40	1067	7	186	1300	0	0	0	47	47	116	910	748	57	1831	724	0	49	100	873	4051
Apprch %	3.1	82.1	0.5	14.3		0	0	0	100		6.3	49.7	40.9	3.1		82.9	0	5.6	11.5		
Total %	1	26.3	0.2	4.6	32.1	0	0	0	1.2	1.2	2.9	22.5	18.5	1.4	45.2	17.9	0	1.2	2.5	21.6	
PCs and Peds	1020																				
% PCs and Peds	100	95.6	100	90.9	95.1	0	0	0	91.5	91.5	98.3	95.3	97.3	66.7	95.4	98.2	0	98	87	96.9	95.6
Heavy Vehicles																					
% Heavy Vehicles	0	2.6	0	0	2.2	0	0	0	0	0	0	3.7	2.3	3.5	2.9	1.1	0	2	0	1	2.2
Bicycles	0	19	0	17	36	0	0	0	4	4	2	9	3	17	31	5	0	0	13	18	89
% Bicycles	0	1.8	0	9.1	2.8	0	0	0	8.5	8.5	1.7	1	0.4	29.8	1.7	0.7	0	0	13	2.1	2.2

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	1	61	0	26	88	0	0	0	2	2	5	56	45	3	109	56	0	6	10	72	271
03:00 PM	3	46	0	33	82	0	0	0	3	3	8	57	40	2	107	61	0	4	9	74	266
03:15 PM	3	62	0	20	85	0	0	0	0	0	9	68	56	3	136	45	0	1	4	50	271
03:30 PM	3	53	0	8	64	0	0	0	1	1	8	51	75	6	140	44	0	2	7	53	258
Total Volume	10	222	0	87	319	0	0	0	6	6	30	232	216	14	492	206	0	13	30	249	1066
% App. Total	3.1	69.6	0	27.3		0	0	0	100		6.1	47.2	43.9	2.8		82.7	0	5.2	12		
PHF	.833	.895	.000	.659	.906	.000	.000	.000	.500	.500	.833	.853	.720	.583	.879	.844	.000	.542	.750	.841	.983



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Dickinson Street
E / W: Cliftwood & Trenton

File Name : 13. PM Peak - Dickinson @ Cliftwood & Trenton

Site Code : 13

City, State: Springfield, Massachusetts

Start Date : 5/7/2015

Client: Tighe & Bond

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	5
02:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	5
02:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	2	0	4	1	0	0	0	1	6
Total	0	6	0	0	6	0	0	0	0	0	0	7	4	0	11	2	0	1	0	3	20
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	3	0	4	1	0	0	0	1	7
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	6
Total	0	2	0	0	2	0	0	0	0	0	0	8	4	0	12	1	0	0	0	1	15
04:00 PM	0	5	0	0	5	0	0	0	0	0	0	5	3	0	8	1	0	0	0	1	14
04:15 PM	0	3	0	0	3	0	0	0	0	0	0	5	2	2	9	0	0	0	0	0	12
04:30 PM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	2	0	0	0	2	9
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	2	0	3	1	0	0	0	1	8
Total	0	15	0	0	15	0	0	0	0	0	0	15	7	2	24	4	0	0	0	4	43
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
Total	0	5	0	0	5	0	0	0	0	0	0	4	2	0	6	1	0	0	0	1	12
Grand Total	0	28	0	0	28	0	0	0	0	0	0	34	17	2	53	8	0	1	0	9	90
Apprch %	0	100	0	0		0	0	0	0		0	64.2	32.1	3.8		88.9	0	11.1	0		
Total %	0	31.1	0	0	31.1	0	0	0	0	0	0	37.8	18.9	2.2	58.9	8.9	0	1.1	0	10	

Start Time	Dickinson From North					Trenton From East					Dickinson From South					Cliftwood From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	0	5	0	0	5	0	0	0	0	0	0	5	3	0	8	1	0	0	0	1	14
04:15 PM	0	3	0	0	3	0	0	0	0	0	0	5	2	2	9	0	0	0	0	0	12
04:30 PM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	2	0	0	0	2	9
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	2	0	3	1	0	0	0	1	8
Total Volume	0	15	0	0	15	0	0	0	0	0	0	15	7	2	24	4	0	0	0	4	43
% App. Total	0	100	0	0		0	0	0	0		0	62.5	29.2	8.3		100	0	0	0		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.750	.583	.250	.667	.500	.000	.000	.000	.500	.768



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Belchertown, Massachusetts

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N / S: Dickinson Street
 E / W: Trafton & Holywood
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 14. PM Peak - Dickinson @ Trafton & Holywood
 Site Code : 14
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	12	55	0	0	67	4	1	6	2	13	0	88	0	0	88	0	0	15	3	18	186
02:15 PM	16	68	0	1	85	8	3	7	1	19	0	72	0	0	72	0	0	15	2	17	193
02:30 PM	6	75	0	0	81	2	2	6	1	11	0	92	0	0	92	1	0	13	3	17	201
02:45 PM	10	85	0	0	95	5	2	9	3	19	0	90	2	2	94	0	0	10	26	36	244
Total	44	283	0	1	328	19	8	28	7	62	0	342	2	2	346	1	0	53	34	88	824
03:00 PM	11	80	0	0	91	6	4	8	9	27	0	113	1	21	135	0	0	12	30	42	295
03:15 PM	9	89	0	0	98	3	3	9	0	15	0	130	0	5	135	0	0	7	8	15	263
03:30 PM	9	89	0	0	98	15	5	8	1	29	0	112	3	6	121	2	0	21	6	29	277
03:45 PM	10	94	0	0	104	8	6	11	3	28	0	107	0	0	107	0	0	6	5	11	250
Total	39	352	0	0	391	32	18	36	13	99	0	462	4	32	498	2	0	46	49	97	1085
04:00 PM	11	94	0	0	105	1	3	9	3	16	0	96	1	8	105	3	0	15	7	25	251
04:15 PM	8	102	0	0	110	5	6	8	1	20	0	88	0	4	92	0	0	12	0	12	234
04:30 PM	10	122	0	0	132	4	9	9	0	22	0	75	0	2	77	1	0	25	5	31	262
04:45 PM	14	118	0	0	132	8	2	7	1	18	0	92	0	5	97	0	0	9	5	14	261
Total	43	436	0	0	479	18	20	33	5	76	0	351	1	19	371	4	0	61	17	82	1008
05:00 PM	10	90	0	0	100	7	4	12	3	26	0	96	1	5	102	1	0	15	3	19	247
05:15 PM	11	97	0	0	108	6	7	17	5	35	0	110	1	5	116	0	0	18	4	22	281
05:30 PM	13	112	0	0	125	7	7	11	1	26	0	103	0	6	109	0	0	11	2	13	273
05:45 PM	10	110	0	0	120	1	7	5	3	16	0	117	0	3	120	1	0	14	1	16	272
Total	44	409	0	0	453	21	25	45	12	103	0	426	2	19	447	2	0	58	10	70	1073
Grand Total	170	1480	0	1	1651	90	71	142	37	340	0	1581	9	72	1662	9	0	218	110	337	3990
Apprch %	10.3	89.6	0	0.1		26.5	20.9	41.8	10.9		0	95.1	0.5	4.3		2.7	0	64.7	32.6		
Total %	4.3	37.1	0	0	41.4	2.3	1.8	3.6	0.9	8.5	0	39.6	0.2	1.8	41.7	0.2	0	5.5	2.8	8.4	
PCs and Peds	1449					1546															
% PCs and Peds	98.2	97.9	0	100	97.9	100	97.2	99.3	100	99.1	0	97.8	100	100	97.9	100	0	99.1	100	99.4	98.1
Heavy Vehicles	1.8					0					0					0					
% Heavy Vehicles	1.8	2.1	0	0	2.1	0	2.8	0.7	0	0.9	0	2.2	0	0	2.1	0	0	0.9	0	0.6	1.9
Bicycles	0					0					0					0					
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	11	80	0	0	91	6	4	8	9	27	0	113	1	21	135	0	0	12	30	42	295
03:15 PM	9	89	0	0	98	3	3	9	0	15	0	130	0	5	135	0	0	7	8	15	263
03:30 PM	9	89	0	0	98	15	5	8	1	29	0	112	3	6	121	2	0	21	6	29	277
03:45 PM	10	94	0	0	104	8	6	11	3	28	0	107	0	0	107	0	0	6	5	11	250
Total Volume	39	352	0	0	391	32	18	36	13	99	0	462	4	32	498	2	0	46	49	97	1085
% App. Total	10	90	0	0		32.3	18.2	36.4	13.1		0	92.8	0.8	6.4		2.1	0	47.4	50.5		
PHF	.886	.936	.000	.000	.940	.533	.750	.818	.361	.853	.000	.888	.333	.381	.922	.250	.000	.548	.408	.577	.919



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 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 14. PM Peak - Dickinson @ Trafton & Holywood
 Site Code : 14
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
02:30 PM	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0
02:45 PM	0	4	0	0	4	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
Total	2	7	0	0	9	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	15
03:00 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0
03:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	4
03:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	0	4	0	0	4	0	1	0	0	1	0	9	0	0	9	0	0	1	0	1	15
04:00 PM	1	3	0	0	4	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	12
04:15 PM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	8
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
Total	1	17	0	0	18	0	0	1	0	1	0	13	0	0	13	0	0	1	0	1	33
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	11
Grand Total	3	31	0	0	34	0	2	1	0	3	0	35	0	0	35	0	0	2	0	2	74
Apprch %	8.8	91.2	0	0		0	66.7	33.3	0		0	100	0	0		0	0	100	0		
Total %	4.1	41.9	0	0	45.9	0	2.7	1.4	0	4.1	0	47.3	0	0	47.3	0	0	2.7	0	2.7	

Start Time	Dickinson From North					Holywood From East					Dickinson From South					Trafton From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

04:00 PM	1	3	0	0	4	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	12
04:15 PM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	8
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
Total Volume	1	17	0	0	18	0	0	1	0	1	0	13	0	0	13	0	0	1	0	1	33
% App. Total	5.6	94.4	0	0		0	0	100	0		0	100	0	0		0	0	100	0		
PHF	.250	.850	.000	.000	.900	.000	.000	.250	.000	.250	.000	.464	.000	.000	.464	.000	.000	.250	.000	.250	.688



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 15. PM Peak - Belmont @ Oakland
 Site Code : 15
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	4	68	10	14	96	13	48	4	2	67	3	17	2	7	29	11	60	18	4	93	285
02:15 PM	16	42	19	7	84	10	54	7	8	79	1	11	8	6	26	7	79	13	0	99	288
02:30 PM	13	44	11	10	78	17	56	10	9	92	4	10	4	1	19	9	65	20	4	98	287
02:45 PM	15	35	11	34	95	14	48	10	10	82	5	29	4	19	57	8	59	15	142	224	458
Total	48	189	51	65	353	54	206	31	29	320	13	67	18	33	131	35	263	66	150	514	1318
03:00 PM	7	47	18	14	86	18	54	17	18	107	2	20	4	12	38	9	69	19	17	114	345
03:15 PM	12	59	15	11	97	24	59	14	15	112	3	22	2	13	40	6	77	13	14	110	359
03:30 PM	13	49	19	8	89	9	60	23	4	96	6	29	5	8	48	12	98	19	2	131	364
03:45 PM	11	66	6	26	109	19	62	9	21	111	5	32	1	13	51	4	103	14	22	143	414
Total	43	221	58	59	381	70	235	63	58	426	16	103	12	46	177	31	347	65	55	498	1482
04:00 PM	15	53	11	19	98	20	60	7	5	92	10	20	2	4	36	5	81	24	17	127	353
04:15 PM	6	50	11	12	79	26	53	16	24	119	10	30	4	16	60	10	81	25	6	122	380
04:30 PM	10	63	13	5	91	10	56	8	9	83	6	27	1	5	39	4	91	13	10	118	331
04:45 PM	14	62	14	6	96	14	60	9	15	98	5	26	1	4	36	10	107	16	2	135	365
Total	45	228	49	42	364	70	229	40	53	392	31	103	8	29	171	29	360	78	35	502	1429
05:00 PM	11	60	8	7	86	19	48	13	8	88	5	28	1	12	46	9	102	21	14	146	366
05:15 PM	17	69	7	4	97	19	67	15	6	107	2	26	2	4	34	11	112	20	5	148	386
05:30 PM	11	59	16	13	99	14	36	13	10	73	5	29	6	6	46	9	96	21	10	136	354
05:45 PM	7	56	17	13	93	23	59	8	15	105	9	25	3	8	45	10	81	22	10	123	366
Total	46	244	48	37	375	75	210	49	39	373	21	108	12	30	171	39	391	84	39	553	1472
Grand Total	182	882	206	203	1473	269	880	183	179	1511	81	381	50	138	650	134	1361	293	279	2067	5701
Apprch %	12.4	59.9	14	13.8		17.8	58.2	12.1	11.8		12.5	58.6	7.7	21.2		6.5	65.8	14.2	13.5		
Total %	3.2	15.5	3.6	3.6	25.8	4.7	15.4	3.2	3.1	26.5	1.4	6.7	0.9	2.4	11.4	2.4	23.9	5.1	4.9	36.3	
PCs and Peds																1319					
% PCs and Peds	92.3	98.2	97.1	98.5	97.4	97.8	96.2	95.6	89.4	95.6	96.3	97.6	98	96.4	97.2	97	96.9	98.3	94.6	96.8	96.7
Heavy Vehicles																					
% Heavy Vehicles	7.1	1.5	1.9	0	2	2.2	3.5	2.2	0	2.7	0	2.4	2	0	1.5	0.7	2.9	1	0	2.1	2.2
Bicycles	1	3	2	3	9	0	2	4	19	25	3	0	0	5	8	3	3	2	15	23	65
% Bicycles	0.5	0.3	1	1.5	0.6	0	0.2	2.2	10.6	1.7	3.7	0	0	3.6	1.2	2.2	0.2	0.7	5.4	1.1	1.1

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	15	35	11	34	95	14	48	10	10	82	5	29	4	19	57	8	59	15	142	224	458
03:00 PM	7	47	18	14	86	18	54	17	18	107	2	20	4	12	38	9	69	19	17	114	345
03:15 PM	12	59	15	11	97	24	59	14	15	112	3	22	2	13	40	6	77	13	14	110	359
03:30 PM	13	49	19	8	89	9	60	23	4	96	6	29	5	8	48	12	98	19	2	131	364
Total Volume	47	190	63	67	367	65	221	64	47	397	16	100	15	52	183	35	303	66	175	579	1526
% App. Total	12.8	51.8	17.2	18.3		16.4	55.7	16.1	11.8		8.7	54.6	8.2	28.4		6	52.3	11.4	30.2		
PHF	.783	.805	.829	.493	.946	.677	.921	.696	.653	.886	.667	.862	.750	.684	.803	.729	.773	.868	.308	.646	.833



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PO Box 468

Belchertown, Massachusetts

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N / S: Oakland Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 15. PM Peak - Belmont @ Oakland
 Site Code : 15
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	2	4	0	0	6	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	8
02:15 PM	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	0	6	0	0	6	11
02:30 PM	0	2	0	0	2	1	2	0	0	3	0	0	0	0	0	1	4	0	0	5	10
02:45 PM	1	1	0	0	2	0	2	0	0	2	0	1	0	0	1	0	3	2	0	5	10
Total	3	7	0	0	10	2	7	1	0	10	0	2	0	0	2	1	14	2	0	17	39
03:00 PM	1	1	0	0	2	1	3	2	0	6	0	0	0	0	0	0	1	0	0	1	9
03:15 PM	0	2	0	0	2	1	3	0	0	4	0	2	0	0	2	0	1	0	0	1	9
03:30 PM	0	0	1	0	1	1	2	0	0	3	0	2	0	0	2	0	3	0	0	3	9
03:45 PM	3	1	1	0	5	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	11
Total	4	4	2	0	10	3	11	2	0	16	0	4	0	0	4	0	8	0	0	8	38
04:00 PM	4	1	0	0	5	0	8	0	0	8	0	1	0	0	1	0	2	0	0	2	16
04:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	4	1	0	5	8
04:30 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
04:45 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	4	0	0	4	7
Total	5	2	1	0	8	0	9	1	0	10	0	3	1	0	4	0	10	1	0	11	33
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:15 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	2	0	0	2	6
05:30 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
Total	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	7	0	0	7	14
Grand Total	13	13	4	0	30	6	31	4	0	41	0	9	1	0	10	1	39	3	0	43	124
Apprch %	43.3	43.3	13.3	0		14.6	75.6	9.8	0		0	90	10	0		2.3	90.7	7	0		
Total %	10.5	10.5	3.2	0	24.2	4.8	25	3.2	0	33.1	0	7.3	0.8	0	8.1	0.8	31.5	2.4	0	34.7	

Start Time	Oakland From North					Belmont From East					Oakland From South					Belmont From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	2	0	0	2	1	3	0	0	4	0	2	0	0	2	0	1	0	0	1	9
03:30 PM	0	0	1	0	1	1	2	0	0	3	0	2	0	0	2	0	3	0	0	3	9
03:45 PM	3	1	1	0	5	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	11
04:00 PM	4	1	0	0	5	0	8	0	0	8	0	1	0	0	1	0	2	0	0	2	16
Total Volume	7	4	2	0	13	2	16	0	0	18	0	5	0	0	5	0	9	0	0	9	45
% App. Total	53.8	30.8	15.4	0		11.1	88.9	0	0		0	100	0	0		0	100	0	0		
PHF	.438	.500	.500	.000	.650	.500	.500	.000	.000	.563	.000	.625	.000	.000	.625	.000	.750	.000	.000	.750	.703



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N / S: Beaumont Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 16. PM Peak - Belmont @ Beaumont
 Site Code : 16
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	1	4	1	4	10	3	56	4	0	63	5	1	1	4	11	0	67	5	0	72	156
02:15 PM	4	4	0	9	17	3	62	3	1	69	2	0	0	6	8	1	75	7	1	84	178
02:30 PM	3	3	0	11	17	1	76	0	1	78	2	1	1	5	9	1	71	6	0	78	182
02:45 PM	6	1	2	23	32	1	69	1	6	77	2	2	0	12	16	2	79	3	4	88	213
Total	14	12	3	47	76	8	263	8	8	287	11	4	2	27	44	4	292	21	5	322	729
03:00 PM	2	1	1	9	13	0	70	0	1	71	3	3	2	21	29	0	75	7	1	83	196
03:15 PM	3	2	1	3	9	2	82	1	1	86	1	7	1	9	18	0	82	8	2	92	205
03:30 PM	6	5	3	3	17	1	81	1	6	89	3	5	0	5	13	1	101	7	0	109	228
03:45 PM	5	3	3	6	17	4	70	2	1	77	3	6	5	13	27	1	95	7	4	107	228
Total	16	11	8	21	56	7	303	4	9	323	10	21	8	48	87	2	353	29	7	391	857
04:00 PM	4	4	2	10	20	1	75	4	0	80	8	4	2	4	18	2	93	9	0	104	222
04:15 PM	4	3	0	6	13	1	79	3	0	83	4	4	2	8	18	1	86	3	1	91	205
04:30 PM	3	1	2	3	9	4	60	1	0	65	1	3	1	10	15	1	99	11	3	114	203
04:45 PM	8	3	2	11	24	3	69	1	1	74	1	2	1	4	8	2	106	5	4	117	223
Total	19	11	6	30	66	9	283	9	1	302	14	13	6	26	59	6	384	28	8	426	853
05:00 PM	4	2	1	5	12	1	64	2	0	67	5	7	1	7	20	2	107	11	0	120	219
05:15 PM	8	5	1	5	19	0	94	3	0	97	5	7	2	0	14	6	103	3	1	113	243
05:30 PM	3	5	2	8	18	1	50	2	0	53	3	3	2	4	12	2	102	9	0	113	196
05:45 PM	0	7	4	7	18	1	77	4	1	83	0	3	1	3	7	4	91	7	3	105	213
Total	15	19	8	25	67	3	285	11	1	300	13	20	6	14	53	14	403	30	4	451	871
Grand Total	64	53	25	123	265	27	1134	32	19	1212	48	58	22	115	243	26	1432	108	24	1590	3310
Apprch %	24.2	20	9.4	46.4		2.2	93.6	2.6	1.6		19.8	23.9	9.1	47.3		1.6	90.1	6.8	1.5		
Total %	1.9	1.6	0.8	3.7	8	0.8	34.3	1	0.6	36.6	1.5	1.8	0.7	3.5	7.3	0.8	43.3	3.3	0.7	48	
PCs and Peds						1112										1399					
% PCs and Peds	96.9	98.1	96	100	98.5	92.6	98.1	100	100	98	100	100	100	100	100	96.2	97.7	100	100	97.9	98.1
Heavy Vehicles																					
% Heavy Vehicles	3.1	0	0	0	0.8	3.7	1.5	0	0	1.5	0	0	0	0	0	0	1.7	0	0	1.6	1.4
Bicycles	0	1	1	0	2	1	5	0	0	6	0	0	0	0	0	1	8	0	0	9	17
% Bicycles	0	1.9	4	0	0.8	3.7	0.4	0	0	0.5	0	0	0	0	0	3.8	0.6	0	0	0.6	0.5

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	1	2	3	9	4	60	1	0	65	1	3	1	10	15	1	99	11	3	114	203
04:45 PM	8	3	2	11	24	3	69	1	1	74	1	2	1	4	8	2	106	5	4	117	223
05:00 PM	4	2	1	5	12	1	64	2	0	67	5	7	1	7	20	2	107	11	0	120	219
05:15 PM	8	5	1	5	19	0	94	3	0	97	5	7	2	0	14	6	103	3	1	113	243
Total Volume	23	11	6	24	64	8	287	7	1	303	12	19	5	21	57	11	415	30	8	464	888
% App. Total	35.9	17.2	9.4	37.5		2.6	94.7	2.3	0.3		21.1	33.3	8.8	36.8		2.4	89.4	6.5	1.7		
PHF	.719	.550	.750	.545	.667	.500	.763	.583	.250	.781	.600	.679	.625	.525	.713	.458	.970	.682	.500	.967	.914



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N / S: Beaumont Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 16. PM Peak - Belmont @ Beaumont
 Site Code : 16
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
02:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
02:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
02:45 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	3	0	0	3	6
Total	1	0	0	0	1	1	4	0	0	5	0	0	0	0	0	0	8	0	0	8	14
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
03:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
03:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	12
04:00 PM	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	5
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
Total	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
Grand Total	2	0	0	0	2	1	17	0	0	18	0	0	0	0	0	0	25	0	0	25	45
Apprch %	100	0	0	0		5.6	94.4	0	0		0	0	0	0		0	100	0	0		
Total %	4.4	0	0	0	4.4	2.2	37.8	0	0	40	0	0	0	0	0	0	55.6	0	0	55.6	

Start Time	Beaumont From North					Belmont From East					Beaumont From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:15 PM

03:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
03:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
03:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
04:00 PM	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	5
Total Volume	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	16
% App. Total	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.000	.438	.000	.000	.438	.667



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Commonwealth Avenue
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 17. PM Peak - Belmont @ Commonwealth
 Site Code : 17
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	75	23	0	98	21	0	10	5	36	8	85	0	8	101	235
02:15 PM	0	0	0	5	5	0	75	31	0	106	13	0	2	0	15	13	120	0	6	139	265
02:30 PM	0	0	0	0	0	0	83	26	2	111	22	0	5	2	29	10	104	0	7	121	261
02:45 PM	0	0	0	2	2	0	93	26	0	119	22	0	1	9	32	11	110	0	3	124	277
Total	0	0	0	7	7	0	326	106	2	434	78	0	18	16	112	42	419	0	24	485	1038
03:00 PM	0	0	0	4	4	0	81	20	1	102	39	0	2	6	47	11	114	0	12	137	290
03:15 PM	0	0	0	5	5	0	79	21	3	103	29	0	4	3	36	16	121	0	12	149	293
03:30 PM	0	0	0	0	0	0	80	25	1	106	37	0	6	2	45	17	124	0	3	144	295
03:45 PM	0	0	0	5	5	0	69	31	3	103	23	0	5	1	29	10	114	0	0	124	261
Total	0	0	0	14	14	0	309	97	8	414	128	0	17	12	157	54	473	0	27	554	1139
04:00 PM	0	0	0	3	3	0	91	44	4	139	32	0	1	1	34	13	130	0	5	148	324
04:15 PM	0	0	0	2	2	0	89	33	0	122	27	0	5	1	33	14	140	0	9	163	320
04:30 PM	0	0	0	0	0	0	79	36	2	117	21	0	6	3	30	7	119	0	2	128	275
04:45 PM	0	0	0	1	1	0	79	37	4	120	25	0	3	0	28	6	118	0	1	125	274
Total	0	0	0	6	6	0	338	150	10	498	105	0	15	5	125	40	507	0	17	564	1193
05:00 PM	0	0	0	0	0	0	89	28	2	119	27	0	5	0	32	10	149	0	2	161	312
05:15 PM	0	0	0	0	0	0	78	42	1	121	26	0	7	1	34	11	162	0	15	188	343
05:30 PM	0	0	0	0	0	0	76	26	10	112	31	0	5	1	37	17	140	0	4	161	310
05:45 PM	0	0	0	0	0	0	85	23	4	112	17	0	6	1	24	11	137	0	1	149	285
Total	0	0	0	0	0	0	328	119	17	464	101	0	23	3	127	49	588	0	22	659	1250
Grand Total	0	0	0	27	27	0	1301	472	37	1810	412	0	73	36	521	185	1987	0	90	2262	4620
Apprch %	0	0	0	100		0	71.9	26.1	2		79.1	0	14	6.9		8.2	87.8	0	4		
Total %	0	0	0	0.6	0.6	0	28.2	10.2	0.8	39.2	8.9	0	1.6	0.8	11.3	4	43	0	1.9	49	
PCs and Peds						1252										1937					
% PCs and Peds	0	0	0	96.3	96.3	0	96.2	99.2	83.8	96.7	99.3	0	98.6	91.7	98.7	98.9	97.5	0	90	97.3	97.2
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	3.8	0.8	0	2.9	0.7	0	1.4	0	0.8	1.1	2.5	0	0	2.3	2.4
Bicycles	0	0	0	1	1	0	0	0	6	6	0	0	0	3	3	0	0	0	9	9	19
% Bicycles	0	0	0	3.7	3.7	0	0	0	16.2	0.3	0	0	0	8.3	0.6	0	0	0	10	0.4	0.4

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

05:00 PM	0	0	0	0	0	0	89	28	2	119	27	0	5	0	32	10	149	0	2	161	312
05:15 PM	0	0	0	0	0	0	78	42	1	121	26	0	7	1	34	11	162	0	15	188	343
05:30 PM	0	0	0	0	0	0	76	26	10	112	31	0	5	1	37	17	140	0	4	161	310
05:45 PM	0	0	0	0	0	0	85	23	4	112	17	0	6	1	24	11	137	0	1	149	285
Total Volume	0	0	0	0	0	0	328	119	17	464	101	0	23	3	127	49	588	0	22	659	1250
% App. Total	0	0	0	0	0	0	70.7	25.6	3.7		79.5	0	18.1	2.4		7.4	89.2	0	3.3		
PHF	.000	.000	.000	.000	.000	.000	.921	.708	.425	.959	.815	.000	.821	.750	.858	.721	.907	.000	.367	.876	.911



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Belchertown, Massachusetts

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N / S: Commonwealth Avenue
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 17. PM Peak - Belmont @ Commonwealth
 Site Code : 17
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
02:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	4	0	0	5	12
02:30 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	3	0	0	3	6
02:45 PM	0	0	0	0	0	0	12	1	0	13	1	0	0	0	1	0	4	0	0	4	18
Total	0	0	0	0	0	0	23	2	0	25	1	0	0	0	1	1	13	0	0	14	40
03:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
03:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
03:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
03:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	17	0	0	17	27
04:00 PM	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	0	3	0	0	3	8
04:15 PM	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	2	0	0	3	6
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
04:45 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	7	2	0	9	2	0	1	0	3	1	10	0	0	11	23
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
05:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
Total	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	10	0	0	10	19
Grand Total	0	0	0	0	0	0	49	4	0	53	3	0	1	0	4	2	50	0	0	52	109
Apprch %	0	0	0	0	0	0	92.5	7.5	0	53	75	0	25	0	4	3.8	96.2	0	0	52	109
Total %	0	0	0	0	0	0	45	3.7	0	48.6	2.8	0	0.9	0	3.7	1.8	45.9	0	0	47.7	

Start Time	From North					Belmont From East					Commonwealth From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	4	0	0	5	12
02:30 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	3	0	0	3	6
02:45 PM	0	0	0	0	0	0	12	1	0	13	1	0	0	0	1	0	4	0	0	4	18
03:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total Volume	0	0	0	0	0	0	23	2	0	25	1	0	0	0	1	1	15	0	0	16	42
% App. Total	0	0	0	0	0	0	92	8	0	53	100	0	0	0	4	6.2	93.8	0	0	52	109
PHF	.000	.000	.000	.000	.000	.000	.479	.500	.000	.481	.250	.000	.000	.000	.250	.250	.938	.000	.000	.800	.583



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N / S: Ormond Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 18. PM Peak - Belmont @ Ormond
 Site Code : 18
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	16	0	4	0	20	14	89	0	3	106	0	0	0	0	0	0	92	18	3	113	239
02:15 PM	17	0	5	2	24	14	93	0	0	107	0	0	0	0	0	0	123	2	2	127	258
02:30 PM	9	0	4	4	17	9	101	0	0	110	0	0	0	0	0	0	125	10	0	135	262
02:45 PM	14	0	4	2	20	14	103	0	1	118	0	0	0	0	0	0	114	14	0	128	266
Total	56	0	17	8	81	51	386	0	4	441	0	0	0	0	0	0	454	44	5	503	1025
03:00 PM	13	0	6	5	24	11	88	0	1	100	0	0	0	0	0	0	130	18	0	148	272
03:15 PM	9	0	6	7	22	16	100	0	0	116	0	0	0	0	0	0	120	14	1	135	273
03:30 PM	16	0	3	2	21	12	83	0	0	95	0	0	0	0	0	0	136	16	2	154	270
03:45 PM	22	0	7	9	38	16	81	0	1	98	0	0	0	0	0	0	127	11	8	146	282
Total	60	0	22	23	105	55	352	0	2	409	0	0	0	0	0	0	513	59	11	583	1097
04:00 PM	19	0	3	8	30	7	92	0	0	99	0	0	0	0	0	0	139	14	1	154	283
04:15 PM	16	0	6	5	27	3	102	0	0	105	0	0	0	0	0	0	154	13	1	168	300
04:30 PM	11	0	9	3	23	5	95	0	0	100	0	0	0	0	0	0	129	10	1	140	263
04:45 PM	16	0	10	5	31	8	92	0	0	100	0	0	0	0	0	0	135	20	5	160	291
Total	62	0	28	21	111	23	381	0	0	404	0	0	0	0	0	0	557	57	8	622	1137
05:00 PM	17	0	4	0	21	4	101	0	0	105	0	0	0	0	0	0	156	11	3	170	296
05:15 PM	15	0	10	0	25	15	93	0	0	108	0	0	0	0	0	0	169	16	0	185	318
05:30 PM	14	0	11	0	25	4	84	0	0	88	0	0	0	0	0	0	171	8	0	179	292
05:45 PM	8	0	6	3	17	9	97	0	2	108	0	0	0	0	0	0	131	13	2	146	271
Total	54	0	31	3	88	32	375	0	2	409	0	0	0	0	0	0	627	48	5	680	1177
Grand Total	232	0	98	55	385	161	1494	0	8	1663	0	0	0	0	0	0	2151	208	29	2388	4436
Apprch %	60.3	0	25.5	14.3		9.7	89.8	0	0.5		0	0	0	0	0	0	90.1	8.7	1.2		
Total %	5.2	0	2.2	1.2	8.7	3.6	33.7	0	0.2	37.5	0	0	0	0	0	0	48.5	4.7	0.7	53.8	
PCs and Peds						1449					2094										
% PCs and Peds	97.4	0	99	98.2	97.9	95.7	97	0	87.5	96.8	0	0	0	0	0	0	97.4	98.1	100	97.4	97.2
Heavy Vehicles																					
% Heavy Vehicles	2.2	0	1	0	1.6	3.7	2.9	0	0	2.9	0	0	0	0	0	0	2.4	1.9	0	2.3	2.5
Bicycles	1	0	0	1	2	1	2	0	1	4	0	0	0	0	0	0	5	0	0	5	11
% Bicycles	0.4	0	0	1.8	0.5	0.6	0.1	0	12.5	0.2	0	0	0	0	0	0	0.2	0	0	0.2	0.2

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	16	0	10	5	31	8	92	0	0	100	0	0	0	0	0	0	135	20	5	160	291
05:00 PM	17	0	4	0	21	4	101	0	0	105	0	0	0	0	0	0	156	11	3	170	296
05:15 PM	15	0	10	0	25	15	93	0	0	108	0	0	0	0	0	0	169	16	0	185	318
05:30 PM	14	0	11	0	25	4	84	0	0	88	0	0	0	0	0	0	171	8	0	179	292
Total Volume	62	0	35	5	102	31	370	0	0	401	0	0	0	0	0	0	631	55	8	694	1197
% App. Total	60.8	0	34.3	4.9		7.7	92.3	0	0		0	0	0	0	0	0	90.9	7.9	1.2		
PHF	.912	.000	.795	.250	.823	.517	.916	.000	.000	.928	.000	.000	.000	.000	.000	.000	.923	.688	.400	.938	.941



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 Client: Tighe & Bond

File Name : 18. PM Peak - Belmont @ Ormond
 Site Code : 18
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Ormond From North					Belmont From East					From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
02:15 PM	1	0	0	0	1	3	7	0	0	10	0	0	0	0	0	0	4	0	0	4	15
02:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
02:45 PM	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	0	5	1	0	6	16
Total	2	0	0	0	2	3	21	0	0	24	0	0	0	0	0	0	14	1	0	15	41
03:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
03:15 PM	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	9
03:30 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	3	1	0	4	7
03:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total	1	0	0	0	1	2	11	0	0	13	0	0	0	0	0	0	15	1	0	16	30
04:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	6
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	5
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	5
04:45 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5
Total	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	0	13	2	0	15	21
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
05:15 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	4
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
05:45 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	1	0	0	0	1	1	7	0	0	8	0	0	0	0	0	0	10	0	0	10	19
Grand Total	5	0	1	0	6	6	43	0	0	49	0	0	0	0	0	0	52	4	0	56	111
Apprch %	83.3	0	16.7	0		12.2	87.8	0	0		0	0	0	0		0	92.9	7.1	0		
Total %	4.5	0	0.9	0	5.4	5.4	38.7	0	0	44.1	0	0	0	0	0	0	46.8	3.6	0	50.5	

Start Time	Ormond From North					Belmont From East					From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	1	0	0	0	1	3	7	0	0	10	0	0	0	0	0	0	4	0	0	4	15
02:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
02:45 PM	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	0	5	1	0	6	16
03:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total Volume	2	0	0	0	2	3	22	0	0	25	0	0	0	0	0	0	16	1	0	17	44
% App. Total	100	0	0	0		12	88	0	0		0	0	0	0		0	94.1	5.9	0		
PHF	.500	.000	.000	.000	.500	.250	.611	.000	.000	.625	.000	.000	.000	.000	.000	.000	.800	.250	.000	.708	.688



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Walden Street
 E / W: Belmont Avenue
 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 19. PM Peak - Belmont @ Walden
 Site Code : 19
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Belmont From East					Walden From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:45 PM	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	0	5	0	0	5	17
Total	0	0	0	0	0	0	24	0	0	24	3	0	1	0	4	0	14	0	0	14	42
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
03:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
03:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
03:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	16	0	0	16	28
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	18
05:00 PM	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	0	3	0	0	3	8
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	8	0	0	8	1	0	1	0	2	0	10	0	0	10	20
Grand Total	0	0	0	0	0	0	49	0	0	49	4	0	2	0	6	0	53	0	0	53	108
Apprch %	0	0	0	0	0	0	100	0	0	100	66.7	0	33.3	0	66.7	0	100	0	0	100	
Total %	0	0	0	0	0	0	45.4	0	0	45.4	3.7	0	1.9	0	5.6	0	49.1	0	0	49.1	

Start Time	From North					Belmont From East					Walden From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:45 PM	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	0	5	0	0	5	17
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
Total Volume	0	0	0	0	0	0	24	0	0	24	3	0	1	0	4	0	17	0	0	17	45
% App. Total	0	0	0	0	0	0	100	0	0	100	75	0	25	0	75	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.600	.000	.000	.600	.250	.000	.250	.000	.250	.000	.850	.000	.000	.850	.662



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N / S: Walden Street
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 City, State: Springfield, Massachusetts
 Client: Tighe & Bond

File Name : 19. PM Peak - Belmont @ Walden
 Site Code : 19
 Start Date : 5/7/2015
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	From North					Belmont From East					Walden From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:45 PM	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	0	5	0	0	5	17
Total	0	0	0	0	0	0	24	0	0	24	3	0	1	0	4	0	14	0	0	14	42
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
03:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
03:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
03:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	16	0	0	16	28
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	18
05:00 PM	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	0	3	0	0	3	8
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	8	0	0	8	1	0	1	0	2	0	10	0	0	10	20
Grand Total	0	0	0	0	0	0	49	0	0	49	4	0	2	0	6	0	53	0	0	53	108
Apprch %	0	0	0	0	0	0	100	0	0	100	66.7	0	33.3	0	66.7	0	100	0	0	100	
Total %	0	0	0	0	0	0	45.4	0	0	45.4	3.7	0	1.9	0	5.6	0	49.1	0	0	49.1	

Start Time	From North					Belmont From East					Walden From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
02:45 PM	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	0	5	0	0	5	17
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
Total Volume	0	0	0	0	0	0	24	0	0	24	3	0	1	0	4	0	17	0	0	17	45
% App. Total	0	0	0	0	0	0	100	0	0	100	75	0	25	0	75	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.600	.000	.000	.600	.250	.000	.250	.000	.250	.000	.850	.000	.000	.850	.662



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Belchertown, Massachusetts

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N / S: Daytona & Holywood

E / W: Belmont Avenue

City, State: Springfield, Massachusetts

Client: Tighe & Bond

File Name : 20. PM Peak - Belmont @ Daytona & Holywood

Site Code : 20

Start Date : 5/7/2015

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	2	3	4	0	9	6	104	5	0	115	0	0	0	1	1	0	102	2	0	104	229
02:15 PM	1	5	2	5	13	0	105	9	0	114	0	0	0	2	2	2	126	5	0	133	262
02:30 PM	2	2	8	1	13	2	110	7	2	121	0	0	0	7	7	2	134	1	0	137	278
02:45 PM	1	5	6	1	13	8	110	12	0	130	0	0	0	5	5	4	125	3	4	136	284
Total	6	15	20	7	48	16	429	33	2	480	0	0	0	15	15	8	487	11	4	510	1053
03:00 PM	2	3	4	7	16	6	99	7	0	112	0	0	0	12	12	4	144	7	0	155	295
03:15 PM	2	2	3	4	11	4	118	7	1	130	1	0	0	12	13	4	140	7	1	152	306
03:30 PM	0	2	1	2	5	6	106	20	1	133	0	0	0	8	8	3	140	10	2	155	301
03:45 PM	0	2	2	10	14	4	98	17	3	122	0	0	0	3	3	4	142	10	0	156	295
Total	4	9	10	23	46	20	421	51	5	497	1	0	0	35	36	15	566	34	3	618	1197
04:00 PM	1	3	9	2	15	2	110	13	0	125	0	0	0	12	12	1	143	8	1	153	305
04:15 PM	0	3	4	2	9	5	101	10	5	121	0	1	0	6	7	2	157	6	0	165	302
04:30 PM	1	3	3	3	10	3	108	18	3	132	0	0	0	4	4	5	138	2	1	146	292
04:45 PM	1	2	3	6	12	1	94	8	9	112	0	0	0	4	4	5	132	4	4	145	273
Total	3	11	19	13	46	11	413	49	17	490	0	1	0	26	27	13	570	20	6	609	1172
05:00 PM	2	4	7	0	13	4	105	12	1	122	0	0	0	5	5	10	162	7	1	180	320
05:15 PM	0	7	6	1	14	4	105	15	0	124	0	0	0	10	10	4	170	6	0	180	328
05:30 PM	1	2	8	2	13	2	93	13	3	111	0	0	0	7	7	4	181	10	0	195	326
05:45 PM	3	1	4	2	10	4	93	6	0	103	1	0	0	6	7	2	136	2	2	142	262
Total	6	14	25	5	50	14	396	46	4	460	1	0	0	28	29	20	649	25	3	697	1236
Grand Total	19	49	74	48	190	61	1659	179	28	1927	2	1	0	104	107	56	2272	90	16	2434	4658
Apprch %	10	25.8	38.9	25.3		3.2	86.1	9.3	1.5		1.9	0.9	0	97.2		2.3	93.3	3.7	0.7		
Total %	0.4	1.1	1.6	1	4.1	1.3	35.6	3.8	0.6	41.4	0	0	0	2.2	2.3	1.2	48.8	1.9	0.3	52.3	
PCs and Peds						1603										2212					
% PCs and Peds	94.7	98	94.6	100	96.8	98.4	96.6	95.5	78.6	96.3	50	0	0	98.1	96.3	92.9	97.4	100	93.8	97.3	96.9
Heavy Vehicles																					
% Heavy Vehicles	5.3	2	1.4	0	1.6	1.6	3	3.4	0	3	50	100	0	0	1.9	7.1	2.2	0	0	2.2	2.5
Bicycles	0	0	3	0	3	0	6	2	6	14	0	0	0	2	2	0	10	0	1	11	30
% Bicycles	0	0	4.1	0	1.6	0	0.4	1.1	21.4	0.7	0	0	0	1.9	1.9	0	0.4	0	6.2	0.5	0.6

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West				
	Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total		Right	Thru	Peds	App. Total	

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	1	2	3	6	12	1	94	8	9	112	0	0	0	4	4	5	132	4	4	145	273
05:00 PM	2	4	7	0	13	4	105	12	1	122	0	0	0	5	5	10	162	7	1	180	320
05:15 PM	0	7	6	1	14	4	105	15	0	124	0	0	0	10	10	4	170	6	0	180	328
05:30 PM	1	2	8	2	13	2	93	13	3	111	0	0	0	7	7	4	181	10	0	195	326
Total Volume	4	15	24	9	52	11	397	48	13	469	0	0	0	26	26	23	645	27	5	700	1247
% App. Total	7.7	28.8	46.2	17.3		2.3	84.6	10.2	2.8		0	0	0	100		3.3	92.1	3.9	0.7		
PHF	.500	.536	.750	.375	.929	.688	.945	.800	.361	.946	.000	.000	.000	.650	.650	.575	.891	.675	.313	.897	.950



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Client: Tighe & Bond

File Name : 20. PM Peak - Belmont @ Daytona & Holywood

Site Code : 20

Start Date : 5/7/2015

Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	10
02:45 PM	0	0	1	0	1	0	9	1	0	10	0	0	0	0	0	0	1	6	0	7	18
Total	1	0	1	0	2	0	25	1	0	26	0	0	0	0	0	1	16	0	0	17	45
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
03:15 PM	0	1	0	0	1	0	5	0	0	5	1	0	0	0	1	0	4	0	0	4	11
03:30 PM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	3	0	0	3	7
03:45 PM	0	0	0	0	0	0	4	4	0	8	0	0	0	0	0	0	4	0	0	4	12
Total	0	1	0	0	1	0	13	5	0	18	1	0	0	0	1	0	16	0	0	16	36
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:15 PM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	1	2	0	0	3	7
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	5
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	1	7	0	0	8	0	1	0	0	1	2	10	0	0	12	21
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	8	0	0	9	14
Grand Total	1	1	1	0	3	1	50	6	0	57	1	1	0	0	2	4	50	0	0	54	116
Apprch %	33.3	33.3	33.3	0		1.8	87.7	10.5	0		50	50	0	0		7.4	92.6	0	0		
Total %	0.9	0.9	0.9	0	2.6	0.9	43.1	5.2	0	49.1	0.9	0.9	0	0	1.7	3.4	43.1	0	0	46.6	

Start Time	Daytona From North					Belmont From East					Holywood From South					Belmont From West				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	4	0	0	4	14
02:30 PM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	10
02:45 PM	0	0	1	0	1	0	9	1	0	10	0	0	0	0	0	1	6	0	0	7	18
03:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
Total Volume	1	0	1	0	2	0	25	1	0	26	0	0	0	0	0	1	19	0	0	20	48
% App. Total	50	0	50	0		0	96.2	3.8	0		0	0	0	0		5	95	0	0		
PHF	.250	.000	.250	.000	.500	.000	.625	.250	.000	.650	.000	.000	.000	.000	.000	.250	.792	.000	.000	.714	.667

PVTA Bus Route Schedules and Maps

CHICOPEE BIG Y	CHICOPEE CENTER	SPRINGFIELD BUS TERMINAL	THE "X"	RIVERBEND MEDICAL CENTER	CANON CIRCLE	ALLEN & COOLEY/ FIVE TOWN PLAZA	THE "X"	SPRINGFIELD BUS TERMINAL	CHICOPEE CENTER	CHICOPEE BIG Y
7	6	1	2	3	4	5	2	1	6	7
--	--	--	--	--	--	--	--	--	6:00	6:18
--	--	--	--	--	--	5:35	5:45	6:10	6:25	6:43
--	--	--	--	--	--	--	--	6:25	6:45	7:03
--	--	6:15	6:25	--	--	--	6:30	6:55	7:15	7:38
--	--	6:00	6:10 S	--	6:30	6:35	6:45	7:15	7:35	7:58
--	--	6:25	6:35	6:50	--	7:00	7:10	7:40	8:00	8:23
--	6:25	6:45	6:55 S	--	7:15	7:20	7:30	8:00	8:20	8:43
6:30	6:40	7:00	7:15 S	--	7:35	7:40	7:50	8:20	8:35 G	--
6:45	7:00	7:20	7:35	7:45	--	8:00	8:10	8:40	8:55	9:18
7:05	7:20	7:40	7:55 S	--	8:15	8:20	8:30	9:00	9:15	--
7:25	7:40	8:00	8:15	8:25	--	8:40	8:50	9:20	9:35	9:58
7:45	8:00	8:20	8:35	8:45	--	9:00	9:10	9:40	9:55	--
8:05	8:20	8:40	8:55 S	--	9:15	9:20	9:30	10:00	10:15	10:38
8:25	8:40	9:00	9:15	9:25	--	9:40	9:50	10:20	10:35	10:58
8:45	9:00	9:20	9:35 S	--	9:55	10:00	10:10	10:40	10:55	11:18
--	9:20	9:40	9:55	10:05	--	10:20	10:30	11:00	11:15	11:38
9:25	9:40	10:00	10:15 S	--	10:35	10:40	10:50	11:20	11:35 G	--
--	10:00	10:20	10:35	10:45	--	11:00	11:10	11:40	11:55	12:18
10:05	10:20	10:40	10:55 S	--	11:15	11:20	11:30	12:00	12:15	--
--	10:40	11:00	11:15	11:25	--	11:40	11:50	12:20	12:35	12:58
10:45	11:00	11:20	11:35 S	--	11:55	12:00	12:10	12:40	12:55	--
11:05	11:20	11:40	11:55	12:05	--	12:20	12:30	1:00	1:15	1:38
11:25	11:40	12:00	12:15 S	--	12:35	12:40	12:50	1:20	1:35	--
11:45	12:00	12:20	12:35	12:45	--	1:00	1:10	1:40	1:55	2:18
--	12:20	12:40	12:55 S	--	1:15	1:20	1:30	2:00	2:15	--
12:25	12:40	1:00	1:15	1:25	--	1:40	1:50	2:20	2:35	2:58
--	1:00	1:20	1:35 S	--	1:55	2:00	2:10	2:40	2:55	--
1:05	1:20	1:40	1:55	2:05	--	2:20	2:30	3:00	3:15	3:38 G
--	1:40	2:00	2:15 S	--	2:35	2:40	2:50	3:20	3:35	3:58
1:45	2:00	2:20	2:35	2:45	--	3:00	3:10	3:40	3:55	--
--	2:20	2:40	2:55 S	--	3:15	3:20	3:30	4:00	4:15	4:38
2:25	2:40	3:00	3:15	3:25	--	3:40	3:50	4:20	4:35	--
--	3:00	3:20	3:35 S	--	3:55	4:00	4:10	4:40	4:55	5:18
3:05	3:20	3:40	3:55	4:05	--	4:20	4:30	5:00	5:15	5:38
3:25	3:40	4:00	4:15 S	--	4:35	4:40	4:50	5:20	5:35	5:58
--	4:00	4:20	4:35	4:45	--	5:00	5:10	5:40	5:55	6:18
4:05	4:20	4:40	4:55 S	--	5:15	5:20	5:30	6:00	6:15	6:38
--	4:40	5:00	5:15	5:25	--	5:40	5:50	6:20	6:35	6:58
4:45	5:00	5:20	5:35 S	--	5:55	6:00	6:10	6:35	6:50 G	--
5:20	5:35	5:50	6:05	6:15	--	6:20	6:30	6:55	7:10	7:23
5:45	6:00	6:15	6:30 S	--	6:50	6:55	7:05	7:30 G	--	--
6:10	6:25	6:40	6:50 S	--	7:10	7:15	7:25	7:45	8:00	8:13
6:20	6:35	6:50 G	--	--	--	--	--	--	--	--
6:40	6:55	7:10	7:20 S	--	7:40	7:45	7:55	8:15	8:30	8:43
7:05	7:20	7:35	7:45 S	--	8:05	8:10	8:20	8:40	8:55	9:08
7:40	7:55	8:10	8:20 S	--	8:40	8:45	8:55	9:10	9:25	9:38
8:20	8:35	8:50	9:00 S	--	9:15	9:20	9:30	9:45	9:58 G	--
8:45	8:55	9:10	9:25	--	9:40	9:45	9:55	10:10 G	--	--
9:10	9:20	9:30 G	--	--	--	--	--	--	--	--
9:40	9:50	10:05 G	--	--	--	--	--	--	--	--

SATURDAY

--	--	6:00	6:10	--	6:25	6:30	6:40	7:00	7:10	7:25
--	--	--	--	--	--	--	--	6:50	7:05	--
--	--	6:50	7:00 S	--	7:15	7:25	7:35	8:00	8:15	8:28
--	7:05	7:20	7:30	--	7:45	7:55	8:05	8:30	8:45	8:58
7:25	7:40	7:55	8:05 S	--	8:20	8:25	8:35	9:00	9:15	9:28
--	--	8:30	8:40	8:55	--	9:00	9:10	9:30	9:45	9:58
8:30	8:45	9:00	9:10 S	--	9:27	9:30	9:40	10:00	10:15	10:28
--	--	--	--	--	--	--	--	10:30	10:45	10:58
9:00	9:15	9:30	9:40	10:00	--	10:15	10:25	10:55	11:10	11:28
9:30	9:45	10:00	10:10 S	--	10:30	10:45	10:55	11:25	11:40	11:58
10:00	10:15	10:30	10:40	11:00	--	11:15	11:25	11:55	12:10	12:28
10:30	10:45	11:00	11:10 S	--	11:30	11:45	11:55	12:25	12:40	12:58
11:00	11:15	11:30	11:40	12:00	--	12:15	12:25	12:55	1:10	1:28
11:30	11:45	12:00	12:10 S	--	12:30	12:45	12:55	1:25	1:40	1:58
12:00	12:15	12:30	12:40	1:00	--	1:15	1:25	1:55	2:10	2:28
12:30	12:45	1:00	1:10 S	--	1:30	1:45	1:55	2:25	2:40	2:58
1:00	1:15	1:30	1:40	2:00	--	2:15	2:25	2:55	3:10	3:28
1:30	1:45	2:00	2:10 S	--	2:30	2:45	2:55	3:25	3:40	3:58
2:00	2:15	2:30	2:40 S	--	3:00	3:15	3:25	3:55	4:10	4:28
2:30	2:45	3:00	3:10 S	--	3:30	3:45	3:55	4:25	4:40	4:58
3:00	3:15	3:30	3:40 S	--	4:00	4:15	4:25	4:55	5:10	5:28
3:30	3:45	4:00	4:10 S	--	4:30	4:45	4:55	5:25	5:40	5:58
4:00	4:15	4:30	4:40 S	--	5:00	5:15	5:25	5:58 G	--	--
4:30	4:45	5:00	5:10	--	--	--	--	--	--	--
5:00	5:15	5:30	5:40 S	--	5:57	6:00	6:10	6:28 G	--	--
--	--	--	--	--	--	5:45	5:55	6:25	6:40	6:58
5:30	5:45	5:58 G	--	--	--	--	--	--	--	--
6:00	6:15	6:30	6:40 S	--	6:57	7:00	7:10	7:30	7:45	7:58
7:00	7:15	7:30	7:40	--	7:57	8:00	8:10	8:30	8:45	8:58
8:00	8:15	8:30	8:40 S	--	8:57	9:00	9:10	9:28 G	--	--
9:00	9:15	9:28 G	--	--	--	--	--	--	--	--

SUNDAY

--	--	--	--	--	--	--	--	7:00	7:10	7:28
--	--	7:00	7:10	--	7:25	7:40	7:50	8:15	8:25	8:43
7:45	8:00	8:15 G	--	--	--	--	--	9:00	9:10	9:28
--	--	8:30	8:40 S	--	8:55	9:10	9:20	9:45	9:55	10:13
8:45	9:00	9:15	9:25 S	--	9:40	9:55	10:05	10:30	10:40	10:58
9:30	9:45	10:00	10:10 S	--	10:25	10:40	10:50	11:15	11:25	11:43
10:15	10:30	10:45	10:55 S	--	11:10	11:25	11:35	12:00	12:10	12:28
11:00	11:15	11:30	11:40 S	--	11:55	12:10	12:20	12:45	12:55	1:13
11:45	12:00	12:15	12:25 S	--	12:40	12:55	1:05	1:30	1:40	1:58
12:30	12:45	1:00	1:10 S	--	1:25	1:40	1:50	2:15	2:25	2:43
1:15	1:30	1:45	1:55 S	--	2:10	2:25	2:35	3:00	3:10	3:28
2:00	2:15	2:30	2:40 S	--	2:55	3:10	3:20	3:45	3:55	4:13
2:45	3:00	3:15	3:25 S	--	3:40	3:55	4:05	4:30	4:40	4:58
3:30	3:45	4:00	4:10 S	--	4:25	4:40	4:50	5:15	5:25	5:43
4:15	4:30	4:45	4:55 S	--	5:10	5:25	5:35	6:00	6:10	6:28
5:00	5:15	5:30	5:40 S	--	5:55	6:10	6:20	6:45	6:55	7:13
5:45	6:00	6:15	6:25 S	--	6:40	6:55	7:05	7:30	7:40	7:58 G
6:30	6:45	7:00	7:10 S	--	7:20	7:25	7:35	8:05 G	--	--
7:15	7:30	7:45	7:55	--	--	--	7:55	8:20 G	--	--

G - to Garage at 2840 Main Street, Springfield
S - serves Stop & Shop supermarket outbound at Allen & Cooley.

* Bus services Chicopee Wal-Mart before Chicopee Big Y.

NO SERVICE ON:
Thanksgiving & Christmas Day
SUNDAY SERVICE ON:
New Years Day Martin Luther King Day Memorial Day Independence Day Labor Day
SATURDAY SERVICE ON:
Columbus Day, and Veteran's Day

**HELPER
T1**

ADDITIONAL WEEKDAY MORNING SERVICE WHEN SCHOOL IN SESSION

SUMNER AVE. - STATE STREET

Effective
August 24
2014

SPFLD. BUS TERMINAL	THE " X "	STATE & MAIN	STATE & WALNUT	MASON SQUARE	STATE & INSURANCE	STATE & BLUNT PK.	BAY & ROOSEVELT
6:28	6:38	6:53	6:58	—	—	—	7:08
6:33	6:43	6:58	7:01	7:02	7:07	7:10	7:15

**HELPER
T1**

ADDITIONAL WEEKDAY MORNING SERVICE WHEN SCHOOL IN SESSION

MAIN ST.- STATE STREET

Effective
August 24
2014

MAIN & WALTER	SPFLD. BUS TERMINAL	STATE & MAIN	STATE & WALNUT	MASON SQUARE	STATE & INSURANCE	STATE & BLUNT PK.
6:46	6:58	7:03	7:06	7:07	7:12	7:15

**HELPER
T1**

ADDITIONAL WEEKDAY AFTERNOON SERVICE WHEN SCHOOL IN SESSION

STATE STREET-SUMNER AVE./THE X

Effective
August 24
2014

STATE & BLUNT PK.	STATE & INSURANCE	MASON SQUARE	STATE & WALNUT	STATE & MAIN	THE " X "
2:20	2:28	2:33	2:34	2:37	2:53
—	—	—	3:05	3:08	3:23

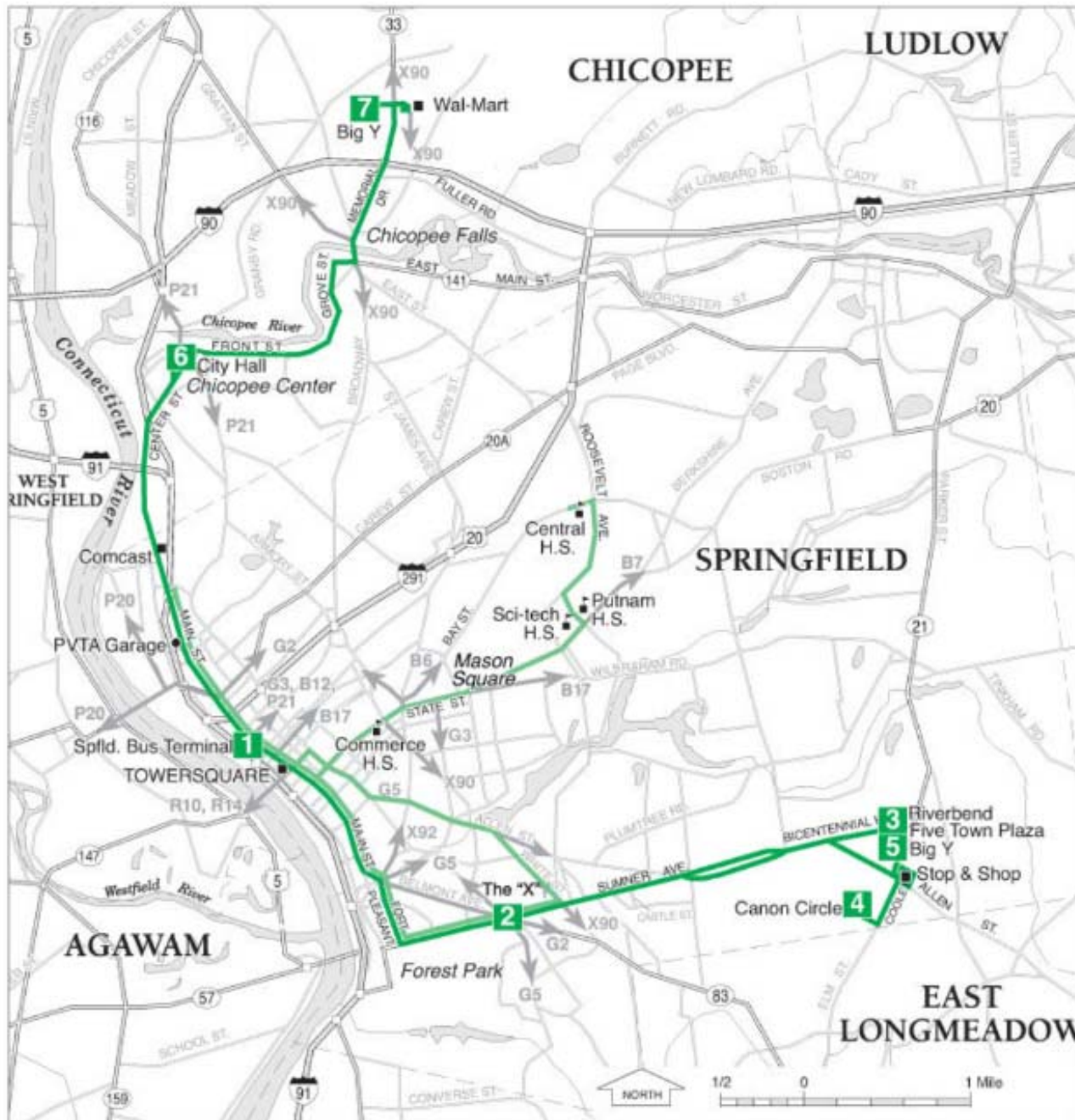
**HELPER
T1**

ADDITIONAL WEEKDAY AFTERNOON SERVICE WHEN SCHOOL IN SESSION

THE X - SUMNER AVE./DICKINSON

Effective
August 24
2014

BAY & ROOSEVELT	STATE & BLUNT PK.	STATE & INSURANCE	MASON SQUARE	STATE & WALNUT	STATE & MAIN	THE " X "	SPFLD. BUS TERMINAL
2:20	2:25	2:28	2:33	2:34	2:36	2:51	3:10



- Route GREEN 1
- Helper Service
- ← Connecting Route

CAREW-E. SPRINGFIELD/BELMONT-DWIGHT RD.

Effective August 24, 2014

MEMORIAL INDUSTRIAL PARK	MERCY HOSPITAL	SPRINGFIELD BUS TERMINAL	THE "X"	BENTON VIA DWIGHT RD.	BIG Y E. LONG.	THE "X"	SPRINGFIELD BUS TERMINAL	MERCY HOSPITAL	MEMORIAL INDUSTRIAL PARK
6	5	1	2	3	4	2	1	5	6
--	--	--	--	--	5:00	5:06	5:30 C	--	5:58
--	--	--	--	--	--	--	5:50	--	6:18
--	--	--	--	--	--	--	6:10 C	--	6:38
--	--	5:30	5:40 Y	5:58	--	6:06	6:30 C	6:35	6:58
--	--	5:45 IP	5:55	6:08	6:20	6:26	6:50 C	--	7:18
5:45	--	6:15 IP	6:25	6:38	--	6:46	7:10	7:15	7:38
6:00	--	6:30	6:40	--	7:00	7:06	7:30 C	--	7:58
6:20	--	6:50	7:00	--	7:20	7:26	7:50	--	8:18
6:40	6:55	7:10	7:20	7:38	--	7:46	8:10 S	8:15	8:38
7:00	--	7:30	7:40	--	8:00	8:06	8:30 C	--	8:58
7:20	--	7:50	8:00	8:18	--	8:26	8:50 C	--	9:18
7:40	7:55	8:10	8:20	--	8:40	8:46	9:10	9:15	9:38
8:00	--	8:30	8:40	--	9:00	9:06	9:30 C	--	9:58
8:20	--	8:50	9:00	9:18	--	9:26	9:50	--	10:18
8:40	8:55	9:10	9:20	--	9:40	9:46	10:10	10:15	10:38
9:00	9:15	9:30	9:40	--	10:00	10:06	10:30 C	--	10:58
9:20	--	9:50	10:00	--	10:20	10:26	10:50	--	11:18
9:40	9:55	10:10	10:20	10:38	--	10:46	11:10	11:15	11:38
10:00	--	10:30	10:40	--	11:00	11:06	11:30	--	11:58
10:20	--	10:50	11:00	--	11:20	11:26	11:50 C	--	12:18
10:40	10:55	11:10	11:20	11:38	--	11:46	12:10	12:15	12:38
11:00	--	11:30	11:40	--	12:00	12:06	12:30 C	--	1:08
11:20	--	11:50	12:00	--	12:20	12:26	12:50	--	1:28
--	--	--	--	--	--	--	1:10	1:15	1:38
11:40	11:55	12:10	12:20	12:43	--	12:54	1:20 C	--	1:58
12:00	--	12:30	12:40	--	1:00	1:06	1:30 G	--	--
12:20	--	12:50	1:00	--	1:20	1:26	1:50 C	--	2:28
--	--	--	--	--	--	--	2:10 S	2:15	2:38
12:40	12:55	1:10	1:20	1:43	--	1:54	2:20 C	--	2:58
1:10	--	1:40	1:50	--	2:10	2:16	2:40 C	--	3:18
1:30	--	2:00	2:10	--	2:30	2:36	3:00	3:05	3:38
1:40	1:55	2:10 IP	2:20	2:43	--	2:54	3:20	--	3:58
2:00	--	2:30	2:40	--	3:00	3:06	3:30 C	--	4:08
2:30	--	3:00	3:10	--	3:30	3:36	4:00	4:05	4:38
2:40	2:55	3:10	3:20	3:43	--	3:54	4:20 C	--	4:58
3:00	--	3:30	3:40	--	4:00	4:06	4:30 G	--	--
3:20	--	3:50	4:00	--	4:30	4:36	5:00	--	5:28
3:40	3:55	4:10	4:20	4:38	--	4:44	5:10	5:15	5:38
4:00	--	4:30	4:40	--	5:00	5:06	5:30	--	5:58
4:20	--	4:50	5:00	5:20	--	5:26	5:50	--	6:18
4:40	4:55	5:10	5:20	--	5:40	5:46	6:10	6:15	6:38
5:00	--	5:30	5:40	--	6:00	6:06	6:30	--	6:58
5:30	--	6:00	6:10 Y	6:38	--	6:48	7:05 G	--	--
5:40	5:55	6:10 G	--	--	--	--	--	--	--
6:00	--	6:25	6:35	--	6:50	6:55	7:15	--	7:33
6:20	--	6:45 G	--	--	--	--	--	--	--
6:40	6:55	7:10 G	--	--	--	--	--	--	--
--	--	7:00	7:10	--	7:25	7:30	7:55	8:00	8:23
7:00	--	7:25 G	--	--	--	--	--	--	--
7:35	7:45	7:55 G	--	--	--	--	--	--	--
--	--	8:00	8:10	--	8:25	8:30	8:50 R	--	9:08
8:25	--	8:50	9:00 Y	9:20	--	9:28	9:50	9:55	10:18
9:10	--	9:30	9:40	--	9:50	9:55	10:17 G	--	--

CAREW-E. SPRINGFIELD/BELMONT-DWIGHT RD.

Effective August 24, 2014

MEMORIAL INDUSTRIAL PARK	MERCY HOSPITAL	SPRINGFIELD BUS TERMINAL	THE "X"	BENTON VIA DWIGHT RD.	BIG Y E. LONG.	THE "X"	SPRINGFIELD BUS TERMINAL	MERCY HOSPITAL	MEMORIAL INDUSTRIAL PARK
6	5	1	2	3	4	2	1	5	6
--	--	5:37	5:45	6:00	--	6:06	6:30	6:35	6:58
--	--	6:12	6:22	--	6:30	6:36	7:00	--	7:28
6:00	--	6:30	6:40	--	7:00	7:06	7:30	7:35	7:58
6:30	--	7:00	7:10	7:30	--	7:36	8:00	8:05	8:28
7:00	7:15	7:30	7:40	--	8:00	8:06	8:30	8:35	8:58
7:30	--	8:00	8:10	--	8:30	8:36	9:00	--	9:28
8:00	8:15	8:30	8:40	9:00	--	9:06	9:30	9:35	9:58
8:30	8:45	9:00	9:10	--	9:30	9:36	10:00	10:05	10:28
9:00	9:15	9:30	9:40	--	10:00	10:06	10:30	10:35	10:58
9:30	9:45	10:00	10:10	10:30	--	10:36	11:00	11:05	11:28
10:00	10:15	10:30	10:40	--	11:00	11:06	11:30	11:35	11:58
10:30	--	11:00	11:10	--	11:30	11:36	12:00	--	12:28
11:00	11:15	11:30	11:40	12:00	--	12:06	12:30	12:35	12:58
11:30	11:45	12:00	12:10	--	12:30	12:36	1:00	--	1:28
12:00	12:15	12:30	12:40	--	1:00	1:06	1:30	1:35	1:58
12:30	12:45	1:00	1:10	1:30	--	1:36	2:00	2:05	2:28
1:00	1:15	1:30	1:40	--	2:00	2:06	2:30	2:35	2:58
1:30	--	2:00	2:10	--	2:30	2:36	3:00	--	3:28
2:00	2:15	2:30	2:40	3:00	--	3:06	3:30	3:35	3:58
2:30	--	3:00	3:10	--	3:30	3:36	4:00	--	4:28
3:00	3:15	3:30	3:40	--	4:00	4:06	4:30	4:35	4:58
3:30	3:45	4:00	4:10	4:30	--	4:36	5:00	--	5:28
4:00	4:15	4:30	4:40	--	5:00	5:06	5:30	--	5:58
4:30	4:45	5:00	5:10	--	5:30	5:36	6:00 G	--	--
5:00	5:15	5:30	5:40	6:00	--	6:06	6:30	6:35	6:58
5:30	5:45	6:00 G	--	--	--	--	--	--	--
6:00	6:15	6:30	6:40	--	7:00	7:06	7:30	7:35	7:58
7:00	--	7:30	7:40	--	8:00	8:06	8:30	--	8:58
8:00	8:15	8:30	8:40	8:55	8:50	9:00	9:20 G	--	--
9:00	--	9:30 G	--	--	--	--	--	--	--

C - Serves Cottage Street
G - To Garage at 2840 Main Street, Springfield
R - Serves Cottage Street by request only

S - Service to Cadwell Drive (AIC Career Learning Center)
IP - Serves East Longmeadow Industrial Park
Y - Serves Big Y at 5:50 am, 6:32 pm and 9:10 pm before continuing to Benton Drive at 5:58 am, 6:38 pm and 9:20 pm

CAREW-E. SPRINGFIELD/BELMONT-E. LONG BIG Y

Effective August 24, 2014

MEMORIAL INDUSTRIAL PARK	MERCY HOSPITAL	SPRINGFIELD BUS TERMINAL	THE "X"	BIG Y E. LONG.	THE "X"	SPRINGFIELD BUS TERMINAL	MERCY HOSPITAL	MEMORIAL INDUSTRIAL PARK
6	5	1	2	4	2	1	5	6
--	--	--	--	--	--	9:00	9:05	9:28
--	--	9:00	9:10	9:30	9:40	10:00	10:05	10:28
9:30	9:45	10:00	10:10	10:30	10:40	11:00	11:05	11:28
10:30	10:45	11:00	11:10	11:30	11:40	12:00	12:05	12:28
11:30	11:45	12:00	12:10	12:30	12:40	1:00	1:05	1:28
12:30	12:45	1:00	1:10	1:30	1:40	2:00	2:05	2:28
1:30	1:45	2:00	2:10	2:30	2:40	3:00	3:05	3:28
2:30	2:45	3:00	3:10	3:30	3:40	4:00	4:05	4:28
3:30	3:45	4:00	4:10	4:30	4:40	5:00	5:05	5:28
4:30	4:45	5:00	5:10	5:30	5:40	6:00	6:05	6:28
5:30	5:45	6:00	6:10	6:30	6:40	7:00 G	--	--
6:30	6:45	7:00 G	--	--	--	--	--	--

**HELPER
T2****ADDITIONAL WEEKDAY MORNING SERVICE WHEN SCHOOL IN SESSION
CAREW/ E. SPRINGFIELD - STATE ST.**Effective
August 24,
2014

MAIN & WALTER	CAREW & MAIN	ST. JAMES & TAPLEY	BAY & ROOSEVELT	STATE & BLUNT PK.	STATE & INSURANCE	MASON SQUARE	STATE & WALNUT
—	6:46	6:56	7:01	7:06	7:09	7:14	7:15
6:40	6:46	6:56	7:01	7:06	7:09	7:14	7:15

**HELPER
T2****ADDITIONAL WEEKDAY MORNING SERVICE WHEN SCHOOL IN SESSION
LOCUST/DICKINSON/BELMONT-STATE**Effective
August 24,
2014

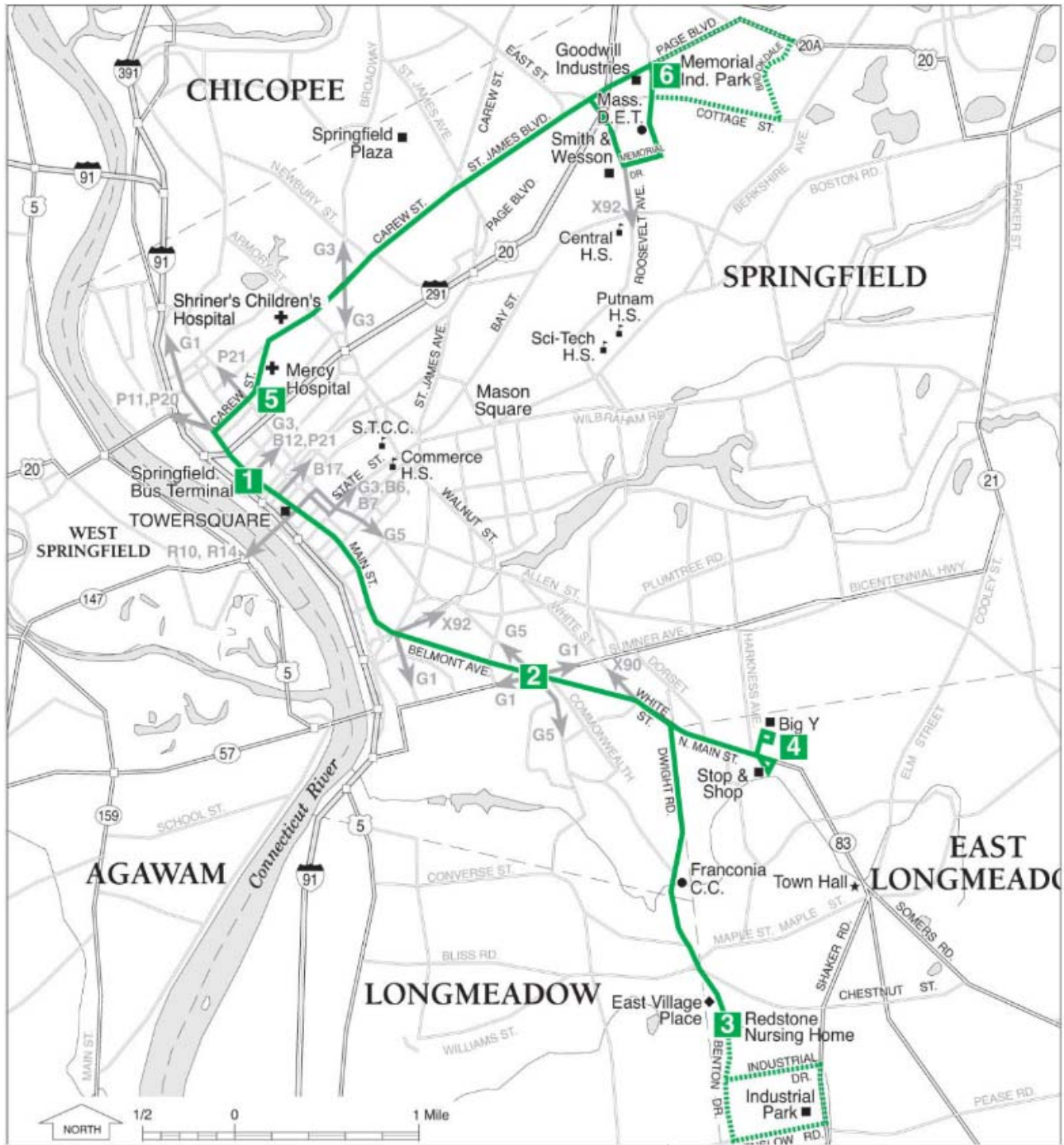
SPFLD. BUS TERMINAL	THE "X"	STATE & MAIN	STATE & WALNUT	MASON SQUARE	STATE & INSURANCE	STATE & BLUNT PK.	BAY & ROOSEVELT
6:25	6:35	6:50	6:53	6:54	6:59	7:02	7:07
6:30	6:40	6:55	6:59	—	—	—	7:10

**HELPER
T2****ADDITIONAL WEEKDAY AFTERNOON SERVICE WHEN SCHOOL IN SESSION
CAREW/ E. SPRINGFIELD - PLAINFIELD**Effective
August 24,
2014

BAY & ROOSEVELT	ST. JAMES & TAPLEY	CAREW & MAIN	PLAINFIELD & WASON
2:20	2:25	2:35	2:45

**HELPER
T2****ADDITIONAL WEEKDAY AFTERNOON SERVICE WHEN SCHOOL IN SESSION
BELMONT - THE "X"**Effective
August 24,
2014

BAY & ROOSEVELT	STATE & BLUNT PK.	STATE & INSURANCE	MASON SQUARE	STATE & WALNUT	STATE & MAIN	THE "X"	SPFLD. BUS TERMINAL
2:20	2:25	2:28	2:33	2:34	2:36	2:51	3:10
—	2:20	2:23	2:28	2:29	2:32	2:48	3:13



**GREEN
5**

WEEKDAY

DICKINSON - JEWISH HOME/LONGMEADOW SPRINGFIELD BUS TERMINAL

Effective
March 15,
2015

SPRINGFIELD BUS TERMINAL	THE "X"	JEWISH HOME	LONGMEADOW & WILLIAMS	MASS MUTUAL ENFIELD, CT	LONGMEADOW & WILLIAMS	JEWISH HOME	THE "X"	SPRINGFIELD BUS TERMINAL
1	2	3	4	5	4	3	2	1
6:15	6:25	6:40	6:45	6:50 C	6:55	7:15	7:20	7:43
7:20 R	7:30	—	7:45	7:55 C	8:00 D	—	8:10	8:30 G
7:45	7:55	8:15	—	—	—	8:15	8:20	8:43
8:45	8:55	9:15	9:20	9:25	9:30	9:45	9:50	10:13
9:30	9:40	10:00	—	—	—	10:00	10:05	10:28 G
10:15	10:25	10:45	—	—	—	10:45	10:50	11:13
11:15	11:25	11:45	11:50	11:55	12:00	12:15	12:20	12:41
12:00	12:10	12:30	—	—	—	12:30	12:35	12:58 G
12:45	12:55	1:15	—	—	—	1:15	1:20	1:43
1:45	1:55	2:15	—	—	—	2:15	2:20	2:43
2:45	2:55	3:10	3:15	3:25 C	3:30	3:45	3:50	4:13
3:45	3:55	4:15	4:20	4:35 C	4:40	4:50	4:55	5:18
4:15	4:25	4:45	4:50	5:00 C	5:05	5:15	5:20	5:43 G
5:00	5:10	5:30	—	—	—	5:35	5:40	6:03
5:35	5:45	6:05	6:10	6:15 C	6:20	6:25	6:30	6:50
6:15	6:25	6:45	—	—	—	6:50	6:55	7:18 G
7:00	7:10	7:30	—	—	—	7:30	7:35	7:55 G

**GREEN
5**

SATURDAY

DICKINSON - JEWISH HOME/LONGMEADOW SPRINGFIELD BUS TERMINAL

Effective
March 15,
2015

SPRINGFIELD BUS TERMINAL	THE "X"	JEWISH HOME	LONGMEADOW & WILLIAMS	MASS MUTUAL ENFIELD, CT	LONGMEADOW & WILLIAMS	JEWISH HOME	THE "X"	SPRINGFIELD BUS TERMINAL
1	2	3	4	5	4	3	2	1
7:30	7:40	8:00	—	—	—	8:00	8:05	8:30
8:30	8:40	9:00	9:05	9:10	9:15	9:30	9:35	10:00
10:00	10:10	10:30	10:35	10:40	10:45	11:00	11:05	11:30
11:30	11:40	12:00	12:05	12:10	12:15	12:30	12:35	1:00
1:00	1:10	1:30	—	—	—	1:30	1:35	2:00
2:00	2:10	2:30	2:35	2:40	2:45	3:00	3:05	3:30
3:30	3:40	4:00	4:05	4:10	4:15	4:30	4:35	5:00
5:00	5:10	5:30	5:35	5:40	5:45	6:00	6:05	6:30 G

C - Connects with CT Transit routes 905 & 915 at Mass Mutual. For more information call CT Transit 860-525-9181

D - returns from Longmeadow via Converse and Dickinson

G - to Garage at 2840 Main Street (Main & Hooker), Springfield

R - Service to Jewish Home on request at 7:45 AM

NO SERVICE ON:

Thanksgiving, Christmas Day
New Year's Day, Memorial Day
Martin Luther King Day,
Independence Day, Labor Day

SATURDAY SERVICE ON:

Columbus Day, and Veterans Day

ADDITIONAL WEEKDAY MORNING SERVICE WHEN SCHOOL IN SESSION

**HELPER
T1 & 2**

LOCUST/DICKINSON/SUMNER/ BELMONT-STATE

Effective
March 15,
2015

SPRINGFIELD BUS TERMINAL	THE "X"	DICKINSON STREET	STATE & MAIN	STATE & WALNUT	MASON SQUARE	STATE & INSURANCE	STATE & BLUNT PARK	BAY & ROOSEVELT
6:25	6:35	—	6:50	6:53	6:54	6:59	7:02	7:07
6:33	6:43	6:45	6:58	7:01	7:02	7:07	7:10	7:15
6:30	6:40	—	6:55	6:59	—	—	—	7:10

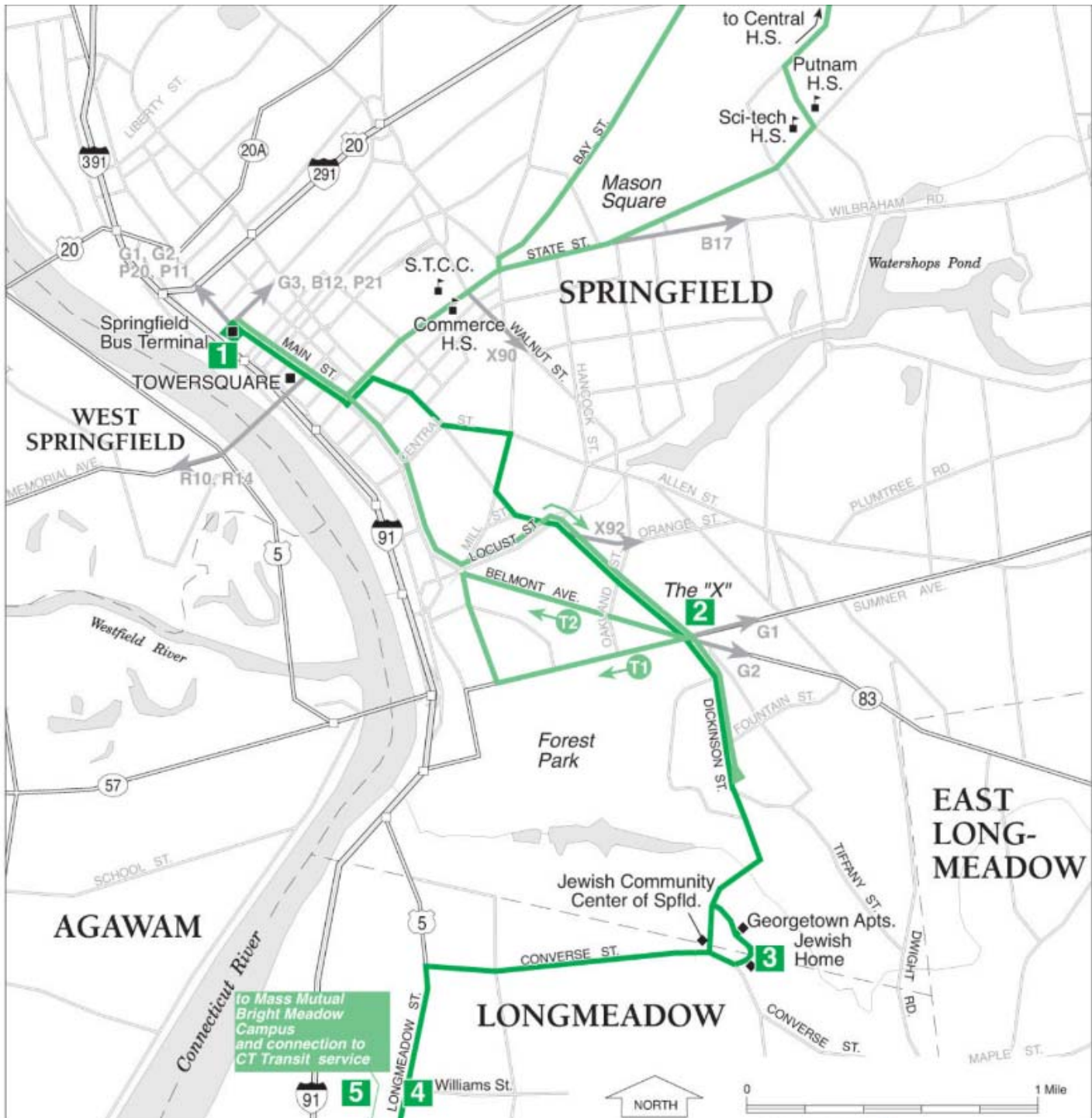
ADDITIONAL WEEKDAY AFTERNOON SERVICE WHEN SCHOOL IN SESSION

**HELPER
T5**

STATE STREET - DICKINSON/THE X

Effective
March 15,
2015

STATE & WALNUT	STATE & MAIN	THE "X"	DICKINSON & COPELAND	SPFLD. BUS TERMINAL
3:05	3:08	3:18	3:23	3:52



-  Route GREEN 5
-  Helper Service
-  Connecting Route

Capacity Analysis Methodology

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).¹ The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. The level-of-service criteria for signalized intersections are shown in Table A-1.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for

¹ *Highway Capacity Manual*. Washington, D.C.: Transportation Research Board, National Research Council, 2000.

unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	Signalized Intersection Criteria	Unsignalized Intersection Criteria
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: *Highway Capacity Manual*. Washington, D.C.: Transportation Research Board, 2000. Pages 16-2 and 17-2.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

Capacity Analysis Worksheets

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	249	216	111	48	47
Average Queue (ft)	64	53	24	3	9
95th Queue (ft)	253	224	78	31	33
Link Distance (ft)	583	583	488	488	1479
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	498	507	301	303	121
Average Queue (ft)	369	355	190	207	47
95th Queue (ft)	567	562	275	288	94
Link Distance (ft)	488	488	547	547	692
Upstream Blk Time (%)	12	8			
Queuing Penalty (veh)	54	37			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	56	22	40
Average Queue (ft)	7	1	15
95th Queue (ft)	33	16	38
Link Distance (ft)	547	547	354
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB	SB
Directions Served	LT	TR	LT	TR	LTR
Maximum Queue (ft)	145	215	108	76	12
Average Queue (ft)	18	55	15	6	0
95th Queue (ft)	86	153	66	46	4
Link Distance (ft)	358	358	160	160	62
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Lenox St/Belmont Ave West & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	T	TR	L	TR	L	R
Maximum Queue (ft)	180	192	206	210	231	110	100	6
Average Queue (ft)	139	168	125	141	136	53	75	1
95th Queue (ft)	194	198	203	214	213	99	102	8
Link Distance (ft)	160	160	168	168	433	433	76	76
Upstream Blk Time (%)	7	21	2	5			34	
Queuing Penalty (veh)	23	73	17	34			30	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	T	T	R>	T	T	R	LTR	LTR>
Maximum Queue (ft)	92	74	131	84	93	5	405	388
Average Queue (ft)	25	17	30	16	17	0	258	176
95th Queue (ft)	67	54	91	55	60	3	429	345
Link Distance (ft)	168	168	168	98	98	98	396	436
Upstream Blk Time (%)			0	0	0		6	3
Queuing Penalty (veh)			0	1	1		22	5
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: Belmont Ave East & Sumner Ave

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	T	T	T	T	LR
Maximum Queue (ft)	114	74	82	83	56	122
Average Queue (ft)	50	19	55	56	16	101
95th Queue (ft)	108	63	68	71	48	109
Link Distance (ft)	98	98	42	42	42	42
Upstream Blk Time (%)	1	0	44	47	4	76
Queuing Penalty (veh)	4	0	136	144	12	274
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	59	6	330	339	17	66
Average Queue (ft)	13	0	189	213	1	18
95th Queue (ft)	47	5	304	324	8	52
Link Distance (ft)	42	42	402	402	56	197
Upstream Blk Time (%)	2	0	0	0		
Queuing Penalty (veh)	7	0	1	1		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	20	23	87	77	133
Average Queue (ft)	1	2	22	11	60
95th Queue (ft)	19	24	91	81	110
Link Distance (ft)	402	402	205	205	309
Upstream Blk Time (%)			1	0	
Queuing Penalty (veh)			4	1	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Daytona St & Sumner Ave

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (ft)	58	14	67
Average Queue (ft)	7	1	29
95th Queue (ft)	36	9	57
Link Distance (ft)	1113	1113	505
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	174	464	442	81	175	158	49	86	48	83
Average Queue (ft)	127	182	164	9	89	60	11	30	16	37
95th Queue (ft)	215	490	442	44	147	120	31	63	40	72
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	40	0			9			0		
Queuing Penalty (veh)	138	0			2			0		

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	81	71	133
Average Queue (ft)	17	25	3	18
95th Queue (ft)	43	56	28	82
Link Distance (ft)	137	220	436	503
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	92	69	18
Average Queue (ft)	33	45	1
95th Queue (ft)	64	74	8
Link Distance (ft)	290	54	396
Upstream Blk Time (%)		7	
Queuing Penalty (veh)		49	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB
Directions Served	TR
Maximum Queue (ft)	353
Average Queue (ft)	70
95th Queue (ft)	238
Link Distance (ft)	410
Upstream Blk Time (%)	1
Queuing Penalty (veh)	7
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	67	73	170
Average Queue (ft)	27	34	11
95th Queue (ft)	57	61	123
Link Distance (ft)	768	266	601
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	368	534	103	65	146
Average Queue (ft)	141	294	32	11	60
95th Queue (ft)	282	573	73	39	118
Link Distance (ft)	925	684	692		511
Upstream Blk Time (%)		2			
Queuing Penalty (veh)		8			
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			1	0	
Queuing Penalty (veh)			0	0	

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	49	87	28	66
Average Queue (ft)	6	11	13	21
95th Queue (ft)	30	94	35	49
Link Distance (ft)	684	563	354	451
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	47	338	128
Average Queue (ft)	4	274	39
95th Queue (ft)	23	430	146
Link Distance (ft)	160	319	1099
Upstream Blk Time (%)		37	
Queuing Penalty (veh)		178	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	181	146	294
Average Queue (ft)	38	93	119
95th Queue (ft)	115	200	301
Link Distance (ft)	319	137	309
Upstream Blk Time (%)		33	9
Queuing Penalty (veh)		178	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Walden St & Belmont Ave










Movement	EB	WB	NB
Directions Served	T	T	LR
Maximum Queue (ft)	16	169	114
Average Queue (ft)	1	92	29
95th Queue (ft)	9	218	80
Link Distance (ft)	137	155	264
Upstream Blk Time (%)		26	
Queuing Penalty (veh)		136	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	119	921	60
Average Queue (ft)	19	422	14
95th Queue (ft)	75	1390	48
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0	13	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			










1: Main Greeting Rd & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	888	8	25	1261	3	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.38	0.38
Hourly flow rate (vph)	987	9	26	1300	8	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.67	
vC, conflicting volume			996		1693	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			996		1037	498
tC, single (s)			4.3		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			96		95	95
cM capacity (veh/h)			655		147	523
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	658	338	459	867	32	
Volume Left	0	0	26	0	8	
Volume Right	0	9	0	0	24	
cSH	1700	1700	655	1700	320	
Volume to Capacity	0.39	0.20	0.04	0.51	0.10	
Queue Length 95th (ft)	0	0	3	0	8	
Control Delay (s)	0.0	0.0	1.1	0.0	17.5	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.4		17.5	
Approach LOS					C	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	128	909	1102	68	49	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frt		1.00	0.99		0.91	
Flt Protected		0.99	1.00		0.98	
Satd. Flow (prot)		3901	3505		1577	
Flt Permitted		0.55	1.00		0.98	
Satd. Flow (perm)		2145	3505		1577	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	144	1021	1238	76	55	106
RTOR Reduction (vph)	0	0	11	0	10	0
Lane Group Flow (vph)	0	1165	1303	0	151	0
Heavy Vehicles (%)	6%	4%	2%	4%	4%	10%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		16.0	16.0		16.0	
Effective Green, g (s)		16.0	16.0		16.0	
Actuated g/C Ratio		0.40	0.40		0.40	
Clearance Time (s)		4.0	4.0		4.0	
Lane Grp Cap (vph)		858	1402		630	
v/s Ratio Prot			0.37		c0.10	
v/s Ratio Perm		c0.54				
v/c Ratio		1.36	0.93		0.24	
Uniform Delay, d1		12.0	11.5		8.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		168.6	12.2		0.9	
Delay (s)		180.6	23.6		8.9	
Level of Service		F	C		A	
Approach Delay (s)		180.6	23.6		8.9	
Approach LOS		F	C		A	
Intersection Summary						
HCM 2000 Control Delay			92.0		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.80			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			80.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Existing
Weekday AM

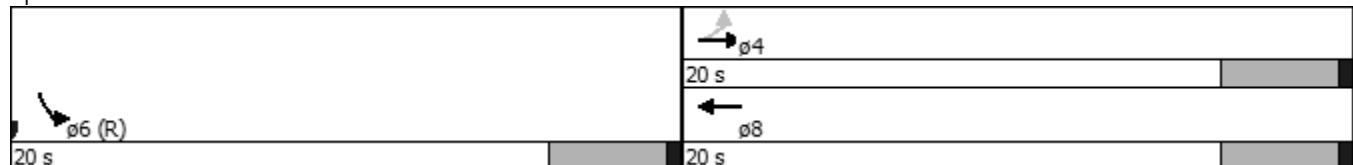


Phase Number	4	6	8
Movement	EBTL	SBL	WBT
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	20	0	20
End Time (s)	0	20	0
Yield/Force Off (s)	36	16	36
Yield/Force Off 170(s)	25	5	25
Local Start Time (s)	20	0	20
Local Yield (s)	36	16	36
Local Yield 170(s)	25	5	25

Intersection Summary










Cycle Length	40
Control Type	Pretimed
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green	

Splits and Phases: 2: Sumner Ave & Oakland St


















3: Sumner Ave & Beaumont St HCM Unsignalized Intersection Capacity Analysis

2015 Existing
Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	9	800	1138	5	0	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	870	1237	5	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	656			
pX, platoon unblocked	0.80				0.88	0.80
vC, conflicting volume	1242				1694	621
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	790				647	8
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	97
cM capacity (veh/h)	667				354	857
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	300	580	825	418	23	
Volume Left	10	0	0	0	0	
Volume Right	0	0	0	5	23	
cSH	667	1700	1700	1700	857	
Volume to Capacity	0.01	0.34	0.49	0.25	0.03	
Queue Length 95th (ft)	1	0	0	0	2	
Control Delay (s)	0.5	0.0	0.0	0.0	9.3	
Lane LOS	A				A	
Approach Delay (s)	0.2		0.0		9.3	
Approach LOS					A	
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			41.6%		ICU Level of Service	A
Analysis Period (min)			15			



















4: Cliftwood St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	686	95	13	1054	8	0	0	0	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.92	0.92	0.92	0.25	0.25	0.25
Hourly flow rate (vph)	3	754	104	14	1133	9	0	0	0	0	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1031			223							
pX, platoon unblocked	0.79			0.94			0.82	0.82	0.94	0.82	0.82	0.79
vC, conflicting volume	1142			858			1411	1983	429	1549	2030	571
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	656			719			736	1430	262	904	1488	0
tC, single (s)	4.1			4.4			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	100	100	100
cM capacity (veh/h)	746			749			250	109	698	190	101	865
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	380	481	581	575	4							
Volume Left	3	0	14	0	0							
Volume Right	0	104	0	9	4							
cSH	746	1700	749	1700	865							
Volume to Capacity	0.00	0.28	0.02	0.34	0.00							
Queue Length 95th (ft)	0	0	1	0	0							
Control Delay (s)	0.1	0.0	0.5	0.0	9.2							
Lane LOS	A		A		A							
Approach Delay (s)	0.1		0.3		9.2							
Approach LOS					A							
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			48.6%		ICU Level of Service				A			
Analysis Period (min)			15									

5: Lenox St/Belmont Ave West & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	679	0	0	830	0	235	79	6	178	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00		1.00
Frt		1.00			1.00		1.00	0.99		1.00		0.85
Flt Protected		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)		3574			3504		1624	1693		1518		1454
Flt Permitted		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)		3574			3504		1624	1693		1518		1454
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	722	0	0	883	0	250	84	6	189	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	1
Lane Group Flow (vph)	0	722	0	0	883	0	250	88	0	189	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	7%	0%	0%
Turn Type		NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		8	8		10		10
Permitted Phases	2	2			6			8				
Actuated Green, G (s)		45.1			45.1		24.0	24.0		26.0		26.0
Effective Green, g (s)		45.1			45.1		24.0	24.0		26.0		26.0
Actuated g/C Ratio		0.39			0.39		0.20	0.20		0.22		0.22
Clearance Time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)		1376			1349		332	346		337		322
v/s Ratio Prot		0.20			c0.25		c0.15	0.05		c0.12		0.00
v/s Ratio Perm												
v/c Ratio		0.52			0.65		0.75	0.25		0.56		0.00
Uniform Delay, d1		27.7			29.6		43.8	39.0		40.5		35.4
Progression Factor		1.00			0.43		1.00	1.00		1.00		1.00
Incremental Delay, d2		0.4			1.0		9.3	0.4		2.1		0.0
Delay (s)		28.1			13.7		53.1	39.4		42.6		35.4
Level of Service		C			B		D	D		D		D
Approach Delay (s)		28.1			13.7			49.5			42.6	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			26.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			117.1				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			61.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

5: Lenox St/Belmont Ave West & Sumner Ave
Timing Report, Sorted By Phase

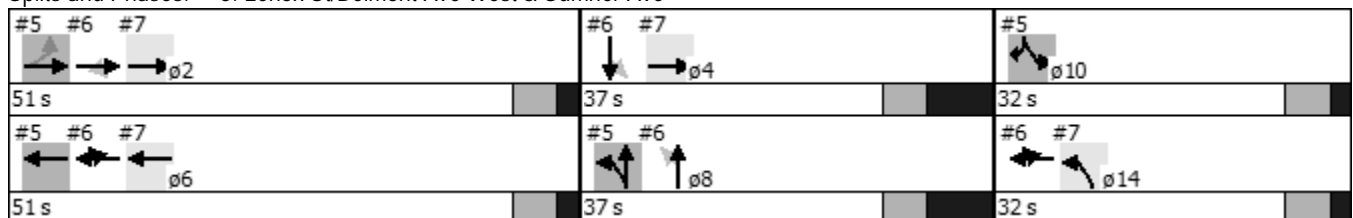
2015 Existing
Weekday AM

Phase Number	2	4	6	8	10	14
Node Number	5	6	5	5	5	6
Movement	EBTL	SBTL	WBT	NBTL	SBL	WBT
Lead/Lag						
Lead-Lag Optimize						
Recall Mode	None	None	None	None	None	None
Maximum Split (s)	51	37	51	37	32	32
Maximum Split (%)	42.5%	30.8%	42.5%	30.8%	26.7%	26.7%
Minimum Split (s)	22	27	10	27	26	26
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	6	2	6	2	2
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	5	5		5	5	5
Flash Dont Walk (s)	11	11		11	11	11
Dual Entry	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	51	0	51	88	88
End Time (s)	51	88	51	88	0	0
Yield/Force Off (s)	45	78	45	78	114	114
Yield/Force Off 170(s)	34	67	45	67	103	103
Local Start Time (s)	0	51	0	51	88	88
Local Yield (s)	45	78	45	78	114	114
Local Yield 170(s)	34	67	45	67	103	103

Intersection Summary

Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 5: Lenox St/Belmont Ave West & Sumner Ave









6: Dickinson St & Belmont Ave & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

Movement	EBT	EBR	EBR2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations	↑↑	↔		↑↑	↔		↕			↕		
Volume (vph)	517	261	85	1238	67	13	229	41	12	40	125	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		10.0			10.0		
Lane Util. Factor	0.95	1.00		0.95	1.00		1.00			1.00		
Frt	1.00	0.85		1.00	0.85		0.98			0.90		
Flt Protected	1.00	1.00		1.00	1.00		1.00			1.00		
Satd. Flow (prot)	3539	1576		3574	1615		1802			1650		
Flt Permitted	1.00	1.00		1.00	1.00		0.98			0.93		
Satd. Flow (perm)	3539	1576		3574	1615		1765			1533		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	550	278	90	1317	71	14	244	44	13	43	133	3
RTOR Reduction (vph)	0	73	0	0	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	550	295	0	1317	71	0	302	0	0	191	0	0
Heavy Vehicles (%)	2%	2%	4%	1%	0%	0%	3%	5%	8%	2%	4%	0%
Turn Type	NA	Perm		NA	Prot	Perm	NA		Perm	NA		
Protected Phases	2			6 14	6 14		8			4		
Permitted Phases		2				8			4			
Actuated Green, G (s)	45.1	45.1		77.1	77.1		24.0			24.0		
Effective Green, g (s)	45.1	45.1		77.1	77.1		24.0			24.0		
Actuated g/C Ratio	0.39	0.39		0.66	0.66		0.20			0.20		
Clearance Time (s)	6.0	6.0					10.0			10.0		
Vehicle Extension (s)	3.0	3.0					3.0			3.0		
Lane Grp Cap (vph)	1363	606		2353	1063		361			314		
v/s Ratio Prot	0.16			c0.37	0.04							
v/s Ratio Perm		0.19					c0.17			0.12		
v/c Ratio	0.40	0.49		0.56	0.07		0.84			0.61		
Uniform Delay, d1	26.2	27.3		10.8	7.1		44.7			42.3		
Progression Factor	0.27	0.16		0.26	0.13		1.00			1.00		
Incremental Delay, d2	0.2	0.5		0.2	0.0		15.4			3.3		
Delay (s)	7.3	5.0		3.1	0.9		60.0			45.6		
Level of Service	A	A		A	A		E			D		
Approach Delay (s)	6.4			2.9			60.0			45.6		
Approach LOS	A			A			E			D		
Intersection Summary												
HCM 2000 Control Delay			13.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			117.1			Sum of lost time (s)				22.0		
Intersection Capacity Utilization			65.8%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

7: Belmont Ave East & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑	↓↓	
Volume (vph)	570	0	0	946	359	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	0.95			0.91	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3112			5085	1791	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3112			5085	1791	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	606	0	0	1006	382	1
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	606	0	0	1006	383	0
Heavy Vehicles (%)	16%	0%	0%	2%	1%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2 4			6	14	
Permitted Phases						
Actuated Green, G (s)	75.1			45.1	26.0	
Effective Green, g (s)	75.1			45.1	26.0	
Actuated g/C Ratio	0.64			0.39	0.22	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)	1995			1958	397	
v/s Ratio Prot	c0.19			c0.20	c0.21	
v/s Ratio Perm						
v/c Ratio	0.30			0.51	0.96	
Uniform Delay, d1	9.4			27.6	45.1	
Progression Factor	0.03			1.00	1.00	
Incremental Delay, d2	0.1			0.2	35.7	
Delay (s)	0.3			27.8	80.8	
Level of Service	A			C	F	
Approach Delay (s)	0.3			27.8	80.8	
Approach LOS	A			C	F	

Intersection Summary

HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	22.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			










8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	556	1	2	910	30	0	1	0	4	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.25	0.25	0.25	0.75	0.75	0.75
Hourly flow rate (vph)	11	598	1	2	989	33	0	4	0	5	3	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		109										
pX, platoon unblocked				0.92			0.92	0.92	0.92	0.92	0.92	
vC, conflicting volume	1022			599			1132	1646	299	1332	1630	511
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1022			383			964	1524	56	1182	1507	511
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	98			100			100	96	100	96	98	98
cM capacity (veh/h)	687			1089			184	107	922	130	110	485
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	310	300	497	527	4	20						
Volume Left	11	0	2	0	0	5						
Volume Right	0	1	0	33	0	12						
cSH	687	1700	1089	1700	107	222						
Volume to Capacity	0.02	0.18	0.00	0.31	0.04	0.09						
Queue Length 95th (ft)	1	0	0	0	3	7						
Control Delay (s)	0.5	0.0	0.1	0.0	39.8	22.8						
Lane LOS	A		A		E	C						
Approach Delay (s)	0.3		0.0		39.8	22.8						
Approach LOS					E	C						
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			38.7%		ICU Level of Service				A			
Analysis Period (min)			15									










9: Ormond St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	612	9	35	884	73	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.99	0.99	0.93	0.93	0.88	0.88
Hourly flow rate (vph)	618	9	38	951	83	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	584					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			627		1173	314
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			459		1043	123
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		60	89
cM capacity (veh/h)			1039		205	851
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	412	215	354	634	180	
Volume Left	0	0	38	0	83	
Volume Right	0	9	0	0	97	
cSH	1700	1700	1039	1700	347	
Volume to Capacity	0.24	0.13	0.04	0.37	0.52	
Queue Length 95th (ft)	0	0	3	0	71	
Control Delay (s)	0.0	0.0	1.3	0.0	26.0	
Lane LOS			A		D	
Approach Delay (s)	0.0		0.4		26.0	
Approach LOS					D	
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			61.9%		ICU Level of Service	B
Analysis Period (min)			15			

10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	654	11	9	917	28	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.93	0.93	0.78	0.78
Hourly flow rate (vph)	696	12	10	986	36	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	841			1212		
pX, platoon unblocked			0.95		0.94	0.95
vC, conflicting volume			707		1214	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			588		862	216
tC, single (s)			4.5		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			99		87	94
cM capacity (veh/h)			815		277	755
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	464	244	338	657	79	
Volume Left	0	0	10	0	36	
Volume Right	0	12	0	0	44	
cSH	1700	1700	815	1700	424	
Volume to Capacity	0.27	0.14	0.01	0.39	0.19	
Queue Length 95th (ft)	0	0	1	0	17	
Control Delay (s)	0.0	0.0	0.4	0.0	15.4	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.1		15.4	
Approach LOS					C	
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			42.0%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	691	4	20	859	122	38	72	18	47	66	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3572		1805	3512		1805	1766		1736	1709	
Flt Permitted	0.25	1.00		0.31	1.00		0.68	1.00		0.69	1.00	
Satd. Flow (perm)	470	3572		581	3512		1286	1766		1269	1709	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	743	4	22	924	131	41	77	19	51	71	54
RTOR Reduction (vph)	0	1	0	0	28	0	0	11	0	0	29	0
Lane Group Flow (vph)	157	746	0	22	1027	0	41	85	0	51	96	0
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	4%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	188	1428		232	1404		514	706		507	683	
v/s Ratio Prot		0.21			0.29			0.05			c0.06	
v/s Ratio Perm	c0.33			0.04			0.03			0.04		
v/c Ratio	0.84	0.52		0.09	0.73		0.08	0.12		0.10	0.14	
Uniform Delay, d1	10.8	9.1		7.5	10.2		7.4	7.6		7.5	7.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.4	1.4		0.8	3.4		0.3	0.3		0.4	0.4	
Delay (s)	44.2	10.5		8.3	13.6		7.7	7.9		7.9	8.1	
Level of Service	D	B		A	B		A	A		A	A	
Approach Delay (s)		16.3			13.5			7.9			8.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday AM

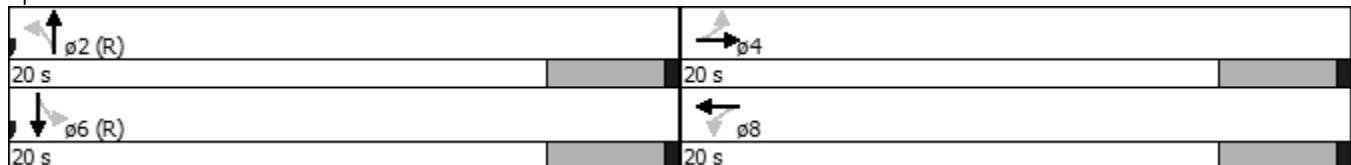


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	36	16	36
Yield/Force Off 170(s)	5	25	5	25
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	36	16	36
Local Yield 170(s)	5	25	5	25

Intersection Summary

Cycle Length 40
Control Type Pretimed
Natural Cycle 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave












12: Dickinson St & Burlington St/Grenada Terr
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	18	3	12	15	69	13	334	11	31	178	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.63	0.63	0.80	0.80	0.80	0.88	0.88	0.88	0.96	0.96	0.96
Hourly flow rate (vph)	6	29	5	15	19	86	15	380	12	32	185	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	766	676	190	689	675	386	195			392		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	650	547	190	562	545	211	195			218		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	92	99	96	95	88	99			97		
cM capacity (veh/h)	273	372	857	337	373	719	1304			1178		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	40	120	407	227								
Volume Left	6	15	15	32								
Volume Right	5	86	12	9								
cSH	376	559	1304	1178								
Volume to Capacity	0.11	0.21	0.01	0.03								
Queue Length 95th (ft)	9	20	1	2								
Control Delay (s)	15.7	13.2	0.4	1.4								
Lane LOS	C	B	A	A								
Approach Delay (s)	15.7	13.2	0.4	1.4								
Approach LOS	C	B										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			37.3%		ICU Level of Service					A		
Analysis Period (min)			15									










13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	105	307	354	203	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	4	125	334	385	245	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked						
vC, conflicting volume	1301	249	253			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1301	249	253			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	97	84	75			
cM capacity (veh/h)	114	785	1318			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	129	718	253			
Volume Left	4	334	0			
Volume Right	125	0	8			
cSH	675	1318	1700			
Volume to Capacity	0.19	0.25	0.15			
Queue Length 95th (ft)	17	25	0			
Control Delay (s)	11.6	5.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.6	5.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			63.4%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	661	20	0	308
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	0	0	718	22	0	371
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked						
vC, conflicting volume	1100	729			740	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1100	729			740	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	237	426			876	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	740	371			
Volume Left	0	0	0			
Volume Right	0	22	0			
cSH	1700	1700	876			
Volume to Capacity	0.00	0.44	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			39.3%	ICU Level of Service		A
Analysis Period (min)			15			

















15: Dickinson St & Trafton Rd/Hollywood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	1	24	7	35	1	584	0	0	257	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.92	0.91	0.91	0.91	0.94	0.94	0.94
Hourly flow rate (vph)	59	0	1	26	8	38	1	642	0	0	273	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)											1056	
pX, platoon unblocked												
vC, conflicting volume	970	929	285	930	940	642	296			642		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	970	929	285	930	940	642	296			642		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	100	89	97	92	100			100		
cM capacity (veh/h)	211	270	759	237	266	472	1277			952		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	72	643	296								
Volume Left	59	26	1	0								
Volume Right	1	38	0	22								
cSH	214	327	1277	952								
Volume to Capacity	0.28	0.22	0.00	0.00								
Queue Length 95th (ft)	28	21	0	0								
Control Delay (s)	28.3	19.1	0.0	0.0								
Lane LOS	D	C	A									
Approach Delay (s)	28.3	19.1	0.0	0.0								
Approach LOS	D	C										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			44.2%		ICU Level of Service				A			
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	39	188	47	85	305	39	12	124	34	28	210	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frt		0.98			0.99			1.00	0.85		0.98		
Flt Protected		0.99			0.99			1.00	1.00		0.99		
Satd. Flow (prot)		1547			1626			1582	1411		1630		
Flt Permitted		0.88			0.85			0.97	1.00		0.96		
Satd. Flow (perm)		1378			1402			1539	1411		1580		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	43	209	52	94	339	43	13	138	38	31	233	34	
RTOR Reduction (vph)	0	13	0	0	6	0	0	0	19	0	8	0	
Lane Group Flow (vph)	0	291	0	0	470	0	0	151	19	0	291	0	
Heavy Vehicles (%)	5%	9%	2%	0%	4%	0%	25%	6%	3%	0%	6%	13%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2		2	6			
Actuated Green, G (s)		20.0			20.0			30.0	30.0		30.0		
Effective Green, g (s)		20.0			20.0			30.0	30.0		30.0		
Actuated g/C Ratio		0.33			0.33			0.50	0.50		0.50		
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		459			467			769	705		790		
v/s Ratio Prot													
v/s Ratio Perm		0.21			0.34			0.10	0.01		0.18		
v/c Ratio		0.63			1.01			0.20	0.03		0.37		
Uniform Delay, d1		16.9			20.0			8.3	7.6		9.2		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		2.9			43.3			0.6	0.1		1.3		
Delay (s)		19.8			63.3			8.9	7.7		10.5		
Level of Service		B			E			A	A		B		
Approach Delay (s)		19.8			63.3			8.6			10.5		
Approach LOS		B			E			A			B		
Intersection Summary													
HCM 2000 Control Delay			32.3									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			75.2%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday AM

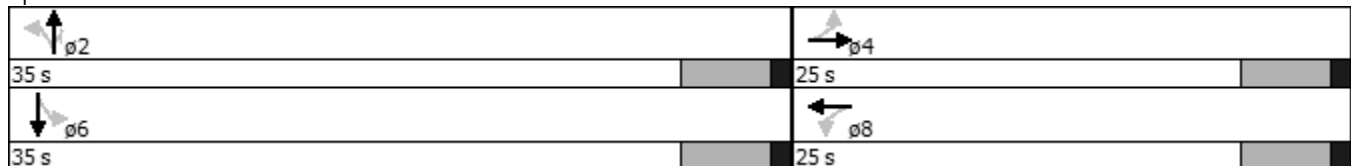


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	35	25	35	25
Maximum Split (%)	58.3%	41.7%	58.3%	41.7%
Minimum Split (s)	27	21	21	21
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	35	0	35
End Time (s)	35	0	35	0
Yield/Force Off (s)	30	55	30	55
Yield/Force Off 170(s)	19	44	19	44
Local Start Time (s)	0	35	0	35
Local Yield (s)	30	55	30	55
Local Yield 170(s)	19	44	19	44

Intersection Summary

















Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 16: Oakland St & Belmont Ave












17: Beaumont St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	215	2	4	395	5	8	6	4	3	11	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.77	0.77	0.77	0.75	0.75	0.75	0.69	0.69	0.69
Hourly flow rate (vph)	22	276	3	5	513	6	11	8	5	4	16	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782			973							
pX, platoon unblocked												
vC, conflicting volume	519			278			871	850	277	856	848	516
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	519			278			871	850	277	856	848	516
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	98			100			96	97	99	98	95	97
cM capacity (veh/h)	1057			1296			250	292	767	267	293	545
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	300	525	24	36								
Volume Left	22	5	11	4								
Volume Right	3	6	5	16								
cSH	1057	1296	312	363								
Volume to Capacity	0.02	0.00	0.08	0.10								
Queue Length 95th (ft)	2	0	6	8								
Control Delay (s)	0.8	0.1	17.5	16.0								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.8	0.1	17.5	16.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			32.4%		ICU Level of Service				A			
Analysis Period (min)			15									










18: Commonwealth Ave & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	342	44	91	371	1	82
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.88	0.88	0.80	0.80
Hourly flow rate (vph)	372	48	103	422	1	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	467					
pX, platoon unblocked						
vC, conflicting volume			420		1024	396
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			420		1024	396
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		99	84
cM capacity (veh/h)			1129		239	656
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	420	525	104			
Volume Left	0	103	1			
Volume Right	48	0	102			
cSH	1700	1129	642			
Volume to Capacity	0.25	0.09	0.16			
Queue Length 95th (ft)	0	8	14			
Control Delay (s)	0.0	2.5	11.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.5	11.7			
Approach LOS			B			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			60.4%		ICU Level of Service	B
Analysis Period (min)			15			

19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	79	334	443	92	12	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.96	0.96	0.77	0.77
Hourly flow rate (vph)	86	363	461	96	16	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		875				
pX, platoon unblocked						
vC, conflicting volume	557				1044	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	557				1044	509
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				93	92
cM capacity (veh/h)	1024				234	568
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	449	557	60			
Volume Left	86	0	16			
Volume Right	0	96	44			
cSH	1024	1700	414			
Volume to Capacity	0.08	0.33	0.14			
Queue Length 95th (ft)	7	0	13			
Control Delay (s)	2.5	0.0	15.2			
Lane LOS	A		C			
Approach Delay (s)	2.5	0.0	15.2			
Approach LOS			C			
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			64.2%	ICU Level of Service		C
Analysis Period (min)			15			
















20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘↙	
Volume (veh/h)	342	0	0	540	6	42
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.96	0.96	0.75	0.75
Hourly flow rate (vph)	402	0	0	562	8	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1086					
pX, platoon unblocked						
vC, conflicting volume			402		965	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			402		965	402
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		97	91
cM capacity (veh/h)			1167		285	637
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	402	562	64			
Volume Left	0	0	8			
Volume Right	0	0	56			
cSH	1700	1700	552			
Volume to Capacity	0.24	0.33	0.12			
Queue Length 95th (ft)	0	0	10			
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			0.8			
Intersection Capacity Utilization			38.4%	ICU Level of Service		A
Analysis Period (min)			15			

21: Hollywood St/Daytona St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	347	11	43	529	34	0	0	0	10	8	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92	0.68	0.68	0.68
Hourly flow rate (vph)	35	381	12	45	557	36	0	0	0	15	12	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)		1307										
pX, platoon unblocked												
vC, conflicting volume	593			393			1130	1141	387	1123	1129	575
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	593			393			1130	1141	387	1123	1129	575
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.2	3.3
p0 queue free %	96			96			100	100	100	91	93	100
cM capacity (veh/h)	978			1165			163	188	665	167	172	522
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	429	638	28									
Volume Left	35	45	15									
Volume Right	12	36	1									
cSH	978	1165	175									
Volume to Capacity	0.04	0.04	0.16									
Queue Length 95th (ft)	3	3	14									
Control Delay (s)	1.1	1.0	29.4									
Lane LOS	A	A	D									
Approach Delay (s)	1.1	1.0	29.4									
Approach LOS			D									
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			50.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	462	473	119	101	219
Average Queue (ft)	118	116	25	8	67
95th Queue (ft)	433	438	81	54	200
Link Distance (ft)	583	583	488	488	1479
Upstream Blk Time (%)	4	5			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	522	514	230	231	123
Average Queue (ft)	328	329	120	139	48
95th Queue (ft)	590	595	199	220	91
Link Distance (ft)	488	488	547	547	692
Upstream Blk Time (%)	9	9			
Queuing Penalty (veh)	60	62			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	102	75	16	48
Average Queue (ft)	20	3	1	10
95th Queue (ft)	65	29	9	35
Link Distance (ft)	547	547	358	354
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	200	326	152	152
Average Queue (ft)	30	118	38	17
95th Queue (ft)	117	270	111	89
Link Distance (ft)	358	358	160	160
Upstream Blk Time (%)		0	0	0
Queuing Penalty (veh)		1	1	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lenox St/Belmont Ave West & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	T	TR	L	TR	L	R
Maximum Queue (ft)	185	210	179	192	233	97	108	24
Average Queue (ft)	147	175	96	110	114	40	84	4
95th Queue (ft)	199	204	165	177	196	82	101	20
Link Distance (ft)	160	160	168	168	433	433	76	76
Upstream Blk Time (%)	7	26	1	1			66	
Queuing Penalty (veh)	29	107	4	7			103	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	T	T	R>	T	T	R	LTR	LTR>
Maximum Queue (ft)	118	99	176	57	50	2	367	462
Average Queue (ft)	41	25	102	8	6	0	183	411
95th Queue (ft)	94	70	191	35	32	2	322	568
Link Distance (ft)	168	168	168	98	98	98	396	436
Upstream Blk Time (%)	0	0	3		0		2	62
Queuing Penalty (veh)	0	0	11		0		4	193
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: Belmont Ave East & Sumner Ave

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	T	T	T	T	LR
Maximum Queue (ft)	61	42	72	77	60	112
Average Queue (ft)	6	5	53	54	17	100
95th Queue (ft)	32	25	62	68	52	111
Link Distance (ft)	98	98	42	42	42	42
Upstream Blk Time (%)			43	47	7	72
Queuing Penalty (veh)			101	111	17	235
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	48	9	258	277	37	53
Average Queue (ft)	10	1	130	149	8	20
95th Queue (ft)	37	9	221	242	29	51
Link Distance (ft)	42	42	402	402	56	197
Upstream Blk Time (%)	1	0			0	
Queuing Penalty (veh)	3	1			0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	74	73
Average Queue (ft)	0	22	37
95th Queue (ft)	0	59	60
Link Distance (ft)	402	205	309
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Daytona St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	4	4	103	28	64
Average Queue (ft)	0	0	15	1	26
95th Queue (ft)	3	3	56	16	50
Link Distance (ft)	205	205	1113	1113	505
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	175	797	778	99	211	179	46	99	116	153
Average Queue (ft)	162	456	411	19	108	70	12	47	31	71
95th Queue (ft)	210	886	837	66	175	142	33	84	66	120
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	78	0			14			0	0	0
Queuing Penalty (veh)	323	1			6			0	0	0

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	142	248	106	540
Average Queue (ft)	51	122	8	380
95th Queue (ft)	115	281	55	728
Link Distance (ft)	137	220	436	503
Upstream Blk Time (%)	6	40		61
Queuing Penalty (veh)	0	0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	119	59	15
Average Queue (ft)	47	37	1
95th Queue (ft)	90	72	7
Link Distance (ft)	290	54	396
Upstream Blk Time (%)		3	
Queuing Penalty (veh)		15	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	172	34
Average Queue (ft)	25	3
95th Queue (ft)	120	19
Link Distance (ft)	410	54
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	74	40	4
Average Queue (ft)	28	35	2	0
95th Queue (ft)	65	60	19	3
Link Distance (ft)	768	266	601	410
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	969	643	93	30	182
Average Queue (ft)	651	357	31	6	77
95th Queue (ft)	1198	678	70	23	151
Link Distance (ft)	925	684	692		511
Upstream Blk Time (%)	38	3			
Queuing Penalty (veh)	0	10			
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			1		
Queuing Penalty (veh)			0		

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	200	106	66	60
Average Queue (ft)	35	12	22	23
95th Queue (ft)	189	76	48	51
Link Distance (ft)	684	563	354	451
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	48	303	308
Average Queue (ft)	2	147	88
95th Queue (ft)	20	315	255
Link Distance (ft)	160	319	1099
Upstream Blk Time (%)		4	
Queuing Penalty (veh)		15	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	104	82	99
Average Queue (ft)	24	9	34
95th Queue (ft)	73	60	83
Link Distance (ft)	319	131	309
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		4	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Walden St & Belmont Ave










Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	28	34	55
Average Queue (ft)	1	3	19
95th Queue (ft)	12	30	39
Link Distance (ft)	131	155	272
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	129	172	48
Average Queue (ft)	21	35	14
95th Queue (ft)	77	108	38
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	1		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			










1: Main Greeting Rd & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1304	26	20	1004	5	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.39	0.39
Hourly flow rate (vph)	1610	32	23	1154	13	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.74	
vC, conflicting volume			1642		2249	821
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1642		1990	821
tC, single (s)			4.4		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			93		66	83
cM capacity (veh/h)			336		38	301
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1073	569	408	769	64	
Volume Left	0	0	23	0	13	
Volume Right	0	32	0	0	51	
cSH	1700	1700	336	1700	125	
Volume to Capacity	0.63	0.33	0.07	0.45	0.51	
Queue Length 95th (ft)	0	0	5	0	60	
Control Delay (s)	0.0	0.0	2.3	0.0	60.5	
Lane LOS			A		F	
Approach Delay (s)	0.0		0.8		60.5	
Approach LOS					F	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			52.0%		ICU Level of Service	A
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	115	1125	902	18	40	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frt		1.00	1.00		0.90	
Flt Protected		1.00	1.00		0.99	
Satd. Flow (prot)		3985	3489		1628	
Flt Permitted		0.63	1.00		0.99	
Satd. Flow (perm)		2523	3489		1628	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	134	1308	1049	21	47	147
RTOR Reduction (vph)	0	0	4	0	19	0
Lane Group Flow (vph)	0	1442	1066	0	175	0
Heavy Vehicles (%)	4%	2%	3%	11%	2%	4%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		16.0	16.0		16.0	
Effective Green, g (s)		16.0	16.0		16.0	
Actuated g/C Ratio		0.40	0.40		0.40	
Clearance Time (s)		4.0	4.0		4.0	
Lane Grp Cap (vph)		1009	1395		651	
v/s Ratio Prot			0.31		c0.11	
v/s Ratio Perm		c0.57				
v/c Ratio		1.43	0.76		0.27	
Uniform Delay, d1		12.0	10.4		8.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		198.9	4.0		1.0	
Delay (s)		210.9	14.4		9.1	
Level of Service		F	B		A	
Approach Delay (s)		210.9	14.4		9.1	
Approach LOS		F	B		A	
Intersection Summary						
HCM 2000 Control Delay			118.7		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			79.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Existing
Weekday MID

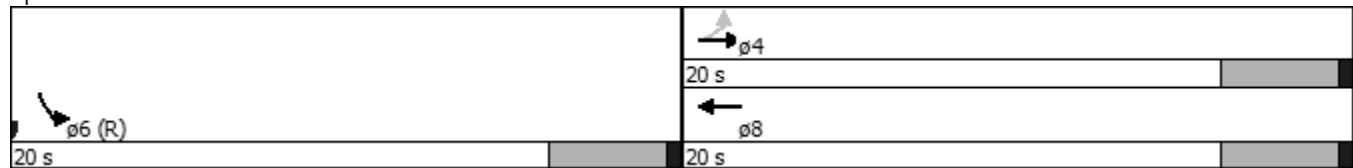


Phase Number	4	6	8
Movement	EBTL	SBL	WBT
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	20	0	20
End Time (s)	0	20	0
Yield/Force Off (s)	36	16	36
Yield/Force Off 170(s)	25	5	25
Local Start Time (s)	20	0	20
Local Yield (s)	36	16	36
Local Yield 170(s)	25	5	25

Intersection Summary










Cycle Length 40
Control Type Pretimed
Natural Cycle 60
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green

Splits and Phases: 2: Sumner Ave & Oakland St



3: Sumner Ave & Beaumont St HCM Unsignalized Intersection Capacity Analysis

2015 Existing
Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	1018	871	17	3	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	30	1170	1001	20	3	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	656			
pX, platoon unblocked	0.83				0.77	0.83
vC, conflicting volume	1021				1656	510
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609				260	0
tC, single (s)	4.1				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	96				99	98
cM capacity (veh/h)	811				530	882
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	420	780	667	353	17	
Volume Left	30	0	0	0	3	
Volume Right	0	0	0	20	14	
cSH	811	1700	1700	1700	779	
Volume to Capacity	0.04	0.46	0.39	0.21	0.02	
Queue Length 95th (ft)	3	0	0	0	2	
Control Delay (s)	1.1	0.0	0.0	0.0	9.7	
Lane LOS	A				A	
Approach Delay (s)	0.4		0.0		9.7	
Approach LOS					A	
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			56.8%		ICU Level of Service	B
Analysis Period (min)			15			

4: Cliftwood St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	813	150	31	898	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	874	161	35	1009	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1031			223							
pX, platoon unblocked	0.82			0.82			0.90	0.90	0.82	0.90	0.90	0.82
vC, conflicting volume	1009			1035			1529	2033	518	1516	2114	504
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	580			593			492	1050	0	478	1139	0
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			100	100	100	100	100	100
cM capacity (veh/h)	826			794			406	198	890	416	176	898
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	437	598	539	504	0							
Volume Left	0	0	35	0	0							
Volume Right	0	161	0	0	0							
cSH	826	1700	794	1700	1700							
Volume to Capacity	0.00	0.35	0.04	0.30	0.00							
Queue Length 95th (ft)	0	0	3	0	0							
Control Delay (s)	0.0	0.0	1.2	0.0	0.0							
Lane LOS			A		A							
Approach Delay (s)	0.0		0.6		0.0							
Approach LOS					A							
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			50.7%		ICU Level of Service				A			
Analysis Period (min)			15									







5: Lenox St/Belmont Ave West & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	808	0	0	731	0	184	57	10	304	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00		1.00
Frt		1.00			1.00		1.00	0.98		1.00		0.85
Flt Protected		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)		3574			3504		1624	1671		1577		1454
Flt Permitted		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)		3574			3504		1624	1671		1577		1454
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	860	0	0	778	0	196	61	11	323	0	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	5
Lane Group Flow (vph)	0	860	0	0	778	0	196	67	0	323	0	2
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%
Turn Type		NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		8	8		10		10
Permitted Phases	2	2			6			8				
Actuated Green, G (s)		45.0			45.0		26.5	26.5		26.0		26.0
Effective Green, g (s)		45.0			45.0		26.5	26.5		26.0		26.0
Actuated g/C Ratio		0.38			0.38		0.22	0.22		0.22		0.22
Clearance Time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)		1345			1319		360	370		343		316
v/s Ratio Prot		c0.24			0.22		c0.12	0.04		c0.20		0.00
v/s Ratio Perm												
v/c Ratio		0.64			0.59		0.54	0.18		0.94		0.00
Uniform Delay, d1		30.6			29.9		41.2	37.7		46.0		36.6
Progression Factor		1.00			0.47		1.00	1.00		1.00		1.00
Incremental Delay, d2		1.0			0.6		1.7	0.2		33.6		0.0
Delay (s)		31.6			14.8		42.8	37.9		79.6		36.6
Level of Service		C			B		D	D		E		D
Approach Delay (s)		31.6			14.8			41.5			78.7	
Approach LOS		C			B			D			E	
Intersection Summary												
HCM 2000 Control Delay			33.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			119.5				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			58.5%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

5: Lenox St/Belmont Ave West & Sumner Ave
Timing Report, Sorted By Phase

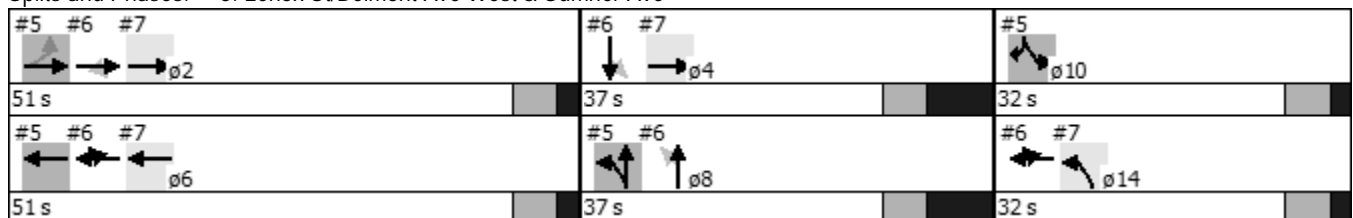
2015 Existing
Weekday MID

						
Phase Number	2	4	6	8	10	14
Node Number	5	6	5	5	5	6
Movement	EBTL	SBTL	WBT	NBTL	SBL	WBT
Lead/Lag						
Lead-Lag Optimize						
Recall Mode	None	None	None	None	None	None
Maximum Split (s)	51	37	51	37	32	32
Maximum Split (%)	42.5%	30.8%	42.5%	30.8%	26.7%	26.7%
Minimum Split (s)	22	27	10	27	26	26
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	6	2	6	2	2
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	5	5		5	5	5
Flash Dont Walk (s)	11	11		11	11	11
Dual Entry	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	51	0	51	88	88
End Time (s)	51	88	51	88	0	0
Yield/Force Off (s)	45	78	45	78	114	114
Yield/Force Off 170(s)	34	67	45	67	103	103
Local Start Time (s)	0	51	0	51	88	88
Local Yield (s)	45	78	45	78	114	114
Local Yield 170(s)	34	67	45	67	103	103

Intersection Summary

Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 5: Lenox St/Belmont Ave West & Sumner Ave



6: Dickinson St & Belmont Ave & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID







Movement	EBT	EBR	EBR2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations	↑↑	↔		↑↑	↔		↕			↕		
Volume (vph)	619	416	87	964	70	6	183	41	75	40	125	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		10.0			10.0		
Lane Util. Factor	0.95	1.00		0.95	1.00		1.00			1.00		
Frt	1.00	0.85		1.00	0.85		0.98			0.93		
Flt Protected	1.00	1.00		1.00	1.00		1.00			0.98		
Satd. Flow (prot)	3539	1576		3505	1553		1817			1727		
Flt Permitted	1.00	1.00		1.00	1.00		0.99			0.71		
Satd. Flow (perm)	3539	1576		3505	1553		1796			1249		
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)	652	438	92	1015	74	6	193	43	79	42	132	3
RTOR Reduction (vph)	0	74	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	652	456	0	1015	74	0	242	0	0	256	0	0
Heavy Vehicles (%)	2%	3%	0%	3%	4%	0%	2%	2%	1%	2%	0%	0%
Turn Type	NA	Perm		NA	Prot	Perm	NA		Perm	NA		
Protected Phases	2			6 14	6 14		8			4		
Permitted Phases		2				8			4			
Actuated Green, G (s)	45.0	45.0		77.0	77.0		26.5			26.5		
Effective Green, g (s)	45.0	45.0		77.0	77.0		26.5			26.5		
Actuated g/C Ratio	0.38	0.38		0.64	0.64		0.22			0.22		
Clearance Time (s)	6.0	6.0					10.0			10.0		
Vehicle Extension (s)	3.0	3.0					3.0			3.0		
Lane Grp Cap (vph)	1332	593		2258	1000		398			276		
v/s Ratio Prot	0.18			c0.29	0.05							
v/s Ratio Perm		c0.29					0.13			c0.21		
v/c Ratio	0.49	0.77		0.45	0.07		0.61			0.93		
Uniform Delay, d1	28.5	32.7		10.6	7.9		41.8			45.6		
Progression Factor	0.28	0.26		0.20	0.12		1.00			1.00		
Incremental Delay, d2	0.2	4.2		0.1	0.0		2.6			35.1		
Delay (s)	8.1	12.8		2.3	1.0		44.5			80.6		
Level of Service	A	B		A	A		D			F		
Approach Delay (s)	10.2			2.2			44.5			80.6		
Approach LOS	B			A			D			F		

Intersection Summary

HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

7: Belmont Ave East & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑	↑↑	
Volume (vph)	661	0	0	712	322	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	0.95			0.91	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			4988	1755	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			4988	1755	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	696	0	0	749	339	6
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	696	0	0	749	344	0
Heavy Vehicles (%)	2%	0%	0%	4%	3%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2 4			6	14	
Permitted Phases						
Actuated Green, G (s)	77.5			45.0	26.0	
Effective Green, g (s)	77.5			45.0	26.0	
Actuated g/C Ratio	0.65			0.38	0.22	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)	2295			1878	381	
v/s Ratio Prot	c0.20			c0.15	c0.20	
v/s Ratio Perm						
v/c Ratio	0.30			0.40	0.90	
Uniform Delay, d1	9.2			27.3	45.5	
Progression Factor	0.00			1.00	1.00	
Incremental Delay, d2	0.1			0.1	23.9	
Delay (s)	0.1			27.5	69.5	
Level of Service	A			C	E	
Approach Delay (s)	0.1			27.5	69.5	
Approach LOS	A			C	E	

Intersection Summary

HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			










8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	683	2	7	697	24	0	3	5	8	3	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.40	0.40	0.40	0.82	0.82	0.82
Hourly flow rate (vph)	12	767	2	8	758	26	0	8	12	10	4	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		109										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	784			770			1204	1592	385	1211	1580	392
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	784			561			1036	1460	140	1043	1447	392
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	94	98	94	97	98
cM capacity (veh/h)	844			933			162	116	813	157	119	613
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	396	386	386	405	20	28						
Volume Left	12	0	8	0	0	10						
Volume Right	0	2	0	26	12	15						
cSH	844	1700	933	1700	251	240						
Volume to Capacity	0.01	0.23	0.01	0.24	0.08	0.12						
Queue Length 95th (ft)	1	0	1	0	6	10						
Control Delay (s)	0.5	0.0	0.3	0.0	20.6	22.0						
Lane LOS	A		A		C	C						
Approach Delay (s)	0.2		0.1		20.6	22.0						
Approach LOS					C	C						
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			41.4%		ICU Level of Service				A			
Analysis Period (min)			15									










9: Ormond St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	701	11	65	726	36	67
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.89	0.89	0.95	0.95
Hourly flow rate (vph)	738	12	73	816	38	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)	584					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			749		1298	375
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			568		1161	164
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		77	91
cM capacity (veh/h)			938		164	795
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	492	258	345	544	108	
Volume Left	0	0	73	0	38	
Volume Right	0	12	0	0	71	
cSH	1700	1700	938	1700	338	
Volume to Capacity	0.29	0.15	0.08	0.32	0.32	
Queue Length 95th (ft)	0	0	6	0	34	
Control Delay (s)	0.0	0.0	2.6	0.0	20.6	
Lane LOS			A		C	
Approach Delay (s)	0.0		1.0		20.6	
Approach LOS					C	
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			57.8%		ICU Level of Service	B
Analysis Period (min)			15			

























10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	760	15	20	752	22	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76
Hourly flow rate (vph)	826	16	22	817	29	39
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			1212		
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			842		1286	421
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			698		1172	249
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		83	94
cM capacity (veh/h)			820		172	710
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	551	292	294	545	68	
Volume Left	0	0	22	0	29	
Volume Right	0	16	0	0	39	
cSH	1700	1700	820	1700	305	
Volume to Capacity	0.32	0.17	0.03	0.32	0.22	
Queue Length 95th (ft)	0	0	2	0	21	
Control Delay (s)	0.0	0.0	1.0	0.0	20.2	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.3		20.2	
Approach LOS					C	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			45.2%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	182	818	7	44	945	52	36	147	34	96	209	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3570		1770	3505		1752	1817		1752	1775	
Flt Permitted	0.25	1.00		0.25	1.00		0.53	1.00		0.63	1.00	
Satd. Flow (perm)	466	3570		466	3505		981	1817		1163	1775	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	204	919	8	49	1062	58	40	165	38	108	235	79
RTOR Reduction (vph)	0	2	0	0	10	0	0	21	0	0	18	0
Lane Group Flow (vph)	204	925	0	49	1110	0	40	182	0	108	296	0
Heavy Vehicles (%)	2%	1%	0%	2%	2%	6%	3%	2%	0%	3%	2%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	186	1428		186	1402		392	726		465	710	
v/s Ratio Prot		0.26			0.32			0.10			c0.17	
v/s Ratio Perm	c0.44			0.11			0.04			0.09		
v/c Ratio	1.10	0.65		0.26	0.79		0.10	0.25		0.23	0.42	
Uniform Delay, d1	12.0	9.7		8.0	10.5		7.5	8.0		7.9	8.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	94.2	2.3		3.4	4.7		0.5	0.8		1.2	1.8	
Delay (s)	106.2	12.0		11.5	15.2		8.0	8.8		9.1	10.4	
Level of Service	F	B		B	B		A	A		A	B	
Approach Delay (s)		29.0			15.0			8.7			10.1	
Approach LOS		C			B			A			B	

Intersection Summary

HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday MID

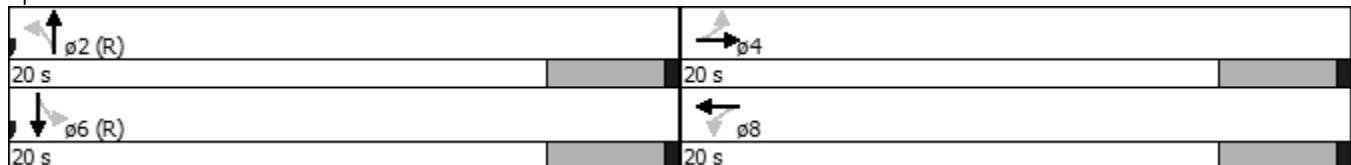


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	36	16	36
Yield/Force Off 170(s)	5	25	5	25
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	36	16	36
Local Yield 170(s)	5	25	5	25

Intersection Summary

















Cycle Length 40
Control Type Pretimed
Natural Cycle 70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave












12: Dickinson St & Burlington St/Grenada Terr
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	34	11	9	18	67	17	267	20	60	284	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.71	0.71	0.71	0.86	0.86	0.86	0.81	0.81	0.81
Hourly flow rate (vph)	6	41	13	13	25	94	20	310	23	74	351	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	975	880	359	902	876	322	367			334		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	921	816	359	840	812	200	367			213		
tC, single (s)	7.3	6.5	6.2	7.1	6.6	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.1	3.3	2.2			2.2		
p0 queue free %	96	84	98	94	90	88	98			94		
cM capacity (veh/h)	161	263	690	212	254	767	1203			1230		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	132	353	441								
Volume Left	6	13	20	74								
Volume Right	13	94	23	16								
cSH	284	468	1203	1230								
Volume to Capacity	0.21	0.28	0.02	0.06								
Queue Length 95th (ft)	20	29	1	5								
Control Delay (s)	21.1	15.7	0.6	1.9								
Lane LOS	C	C	A	A								
Approach Delay (s)	21.1	15.7	0.6	1.9								
Approach LOS	C	C										
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			50.9%		ICU Level of Service				A			
Analysis Period (min)			15									










13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	196	220	233	230	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	11	248	244	259	274	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked						
vC, conflicting volume	1029	281	288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1029	281	288			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	67	81			
cM capacity (veh/h)	211	760	1274			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	259	503	288			
Volume Left	11	244	0			
Volume Right	248	0	14			
cSH	682	1274	1700			
Volume to Capacity	0.38	0.19	0.17			
Queue Length 95th (ft)	45	18	0			
Control Delay (s)	13.5	5.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.5	5.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.8			
Intersection Capacity Utilization			59.9%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	453	30	6	420
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	0	0	503	33	7	500
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked						
vC, conflicting volume	1034	520			537	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	520			537	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	258	560			1042	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	537	507			
Volume Left	0	0	7			
Volume Right	0	33	0			
cSH	1700	1700	1042			
Volume to Capacity	0.00	0.32	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	0.2			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.2			
Approach LOS	A					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			30.2%	ICU Level of Service		A
Analysis Period (min)			15			


















15: Dickinson St & Trafton Rd/Hollywood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	2	36	18	32	4	462	0	0	352	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.52	0.52	0.52	0.77	0.77	0.77	0.90	0.90	0.90	0.94	0.94	0.94
Hourly flow rate (vph)	88	0	4	47	23	42	4	513	0	0	374	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											1056	
pX, platoon unblocked												
vC, conflicting volume	971	917	395	921	938	513	416			513		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	971	917	395	921	938	513	416			513		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.3	2.2			2.2		
p0 queue free %	56	100	99	81	91	93	100			100		
cM capacity (veh/h)	200	273	658	251	259	565	1154			1062		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	92	112	518	416								
Volume Left	88	47	4	0								
Volume Right	4	42	0	41								
cSH	206	319	1154	1062								
Volume to Capacity	0.45	0.35	0.00	0.00								
Queue Length 95th (ft)	53	38	0	0								
Control Delay (s)	36.0	22.2	0.1	0.0								
Lane LOS	E	C	A									
Approach Delay (s)	36.0	22.2	0.1	0.0								
Approach LOS	E	C										
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			39.5%		ICU Level of Service					A		
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	65	347	31	63	235	70	12	103	16	58	221	43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frt		0.99			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1656			1581			1642	1454		1668		
Flt Permitted		0.86			0.80			0.96	1.00		0.93		
Satd. Flow (perm)		1441			1282			1583	1454		1564		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	72	386	34	70	261	78	13	114	18	64	246	48	
RTOR Reduction (vph)	0	5	0	0	14	0	0	0	9	0	10	0	
Lane Group Flow (vph)	0	487	0	0	395	0	0	127	9	0	349	0	
Heavy Vehicles (%)	0%	2%	0%	3%	5%	4%	0%	4%	0%	3%	2%	9%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		4			8			2		6			
Permitted Phases	4			8			2		2	6			
Actuated Green, G (s)		20.0			20.0			30.0	30.0		30.0		
Effective Green, g (s)		20.0			20.0			30.0	30.0		30.0		
Actuated g/C Ratio		0.33			0.33			0.50	0.50		0.50		
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		480			427			791	727		782		
v/s Ratio Prot													
v/s Ratio Perm		c0.34			0.31			0.08	0.01		c0.22		
v/c Ratio		1.02			0.93			0.16	0.01		0.45		
Uniform Delay, d1		20.0			19.3			8.2	7.5		9.7		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		45.0			25.7			0.4	0.0		1.8		
Delay (s)		65.0			45.0			8.6	7.6		11.5		
Level of Service		E			D			A	A		B		
Approach Delay (s)		65.0			45.0			8.5			11.5		
Approach LOS		E			D			A			B		
Intersection Summary													
HCM 2000 Control Delay			39.7									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.67										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			68.2%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday MID

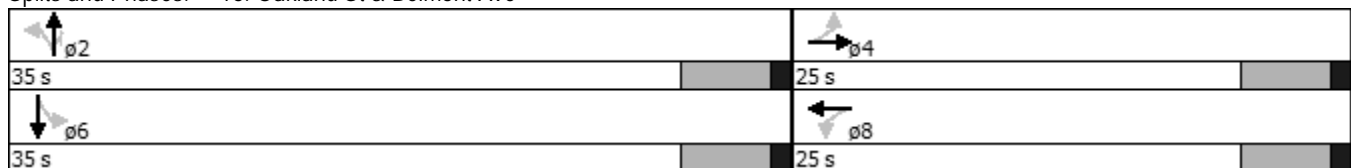


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	35	25	35	25
Maximum Split (%)	58.3%	41.7%	58.3%	41.7%
Minimum Split (s)	27	21	21	21
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	35	0	35
End Time (s)	35	0	35	0
Yield/Force Off (s)	30	55	30	55
Yield/Force Off 170(s)	19	44	19	44
Local Start Time (s)	0	35	0	35
Local Yield (s)	30	55	30	55
Local Yield 170(s)	19	44	19	44

Intersection Summary

















Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 16: Oakland St & Belmont Ave












17: Beaumont St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	353	2	4	303	7	8	21	10	8	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.95	0.95	0.95	0.82	0.82	0.82	0.94	0.94	0.94
Hourly flow rate (vph)	34	410	2	4	319	7	10	26	12	9	12	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782			973							
pX, platoon unblocked				0.85			0.85	0.85	0.85	0.85	0.85	
vC, conflicting volume	326			413			833	814	412	835	811	323
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	326			218			714	691	217	716	688	323
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	92	98	97	96	98
cM capacity (veh/h)	1245			1156			274	304	702	265	306	723
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	447	331	48	37								
Volume Left	34	4	10	9								
Volume Right	2	7	12	17								
cSH	1245	1156	347	396								
Volume to Capacity	0.03	0.00	0.14	0.09								
Queue Length 95th (ft)	2	0	12	8								
Control Delay (s)	0.9	0.1	17.0	15.0								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.9	0.1	17.0	15.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			46.4%		ICU Level of Service				A			
Analysis Period (min)			15									










18: Commonwealth Ave & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	473	54	97	309	17	128
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.97	0.97	0.84	0.84
Hourly flow rate (vph)	509	58	100	319	20	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	467					
pX, platoon unblocked						
vC, conflicting volume			567		1056	538
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			567		1056	538
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		91	72
cM capacity (veh/h)			1015		227	547
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	567	419	173			
Volume Left	0	100	20			
Volume Right	58	0	152			
cSH	1700	1015	470			
Volume to Capacity	0.33	0.10	0.37			
Queue Length 95th (ft)	0	8	42			
Control Delay (s)	0.0	3.0	17.1			
Lane LOS		A	C			
Approach Delay (s)	0.0	3.0	17.1			
Approach LOS			C			
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			68.6%		ICU Level of Service	C
Analysis Period (min)			15			







19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	513	352	55	22	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.88	0.88	0.71	0.71
Hourly flow rate (vph)	63	546	400	62	31	85
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		875				
pX, platoon unblocked						
vC, conflicting volume	462				1103	431
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	462				1103	431
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				86	86
cM capacity (veh/h)	1099				223	624
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	609	462	115			
Volume Left	63	0	31			
Volume Right	0	62	85			
cSH	1099	1700	421			
Volume to Capacity	0.06	0.27	0.27			
Queue Length 95th (ft)	5	0	28			
Control Delay (s)	1.5	0.0	16.8			
Lane LOS	A		C			
Approach Delay (s)	1.5	0.0	16.8			
Approach LOS			C			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			67.0%		ICU Level of Service	C
Analysis Period (min)			15			

20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	↗
Volume (veh/h)	537	0	1	414	5	66
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.90	0.90	0.89	0.89
Hourly flow rate (vph)	559	0	1	460	6	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)	1086					
pX, platoon unblocked						
vC, conflicting volume			559		1022	559
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			559		1022	559
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	86
cM capacity (veh/h)			1022		264	532
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	559	461	80			
Volume Left	0	1	6			
Volume Right	0	0	74			
cSH	1700	1022	496			
Volume to Capacity	0.33	0.00	0.16			
Queue Length 95th (ft)	0	0	14			
Control Delay (s)	0.0	0.0	13.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.0	13.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			39.3%	ICU Level of Service		A
Analysis Period (min)			15			

21: Hollywood St/Daytona St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	566	15	51	421	20	0	0	0	10	9	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Hourly flow rate (vph)	34	572	15	55	453	22	0	0	0	16	14	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1307										
pX, platoon unblocked												
vC, conflicting volume	474			587			1234	1232	579	1221	1229	463
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474			587			1234	1232	579	1221	1229	463
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	97			94			100	100	100	89	91	99
cM capacity (veh/h)	1098			950			133	163	518	148	156	603
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	621	529	36									
Volume Left	34	55	16									
Volume Right	15	22	6									
cSH	1098	950	174									
Volume to Capacity	0.03	0.06	0.21									
Queue Length 95th (ft)	2	5	19									
Control Delay (s)	0.8	1.6	31.0									
Lane LOS	A	A	D									
Approach Delay (s)	0.8	1.6	31.0									
Approach LOS			D									
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			50.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	631	628	121	85	141
Average Queue (ft)	483	479	21	6	43
95th Queue (ft)	842	844	77	51	117
Link Distance (ft)	583	583	488	488	1479
Upstream Blk Time (%)	58	68			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	524	524	284	262	118
Average Queue (ft)	480	484	153	166	56
95th Queue (ft)	585	588	237	248	97
Link Distance (ft)	488	488	547	547	692
Upstream Blk Time (%)	28	30			
Queuing Penalty (veh)	213	221			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	77	67	8	69
Average Queue (ft)	18	5	0	25
95th Queue (ft)	61	42	4	51
Link Distance (ft)	547	547	358	354
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	208	334	160	166
Average Queue (ft)	40	150	40	23
95th Queue (ft)	160	307	118	102
Link Distance (ft)	358	358	160	160
Upstream Blk Time (%)	0	0	0	0
Queuing Penalty (veh)	0	3	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lenox St/Belmont Ave West & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	T	TR	L	TR	L	R
Maximum Queue (ft)	192	196	155	167	208	68	103	49
Average Queue (ft)	143	175	82	93	96	26	83	5
95th Queue (ft)	203	189	139	151	167	62	97	26
Link Distance (ft)	160	160	168	168	433	433	76	76
Upstream Blk Time (%)	9	32	0	0			72	0
Queuing Penalty (veh)	45	154	0	1			205	1
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	T	T	R>	T	T	LTR	<LTR
Maximum Queue (ft)	80	64	178	45	18	400	469
Average Queue (ft)	24	18	103	4	2	186	423
95th Queue (ft)	69	50	194	21	12	337	567
Link Distance (ft)	168	168	168	98	98	396	442
Upstream Blk Time (%)			3			2	61
Queuing Penalty (veh)			13			5	214
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: Belmont Ave East & Sumner Ave

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	T	T	T	T	LR
Maximum Queue (ft)	40	36	64	76	40	117
Average Queue (ft)	9	8	51	54	5	101
95th Queue (ft)	33	31	59	65	26	110
Link Distance (ft)	98	98	42	42	42	42
Upstream Blk Time (%)			40	47	1	76
Queuing Penalty (veh)			101	117	2	270
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	WB	WB	NB	SB
Directions Served	LT	LT	TR	LTR	LTR
Maximum Queue (ft)	42	251	272	42	62
Average Queue (ft)	4	133	154	9	26
95th Queue (ft)	25	223	245	32	53
Link Distance (ft)	42	402	402	56	197
Upstream Blk Time (%)	0			0	
Queuing Penalty (veh)	1			0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	50	62	121	69	69
Average Queue (ft)	7	9	35	9	33
95th Queue (ft)	65	75	111	75	58
Link Distance (ft)	402	402	205	205	309
Upstream Blk Time (%)			2	1	
Queuing Penalty (veh)			7	4	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Daytona St & Sumner Ave

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (ft)	156	117	68
Average Queue (ft)	17	3	27
95th Queue (ft)	71	45	53
Link Distance (ft)	1113	1113	505
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	125	159	177	86	184	145	63	151	113	218
Average Queue (ft)	41	76	85	13	92	53	18	69	42	90
95th Queue (ft)	96	139	153	48	151	120	46	116	84	163
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	0	0		0	8			1		1
Queuing Penalty (veh)	2	0		0	3			0		1

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	144	230	106	535
Average Queue (ft)	62	109	9	388
95th Queue (ft)	145	260	51	732
Link Distance (ft)	137	220	442	503
Upstream Blk Time (%)	18	23		66
Queuing Penalty (veh)	0	0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	125	63	18
Average Queue (ft)	40	35	1
95th Queue (ft)	80	71	9
Link Distance (ft)	290	54	396
Upstream Blk Time (%)		4	
Queuing Penalty (veh)		16	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB
Directions Served	TR
Maximum Queue (ft)	218
Average Queue (ft)	21
95th Queue (ft)	114
Link Distance (ft)	410
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	68	82	30
Average Queue (ft)	31	38	1
95th Queue (ft)	53	66	9
Link Distance (ft)	768	266	601
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	964	559	86	45	151
Average Queue (ft)	764	263	30	7	71
95th Queue (ft)	1215	566	68	29	128
Link Distance (ft)	925	684	692		511
Upstream Blk Time (%)	64	1			
Queuing Penalty (veh)	0	4			
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	517	76	57	133
Average Queue (ft)	118	7	23	40
95th Queue (ft)	411	43	55	139
Link Distance (ft)	684	563	354	451
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	3			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	44	336	872
Average Queue (ft)	4	244	406
95th Queue (ft)	24	418	1063
Link Distance (ft)	160	319	1099
Upstream Blk Time (%)		22	11
Queuing Penalty (veh)		95	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	118	143	232
Average Queue (ft)	22	58	80
95th Queue (ft)	82	163	210
Link Distance (ft)	319	137	309
Upstream Blk Time (%)		11	5
Queuing Penalty (veh)		47	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Walden St & Belmont Ave










Movement	WB	NB
Directions Served	T	LR
Maximum Queue (ft)	148	88
Average Queue (ft)	32	30
95th Queue (ft)	126	75
Link Distance (ft)	155	264
Upstream Blk Time (%)	7	
Queuing Penalty (veh)	29	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	123	226	54
Average Queue (ft)	15	78	20
95th Queue (ft)	68	304	45
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			










1: Main Greeting Rd & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1481	16	20	1196	5	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.89	0.89	0.60	0.60
Hourly flow rate (vph)	1559	17	22	1344	8	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.71	
vC, conflicting volume			1576		2284	788
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1576		1998	788
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			95		71	97
cM capacity (veh/h)			424		29	338
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1039	536	470	896	20	
Volume Left	0	0	22	0	8	
Volume Right	0	17	0	0	12	
cSH	1700	1700	424	1700	61	
Volume to Capacity	0.61	0.32	0.05	0.53	0.33	
Queue Length 95th (ft)	0	0	4	0	30	
Control Delay (s)	0.0	0.0	1.6	0.0	90.1	
Lane LOS			A		F	
Approach Delay (s)	0.0		0.6		90.1	
Approach LOS					F	
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			57.2%		ICU Level of Service	B
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	160	1281	1020	16	34	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frt		1.00	1.00		0.88	
Flt Protected		0.99	1.00		0.99	
Satd. Flow (prot)		4028	3532		1668	
Flt Permitted		0.56	1.00		0.99	
Satd. Flow (perm)		2278	3532		1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1392	1109	17	37	221
RTOR Reduction (vph)	0	0	2	0	15	0
Lane Group Flow (vph)	0	1566	1124	0	243	0
Heavy Vehicles (%)	1%	1%	2%	0%	0%	0%
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		16.0	16.0		16.0	
Effective Green, g (s)		16.0	16.0		16.0	
Actuated g/C Ratio		0.40	0.40		0.40	
Clearance Time (s)		4.0	4.0		4.0	
Lane Grp Cap (vph)		911	1412		667	
v/s Ratio Prot			0.32		c0.15	
v/s Ratio Perm		c0.69				
v/c Ratio		1.72	0.80		0.36	
Uniform Delay, d1		12.0	10.6		8.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		328.2	4.7		1.5	
Delay (s)		340.2	15.3		10.0	
Level of Service		F	B		A	
Approach Delay (s)		340.2	15.3		10.0	
Approach LOS		F	B		A	
Intersection Summary						
HCM 2000 Control Delay			187.3		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			93.2%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Existing
Weekday PM

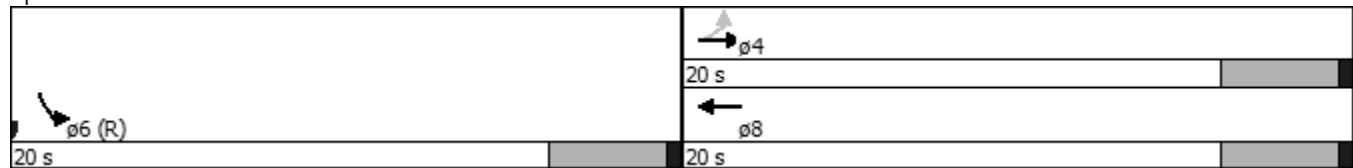


Phase Number	4	6	8
Movement	EBTL	SBL	WBT
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	20	0	20
End Time (s)	0	20	0
Yield/Force Off (s)	36	16	36
Yield/Force Off 170(s)	25	5	25
Local Start Time (s)	20	0	20
Local Yield (s)	36	16	36
Local Yield 170(s)	25	5	25

Intersection Summary










Cycle Length 40
Control Type Pretimed
Natural Cycle 70
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green

Splits and Phases: 2: Sumner Ave & Oakland St



3: Sumner Ave & Beaumont St HCM Unsignalized Intersection Capacity Analysis

2015 Existing
Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	23	1096	1024	20	12	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	25	1204	1125	22	13	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	656			
pX, platoon unblocked	0.81				0.77	0.81
vC, conflicting volume	1147				1789	574
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	713				316	5
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	96
cM capacity (veh/h)	726				489	878
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	427	803	750	397	48	
Volume Left	25	0	0	0	13	
Volume Right	0	0	0	22	35	
cSH	726	1700	1700	1700	721	
Volume to Capacity	0.03	0.47	0.44	0.23	0.07	
Queue Length 95th (ft)	3	0	0	0	5	
Control Delay (s)	1.0	0.0	0.0	0.0	10.4	
Lane LOS	A				B	
Approach Delay (s)	0.4		0.0		10.4	
Approach LOS					B	
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			56.7%		ICU Level of Service	B
Analysis Period (min)			15			

4: Cliftwood St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	954	111	26	1003	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1004	117	30	1153	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1031			223							
pX, platoon unblocked	0.81			0.78			0.88	0.88	0.78	0.88	0.88	0.81
vC, conflicting volume	1153			1121			1699	2275	561	1715	2334	576
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	708			596			525	1181	0	543	1248	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			100	100	100	100	100	100
cM capacity (veh/h)	725			774			375	162	853	364	148	879
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	502	619	606	576	0							
Volume Left	0	0	30	0	0							
Volume Right	0	117	0	0	0							
cSH	725	1700	774	1700	1700							
Volume to Capacity	0.00	0.36	0.04	0.34	0.00							
Queue Length 95th (ft)	0	0	3	0	0							
Control Delay (s)	0.0	0.0	1.0	0.0	0.0							
Lane LOS			A		A							
Approach Delay (s)	0.0		0.5		0.0							
Approach LOS					A							
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			49.7%		ICU Level of Service				A			
Analysis Period (min)			15									







5: Lenox St/Belmont Ave West & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	926	0	0	781	0	159	36	4	337	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00		1.00
Frt		1.00			1.00		1.00	0.99		1.00		0.85
Flt Protected		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (prot)		3574			3504		1624	1686		1608		1454
Flt Permitted		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)		3574			3504		1624	1686		1608		1454
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	985	0	0	831	0	169	38	4	359	0	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	5
Lane Group Flow (vph)	0	985	0	0	831	0	169	39	0	359	0	2
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%	0%
Turn Type		NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		8	8		10		10
Permitted Phases	2	2			6			8				
Actuated Green, G (s)		45.0			45.0		27.0	27.0		26.0		26.0
Effective Green, g (s)		45.0			45.0		27.0	27.0		26.0		26.0
Actuated g/C Ratio		0.38			0.38		0.22	0.22		0.22		0.22
Clearance Time (s)		6.0			6.0		10.0	10.0		6.0		6.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0		3.0
Lane Grp Cap (vph)		1340			1314		365	379		348		315
v/s Ratio Prot		c0.28			0.24		c0.10	0.02		c0.22		0.00
v/s Ratio Perm												
v/c Ratio		0.74			0.63		0.46	0.10		1.03		0.00
Uniform Delay, d1		32.4			30.7		40.2	36.9		47.0		36.9
Progression Factor		1.00			0.28		1.00	1.00		1.00		1.00
Incremental Delay, d2		2.1			0.9		0.9	0.1		56.6		0.0
Delay (s)		34.5			9.6		41.2	37.0		103.6		36.9
Level of Service		C			A		D	D		F		D
Approach Delay (s)		34.5			9.6			40.3			102.4	
Approach LOS		C			A			D			F	
Intersection Summary												
HCM 2000 Control Delay			36.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			64.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

5: Lenox St/Belmont Ave West & Sumner Ave
Timing Report, Sorted By Phase

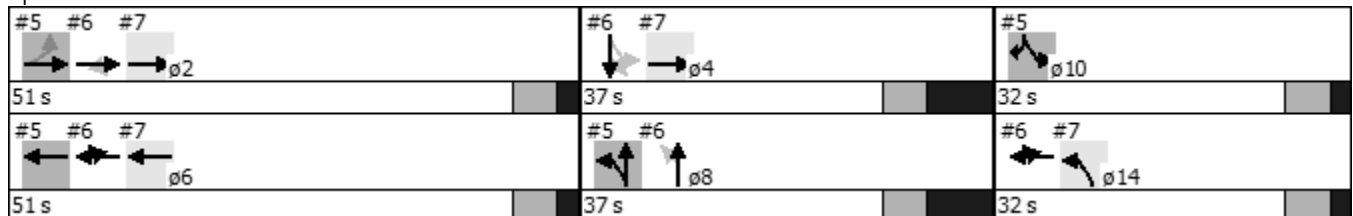
2015 Existing
Weekday PM

						
Phase Number	2	4	6	8	10	14
Node Number	5	6	5	5	5	6
Movement	EBTL	SBTL	WBT	NBTL	SBL	WBT
Lead/Lag						
Lead-Lag Optimize						
Recall Mode	None	None	None	None	None	None
Maximum Split (s)	51	37	51	37	32	32
Maximum Split (%)	42.5%	30.8%	42.5%	30.8%	26.7%	26.7%
Minimum Split (s)	22	27	10	27	26	26
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	6	2	6	2	2
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	5	5		5	5	5
Flash Dont Walk (s)	11	11		11	11	11
Dual Entry	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	51	0	51	88	88
End Time (s)	51	88	51	88	0	0
Yield/Force Off (s)	45	78	45	78	114	114
Yield/Force Off 170(s)	34	67	45	67	103	103
Local Start Time (s)	0	51	0	51	88	88
Local Yield (s)	45	78	45	78	114	114
Local Yield 170(s)	34	67	45	67	103	103

Intersection Summary

Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 5: Lenox St/Belmont Ave West & Sumner Ave



6: Dickinson St & Belmont Ave & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM







Movement	EBT	EBR	EBR2	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SBR
Lane Configurations	↑↑	↔		↑↑	↔		↔				↔	
Volume (vph)	661	495	111	1053	23	9	186	43	20	75	200	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		10.0				10.0	
Lane Util. Factor	0.95	1.00		0.95	1.00		1.00				1.00	
Frt	1.00	0.85		1.00	0.85		0.98				1.00	
Flt Protected	1.00	1.00		1.00	1.00		1.00				0.98	
Satd. Flow (prot)	3574	1593		3539	1615		1808				1850	
Flt Permitted	1.00	1.00		1.00	1.00		0.97				0.69	
Satd. Flow (perm)	3574	1593		3539	1615		1763				1301	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	711	532	119	1132	25	10	200	46	22	81	215	11
RTOR Reduction (vph)	0	74	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	711	577	0	1132	25	0	256	0	0	0	329	0
Heavy Vehicles (%)	1%	1%	3%	2%	0%	0%	3%	0%	0%	0%	1%	0%
Turn Type	NA	Perm		NA	Prot	Perm	NA		Perm	Perm	NA	
Protected Phases	2			6 14	6 14		8				4	
Permitted Phases		2				8			4	4		
Actuated Green, G (s)	45.0	45.0		77.0	77.0		27.0				27.0	
Effective Green, g (s)	45.0	45.0		77.0	77.0		27.0				27.0	
Actuated g/C Ratio	0.38	0.38		0.64	0.64		0.22				0.22	
Clearance Time (s)	6.0	6.0					10.0				10.0	
Vehicle Extension (s)	3.0	3.0					3.0				3.0	
Lane Grp Cap (vph)	1340	597		2270	1036		396				292	
v/s Ratio Prot	0.20			c0.32	0.02							
v/s Ratio Perm		c0.36					0.15				c0.25	
v/c Ratio	0.53	0.97		0.50	0.02		0.65				1.13	
Uniform Delay, d1	29.3	36.8		11.3	7.8		42.2				46.5	
Progression Factor	0.27	0.27		0.22	0.12		1.00				1.00	
Incremental Delay, d2	0.2	20.0		0.1	0.0		3.6				91.3	
Delay (s)	8.1	30.0		2.6	1.0		45.8				137.8	
Level of Service	A	C		A	A		D				F	
Approach Delay (s)	18.6			2.6			45.8				137.8	
Approach LOS	B			A			D				F	

Intersection Summary

HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

7: Belmont Ave East & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑	↑↑	
Volume (vph)	724	0	0	726	350	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	0.95			0.91	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3574			5136	1773	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3574			5136	1773	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	778	0	0	781	376	3
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	778	0	0	781	379	0
Heavy Vehicles (%)	1%	0%	0%	1%	2%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2 4			6	14	
Permitted Phases						
Actuated Green, G (s)	78.0			45.0	26.0	
Effective Green, g (s)	78.0			45.0	26.0	
Actuated g/C Ratio	0.65			0.38	0.22	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)	2323			1926	384	
v/s Ratio Prot	c0.22			c0.15	c0.21	
v/s Ratio Perm						
v/c Ratio	0.33			0.41	0.99	
Uniform Delay, d1	9.4			27.6	46.8	
Progression Factor	0.00			1.00	1.00	
Incremental Delay, d2	0.1			0.1	42.1	
Delay (s)	0.1			27.8	88.9	
Level of Service	A			C	F	
Approach Delay (s)	0.1			27.8	88.9	
Approach LOS	A			C	F	

Intersection Summary

HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			










8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	737	4	2	737	12	1	5	6	14	10	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.38	0.38	0.38	0.83	0.83	0.83
Hourly flow rate (vph)	4	819	4	2	776	13	3	13	16	17	12	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		109										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	788			823			1247	1623	412	1227	1619	394
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	788			588			1058	1474	132	1036	1469	394
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	89	98	89	90	97
cM capacity (veh/h)	840			900			145	114	811	151	115	611
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	414	414	390	401	32	48						
Volume Left	4	0	2	0	3	17						
Volume Right	0	4	0	13	16	19						
cSH	840	1700	900	1700	207	195						
Volume to Capacity	0.01	0.24	0.00	0.24	0.15	0.25						
Queue Length 95th (ft)	0	0	0	0	13	23						
Control Delay (s)	0.2	0.0	0.1	0.0	25.5	29.5						
Lane LOS	A		A		D	D						
Approach Delay (s)	0.1		0.0		25.5	29.5						
Approach LOS					D	D						
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			36.1%		ICU Level of Service				A			
Analysis Period (min)			15									










9: Ormond St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	804	20	63	742	19	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.93	0.93	0.64	0.64
Hourly flow rate (vph)	924	23	68	798	30	91
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	584					
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			947		1470	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			733		1310	210
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		77	88
cM capacity (veh/h)			798		127	726
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	616	331	334	532	120	
Volume Left	0	0	68	0	30	
Volume Right	0	23	0	0	91	
cSH	1700	1700	798	1700	335	
Volume to Capacity	0.36	0.19	0.08	0.31	0.36	
Queue Length 95th (ft)	0	0	7	0	40	
Control Delay (s)	0.0	0.0	2.8	0.0	21.6	
Lane LOS			A		C	
Approach Delay (s)	0.0		1.1		21.6	
Approach LOS					C	
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			59.8%		ICU Level of Service	B
Analysis Period (min)			15			

























10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	857	22	25	785	18	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.94	0.94	0.68	0.68
Hourly flow rate (vph)	942	24	27	835	26	41
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			1212		
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			966		1425	483
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			791		1289	267
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		81	94
cM capacity (veh/h)			748		140	679
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	628	338	305	557	68	
Volume Left	0	0	27	0	26	
Volume Right	0	24	0	0	41	
cSH	1700	1700	748	1700	271	
Volume to Capacity	0.37	0.20	0.04	0.33	0.25	
Queue Length 95th (ft)	0	0	3	0	24	
Control Delay (s)	0.0	0.0	1.3	0.0	22.6	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.4		22.6	
Approach LOS					C	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	89	935	12	34	809	73	51	219	53	117	314	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3603		1805	3530		1805	1808		1787	1840	
Flt Permitted	0.25	1.00		0.25	1.00		0.43	1.00		0.55	1.00	
Satd. Flow (perm)	470	3603		475	3530		813	1808		1040	1840	
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)	97	1016	13	37	879	79	55	238	58	127	341	63
RTOR Reduction (vph)	0	2	0	0	17	0	0	21	0	0	17	0
Lane Group Flow (vph)	97	1027	0	37	941	0	55	275	0	127	387	0
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	0%	2%	2%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	188	1441		190	1412		325	723		416	736	
v/s Ratio Prot		c0.28			0.27			0.15			c0.21	
v/s Ratio Perm	0.21			0.08			0.07			0.12		
v/c Ratio	0.52	0.71		0.19	0.67		0.17	0.38		0.31	0.53	
Uniform Delay, d1	9.1	10.1		7.8	9.8		7.7	8.5		8.2	9.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.8	3.0		2.3	2.5		1.1	1.5		1.9	2.7	
Delay (s)	18.8	13.1		10.1	12.3		8.8	10.0		10.1	11.8	
Level of Service	B	B		B	B		A	B		B	B	
Approach Delay (s)		13.6			12.2			9.8			11.4	
Approach LOS		B			B			A			B	

Intersection Summary

HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday PM

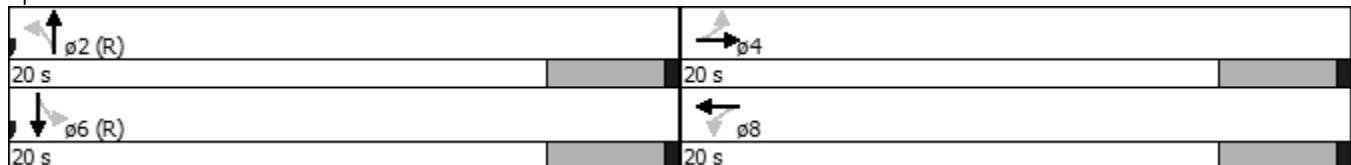


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	36	16	36
Yield/Force Off 170(s)	5	25	5	25
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	36	16	36
Local Yield 170(s)	5	25	5	25

Intersection Summary

















Cycle Length 40
Control Type Pretimed
Natural Cycle 45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave












12: Dickinson St & Burlington St/Grenada Terr
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	40	8	10	6	43	16	250	14	80	331	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	9	49	10	11	7	49	18	281	16	86	356	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.90	0.90		0.90	0.90	0.90				0.90		
vC, conflicting volume	917	872	368	899	876	289	380			297		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	853	803	368	832	807	154	380			163		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	81	99	94	97	94	98			93		
cM capacity (veh/h)	219	264	682	207	263	802	1190			1285		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	68	68	315	466								
Volume Left	9	11	18	86								
Volume Right	10	49	16	24								
cSH	282	473	1190	1285								
Volume to Capacity	0.24	0.14	0.02	0.07								
Queue Length 95th (ft)	23	12	1	5								
Control Delay (s)	21.8	13.9	0.6	2.0								
Lane LOS	C	B	A	A								
Approach Delay (s)	21.8	13.9	0.6	2.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			53.2%		ICU Level of Service					A		
Analysis Period (min)			15									










13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	163	183	243	307	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.95	0.95	0.96	0.96
Hourly flow rate (vph)	13	194	193	256	320	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	967	326	332			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	894	166	173			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	75	84			
cM capacity (veh/h)	233	775	1241			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	207	448	332			
Volume Left	13	193	0			
Volume Right	194	0	12			
cSH	676	1241	1700			
Volume to Capacity	0.31	0.16	0.20			
Queue Length 95th (ft)	32	14	0			
Control Delay (s)	12.7	4.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.7	4.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			60.5%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	426	28	1	469
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.95	0.95	0.96	0.96
Hourly flow rate (vph)	0	0	448	29	1	489
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked	0.91					
vC, conflicting volume	954	463			478	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901	463			478	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	284	603			1095	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	478	490			
Volume Left	0	0	1			
Volume Right	0	29	0			
cSH	1700	1700	1095			
Volume to Capacity	0.00	0.28	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			


















15: Dickinson St & Trafton Rd/Hollywood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	0	2	45	25	21	2	426	0	0	409	44
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.76	0.76	0.76	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	70	0	2	59	33	28	2	468	0	0	449	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											1056	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	990	946	474	949	970	468	498			468		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	978	933	449	935	958	468	474			468		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	100	100	75	87	95	100			100		
cM capacity (veh/h)	194	261	600	240	253	599	1073			1104		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	120	470	498								
Volume Left	70	59	2	0								
Volume Right	2	28	0	48								
cSH	198	283	1073	1104								
Volume to Capacity	0.36	0.42	0.00	0.00								
Queue Length 95th (ft)	39	50	0	0								
Control Delay (s)	33.2	26.7	0.1	0.0								
Lane LOS	D	D	A									
Approach Delay (s)	33.2	26.7	0.1	0.0								
Approach LOS	D	D										
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Utilization			36.7%		ICU Level of Service				A			
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	84	391	39	49	210	75	12	108	21	48	244	46	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frt		0.99			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			1.00	1.00		0.99		
Satd. Flow (prot)		1654			1622			1702	1454		1713		
Flt Permitted		0.84			0.82			0.96	1.00		0.95		
Satd. Flow (perm)		1406			1344			1640	1454		1631		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	93	434	43	54	233	83	13	120	23	53	271	51	
RTOR Reduction (vph)	0	5	0	0	17	0	0	0	12	0	10	0	
Lane Group Flow (vph)	0	565	0	0	353	0	0	133	12	0	366	0	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	2%	0%	2%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2		2	6			
Actuated Green, G (s)		20.0			20.0			30.0	30.0		30.0		
Effective Green, g (s)		20.0			20.0			30.0	30.0		30.0		
Actuated g/C Ratio		0.33			0.33			0.50	0.50		0.50		
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		468			448			820	727		815		
v/s Ratio Prot													
v/s Ratio Perm		c0.40			0.26			0.08	0.01		c0.22		
v/c Ratio		1.21			0.79			0.16	0.02		0.45		
Uniform Delay, d1		20.0			18.1			8.2	7.6		9.7		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		112.2			8.9			0.4	0.0		1.8		
Delay (s)		132.2			26.9			8.6	7.6		11.5		
Level of Service		F			C			A	A		B		
Approach Delay (s)		132.2			26.9			8.4			11.5		
Approach LOS		F			C			A			B		
Intersection Summary													
HCM 2000 Control Delay			61.8									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.75										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			77.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Existing
Weekday PM

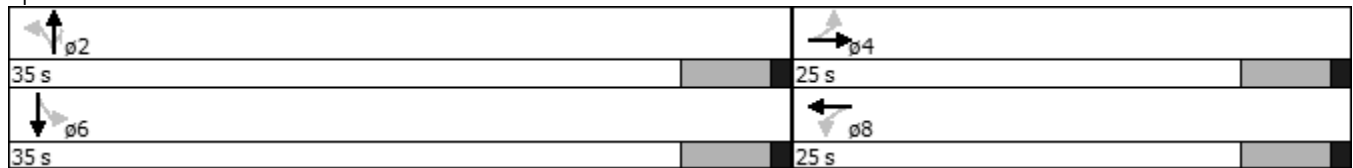


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	35	25	35	25
Maximum Split (%)	58.3%	41.7%	58.3%	41.7%
Minimum Split (s)	27	21	21	21
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	35	0	35
End Time (s)	35	0	35	0
Yield/Force Off (s)	30	55	30	55
Yield/Force Off 170(s)	19	44	19	44
Local Start Time (s)	0	35	0	35
Local Yield (s)	30	55	30	55
Local Yield 170(s)	19	44	19	44

Intersection Summary

















Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 16: Oakland St & Belmont Ave












17: Beaumont St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	403	14	11	285	3	6	20	13	8	19	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.77	0.77	0.77	0.70	0.70	0.70	0.75	0.75	0.75
Hourly flow rate (vph)	32	433	15	14	370	4	9	29	19	11	25	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782			973							
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	374			448			939	908	441	939	914	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			198			805	767	188	805	774	372
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			96	89	97	95	90	97
cM capacity (veh/h)	1196			1120			213	260	693	212	257	678
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	481	388	56	56								
Volume Left	32	14	9	11								
Volume Right	15	4	19	20								
cSH	1196	1120	315	314								
Volume to Capacity	0.03	0.01	0.18	0.18								
Queue Length 95th (ft)	2	1	16	16								
Control Delay (s)	0.8	0.4	18.9	18.9								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.8	0.4	18.9	18.9								
Approach LOS			C	C								
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			44.3%		ICU Level of Service				A			
Analysis Period (min)			15									










18: Commonwealth Ave & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	588	49	119	328	23	101
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.86	0.86
Hourly flow rate (vph)	639	53	128	353	27	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	467					
pX, platoon unblocked						
vC, conflicting volume			692		1274	666
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			692		1274	666
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		83	75
cM capacity (veh/h)			912		160	463
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	692	481	144			
Volume Left	0	128	27			
Volume Right	53	0	117			
cSH	1700	912	343			
Volume to Capacity	0.41	0.14	0.42			
Queue Length 95th (ft)	0	12	50			
Control Delay (s)	0.0	3.8	22.9			
Lane LOS		A	C			
Approach Delay (s)	0.0	3.8	22.9			
Approach LOS			C			
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			75.3%		ICU Level of Service	D
Analysis Period (min)			15			







19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	48	627	375	32	31	54
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.94	0.94	0.85	0.85
Hourly flow rate (vph)	53	689	399	34	36	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		875				
pX, platoon unblocked						
vC, conflicting volume	433				1210	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	433				1210	416
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				81	90
cM capacity (veh/h)	1137				194	637
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	742	433	100			
Volume Left	53	0	36			
Volume Right	0	34	64			
cSH	1137	1700	347			
Volume to Capacity	0.05	0.25	0.29			
Queue Length 95th (ft)	4	0	29			
Control Delay (s)	1.2	0.0	19.5			
Lane LOS	A		C			
Approach Delay (s)	1.2	0.0	19.5			
Approach LOS			C			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			72.4%		ICU Level of Service	C
Analysis Period (min)			15			
















20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	↙
Volume (veh/h)	615	0	0	423	9	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.90	0.90	0.75	0.75
Hourly flow rate (vph)	699	0	0	470	12	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1086					
pX, platoon unblocked						
vC, conflicting volume			699		1169	699
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			699		1169	699
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		94	85
cM capacity (veh/h)			907		205	440
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	699	470	80			
Volume Left	0	0	12			
Volume Right	0	0	68			
cSH	1700	1700	375			
Volume to Capacity	0.41	0.28	0.21			
Queue Length 95th (ft)	0	0	20			
Control Delay (s)	0.0	0.0	17.2			
Lane LOS			C			
Approach Delay (s)	0.0	0.0	17.2			
Approach LOS			C			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			42.7%	ICU Level of Service		A
Analysis Period (min)			15			

21: Hollywood St/Daytona St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	649	20	46	396	14	0	0	0	25	14	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	28	729	22	50	430	15	0	0	0	29	16	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1307										
pX, platoon unblocked												
vC, conflicting volume	446			752			1350	1342	740	1335	1346	438
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			752			1350	1342	740	1335	1346	438
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			100	100	100	77	89	99
cM capacity (veh/h)	1125			867			109	141	420	124	140	623
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	780	496	52									
Volume Left	28	50	29									
Volume Right	22	15	7									
cSH	1125	867	145									
Volume to Capacity	0.02	0.06	0.36									
Queue Length 95th (ft)	2	5	37									
Control Delay (s)	0.7	1.6	43.2									
Lane LOS	A	A	E									
Approach Delay (s)	0.7	1.6	43.2									
Approach LOS			E									
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			51.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	4	60	40
Average Queue (ft)	0	16	10
95th Queue (ft)	3	45	34
Link Distance (ft)	582		1472
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	140	160	171	260	284	157	106
Average Queue (ft)	57	80	87	130	146	70	45
95th Queue (ft)	101	134	148	230	250	126	91
Link Distance (ft)		477	477	546	546	686	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150						200
Storage Blk Time (%)	0	0				0	
Queuing Penalty (veh)	0	0				0	

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	52	9	17	4	31
Average Queue (ft)	7	0	1	0	13
95th Queue (ft)	31	7	9	3	34
Link Distance (ft)	547	547	358	358	355
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	T	T	TR	LTR	LTR
Maximum Queue (ft)	181	223	165	183	271	12
Average Queue (ft)	62	97	69	72	125	0
95th Queue (ft)	141	193	139	149	222	6
Link Distance (ft)	358	358	166	166	399	62
Upstream Blk Time (%)			0	0	0	
Queuing Penalty (veh)			1	2	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Lenox St & Sumner Ave

Movement	EB	EB	WB	WB
Directions Served	T	TR	LT	T
Maximum Queue (ft)	17	52	117	72
Average Queue (ft)	1	3	14	5
95th Queue (ft)	9	25	67	45
Link Distance (ft)	166	166	182	182
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	T	T	R>	L	T	TR	L	TR	LTR>
Maximum Queue (ft)	144	114	167	59	225	237	222	227	241
Average Queue (ft)	39	28	66	14	143	151	95	132	101
95th Queue (ft)	96	77	153	42	221	235	182	210	189
Link Distance (ft)	182	182	182	188	188	188	380	380	424
Upstream Blk Time (%)		0	0		2	3			
Queuing Penalty (veh)		0	1		7	12			
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	126	105	243	353	17	87
Average Queue (ft)	22	7	16	65	1	22
95th Queue (ft)	85	51	135	276	10	77
Link Distance (ft)	188	188	408	408	56	198
Upstream Blk Time (%)	0		0	0		
Queuing Penalty (veh)	0		0	1		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	LR
Maximum Queue (ft)	159	170	212	239	258	288
Average Queue (ft)	66	61	128	180	97	185
95th Queue (ft)	135	137	227	251	205	271
Link Distance (ft)	408	408	199	199	318	318
Upstream Blk Time (%)			1	6	0	0
Queuing Penalty (veh)			4	31	0	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 10: Daytona St & Sumner Ave

Movement	EB	WB	WB	NB
Directions Served	T	LT	T	LR
Maximum Queue (ft)	16	108	192	106
Average Queue (ft)	1	11	31	41
95th Queue (ft)	12	62	121	86
Link Distance (ft)	199	1113	1113	505
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	175	650	601	61	146	182	49	74	39	95
Average Queue (ft)	152	374	327	7	69	97	11	28	14	36
95th Queue (ft)	223	758	689	29	126	153	29	61	37	75
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	74	0			4					
Queuing Penalty (veh)	257	0			1					

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	47	87	73	65
Average Queue (ft)	17	27	4	14
95th Queue (ft)	43	59	32	49
Link Distance (ft)		220	424	504
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	78	59	9
Average Queue (ft)	31	32	0
95th Queue (ft)	56	69	3
Link Distance (ft)	289	54	380
Upstream Blk Time (%)		2	
Queuing Penalty (veh)		12	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB
Directions Served	TR
Maximum Queue (ft)	118
Average Queue (ft)	22
95th Queue (ft)	76
Link Distance (ft)	410
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	64	91
Average Queue (ft)	28	36
95th Queue (ft)	54	68
Link Distance (ft)	768	266
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	158	194	134	26	190
Average Queue (ft)	66	92	48	4	76
95th Queue (ft)	125	161	109	18	146
Link Distance (ft)	925	684	693		511
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			3		
Queuing Penalty (veh)			0		

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	18	69	58
Average Queue (ft)	4	1	32	18
95th Queue (ft)	19	8	55	46
Link Distance (ft)	684		355	451
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	33	63	69
Average Queue (ft)	1	21	27
95th Queue (ft)	14	52	51
Link Distance (ft)	376	313	1084
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	254	46
Average Queue (ft)	72	2
95th Queue (ft)	173	14
Link Distance (ft)	313	130
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Walden St & Belmont Ave

Movement	EB	WB	NB
Directions Served	T	T	LR
Maximum Queue (ft)	33	10	63
Average Queue (ft)	1	0	22
95th Queue (ft)	14	0	48
Link Distance (ft)	130	155	264
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	135	132	60
Average Queue (ft)	20	30	15
95th Queue (ft)	75	96	45
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	1		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			











Intersection: 34: Belmont Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 331















1: Main Greeting Rd & Sumner Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	888	8	25	1261	3	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.38	0.38
Hourly flow rate (vph)	987	9	26	1300	8	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.69	
vC, conflicting volume			996		1693	498
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			996		1115	498
tC, single (s)			4.3		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			96		94	95
cM capacity (veh/h)			655		137	523
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	658	338	26	650	650	32
Volume Left	0	0	26	0	0	8
Volume Right	0	9	0	0	0	24
cSH	1700	1700	655	1700	1700	306
Volume to Capacity	0.39	0.20	0.04	0.38	0.38	0.10
Queue Length 95th (ft)	0	0	3	0	0	9
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	18.1
Lane LOS			B			C
Approach Delay (s)	0.0		0.2			18.1
Approach LOS						C
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			44.9%		ICU Level of Service	A
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	  			
Volume (vph)	128	909	1102	68	183	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1703	3934	3505		1736	1468
Flt Permitted	0.12	1.00	1.00		0.95	1.00
Satd. Flow (perm)	220	3934	3505		1736	1468
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	144	1021	1238	76	206	106
RTOR Reduction (vph)	0	0	7	0	0	14
Lane Group Flow (vph)	144	1021	1307	0	206	92
Heavy Vehicles (%)	6%	4%	2%	4%	4%	10%
Turn Type	pm+pt	NA	NA		Prot	pt+ov
Protected Phases	7	4	8		6	6 7
Permitted Phases	4					
Actuated Green, G (s)	35.7	35.7	27.6		11.7	19.8
Effective Green, g (s)	35.7	35.7	27.6		11.7	19.8
Actuated g/C Ratio	0.62	0.62	0.48		0.20	0.34
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)	216	2446	1685		353	506
v/s Ratio Prot	0.04	c0.26	c0.37		c0.12	0.06
v/s Ratio Perm	0.38					
v/c Ratio	0.67	0.42	0.78		0.58	0.18
Uniform Delay, d1	8.7	5.5	12.3		20.6	13.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.6	0.1	2.3		2.5	0.2
Delay (s)	16.2	5.7	14.6		23.1	13.3
Level of Service	B	A	B		C	B
Approach Delay (s)		7.0	14.6		19.8	
Approach LOS		A	B		B	
Intersection Summary						
HCM 2000 Control Delay			12.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			57.4		Sum of lost time (s)	15.0
Intersection Capacity Utilization			62.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

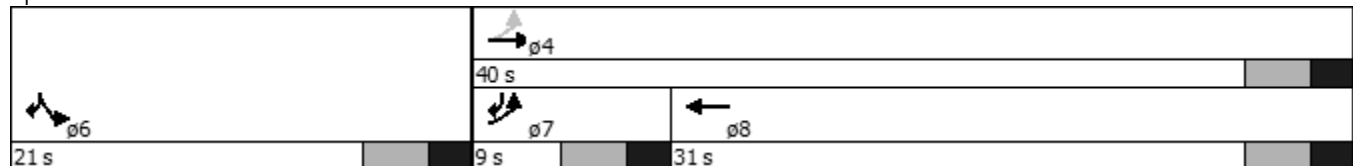


Phase Number	4	6	7	8
Movement	EBTL	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Min	None	None	Min
Maximum Split (s)	40	21	9	31
Maximum Split (%)	65.6%	34.4%	14.8%	50.8%
Minimum Split (s)	21	21	9	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	21	0	21	30
End Time (s)	0	21	30	0
Yield/Force Off (s)	56	16	25	56
Yield/Force Off 170(s)	56	5	25	56
Local Start Time (s)	21	0	21	30
Local Yield (s)	56	16	25	56
Local Yield 170(s)	56	5	25	56

Intersection Summary

Cycle Length		61
Control Type	Actuated-Uncoordinated	
Natural Cycle		60







Splits and Phases: 2: Sumner Ave & Oakland St



3: Sumner Ave & Belmont St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

















Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↕↕	
Volume (veh/h)	9	930	1138	84	0	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	1011	1237	91	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	433			
pX, platoon unblocked	0.83				0.88	0.83
vC, conflicting volume	1328				1808	664
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	987				1126	187
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	97
cM capacity (veh/h)	588				175	689
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	347	674	825	504	23	
Volume Left	10	0	0	0	0	
Volume Right	0	0	0	91	23	
cSH	588	1700	1700	1700	689	
Volume to Capacity	0.02	0.40	0.49	0.30	0.03	
Queue Length 95th (ft)	1	0	0	0	3	
Control Delay (s)	0.5	0.0	0.0	0.0	10.4	
Lane LOS	A				B	
Approach Delay (s)	0.2		0.0		10.4	
Approach LOS					B	
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			44.1%		ICU Level of Service	A
Analysis Period (min)			15			

4: Cliftwood St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	911	0	0	1165	8	203	0	6	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			1.00			0.86	
Flt Protected		1.00			1.00			0.95			1.00	
Satd. Flow (prot)		3471			3571			1805			1644	
Flt Permitted		0.95			1.00			0.73			1.00	
Satd. Flow (perm)		3306			3571			1382			1644	
Peak-hour factor, PHF	0.91	0.91	0.91	0.93	0.93	0.93	0.92	0.92	0.92	0.25	0.25	0.25
Adj. Flow (vph)	3	1001	0	0	1253	9	221	0	7	0	0	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	0	0	3	0
Lane Group Flow (vph)	0	1004	0	0	1262	0	0	209	0	0	1	0
Heavy Vehicles (%)	0%	4%	2%	15%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		61.3			61.3			18.7			18.7	
Effective Green, g (s)		61.3			61.3			18.7			18.7	
Actuated g/C Ratio		0.68			0.68			0.21			0.21	
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)		2251			2432			287			341	
v/s Ratio Prot					c0.35						0.00	
v/s Ratio Perm		0.30						c0.15				
v/c Ratio		0.45			0.52			0.73			0.00	
Uniform Delay, d1		6.6			7.1			33.3			28.3	
Progression Factor		1.00			0.42			1.00			1.00	
Incremental Delay, d2		0.6			0.7			8.9			0.0	
Delay (s)		7.2			3.7			42.2			28.3	
Level of Service		A			A			D			C	
Approach Delay (s)		7.2			3.7			42.2			28.3	
Approach LOS		A			A			D			C	
Intersection Summary												
HCM 2000 Control Delay			8.7								A	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			90.0						10.0			
Intersection Capacity Utilization			59.1%								B	
Analysis Period (min)			15									
c Critical Lane Group												

4: Cliftwood St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

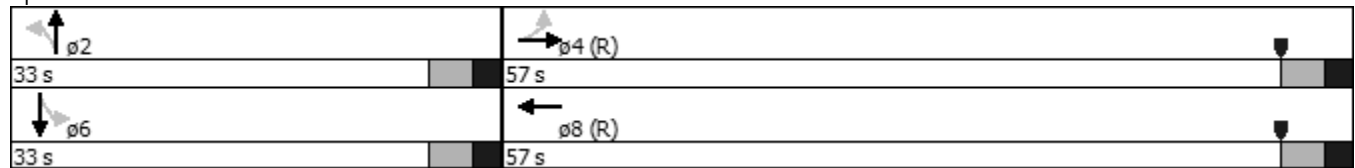


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBT
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	33	57	33	57
Maximum Split (%)	36.7%	63.3%	36.7%	63.3%
Minimum Split (s)	21	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	18	51	18	51
End Time (s)	51	18	51	18
Yield/Force Off (s)	46	13	46	13
Yield/Force Off 170(s)	35	2	35	2
Local Start Time (s)	5	38	5	38
Local Yield (s)	33	0	33	0
Local Yield 170(s)	22	79	22	79

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 13 (14%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow	







Splits and Phases: 4: Cliftwood St & Sumner Ave



5: Lenox St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Volume (veh/h)	809	95	13	941	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	861	101	14	1001	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)	223			292		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			962		1439	481
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			664		560	113
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			815		398	807
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	574	388	348	667		
Volume Left	0	0	14	0		
Volume Right	0	101	0	0		
cSH	1700	1700	815	1700		
Volume to Capacity	0.34	0.23	0.02	0.39		
Queue Length 95th (ft)	0	0	1	0		
Control Delay (s)	0.0	0.0	0.6	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		0.2			
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			42.4%		ICU Level of Service	A
Analysis Period (min)			15			

6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Signalized Intersection Capacity Analysis

Weekday AM

Movement	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↔		↔	↑↑		↔	↔			↔	
Volume (vph)	508	270	85	35	1238	67	124	229	41	12	40	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	0.95	1.00		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.85		1.00	0.99		1.00	0.98			0.90	
Flt Protected	1.00	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	3539	1576		1805	3549		1805	1797			1650	
Flt Permitted	1.00	1.00		0.95	1.00		0.54	1.00			0.95	
Satd. Flow (perm)	3539	1576		1805	3549		1019	1797			1571	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	540	287	90	37	1317	71	132	244	44	13	43	133
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	540	326	0	37	1388	0	132	288	0	0	191	0
Heavy Vehicles (%)	2%	2%	4%	0%	1%	0%	0%	3%	5%	8%	2%	4%
Turn Type	NA	Prot		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	47.8	47.8		4.3	58.1		19.9	19.9			19.9	
Effective Green, g (s)	47.8	47.8		4.3	58.1		19.9	19.9			19.9	
Actuated g/C Ratio	0.53	0.53		0.05	0.65		0.22	0.22			0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	1879	837		86	2291		225	397			347	
v/s Ratio Prot	0.15	0.21		0.02	c0.39			c0.16				
v/s Ratio Perm							0.13				0.12	
v/c Ratio	0.29	0.39		0.43	0.61		0.59	0.73			0.55	
Uniform Delay, d1	11.7	12.5		41.7	9.3		31.4	32.5			31.1	
Progression Factor	0.59	0.44		1.16	0.61		1.00	1.00			1.00	
Incremental Delay, d2	0.4	1.3		3.2	1.1		3.9	6.5			1.9	
Delay (s)	7.2	6.7		51.6	6.8		35.2	39.0			33.0	
Level of Service	A	A		D	A		D	D			C	
Approach Delay (s)	7.0				7.9			37.8			33.0	
Approach LOS	A				A			D			C	

Intersection Summary

HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			






6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Signalized Intersection Capacity Analysis

Weekday AM



Movement	SBR2
Lane Configurations	
Volume (vph)	3
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	3
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
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)	
Approach LOS	
Intersection Summary	

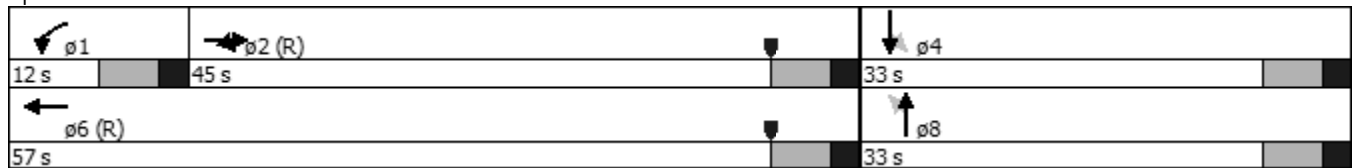
6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 Timing Report, Sorted By Phase Weekday AM

					
Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBTL	WBT	NBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize					
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	12	45	33	57	33
Maximum Split (%)	13.3%	50.0%	36.7%	63.3%	36.7%
Minimum Split (s)	10	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	39	51	6	39	6
End Time (s)	51	6	39	6	39
Yield/Force Off (s)	45	0	33	0	33
Yield/Force Off 170(s)	45	79	22	0	22
Local Start Time (s)	39	51	6	39	6
Local Yield (s)	45	0	33	0	33
Local Yield 170(s)	45	79	22	0	22

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 55
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

















Splits and Phases: 6: Dickinson St & Belmont Ave & Sumner Ave



8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	547	1	2	1304	30	0	1	0	4	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.25	0.25	0.25	0.75	0.75	0.75
Hourly flow rate (vph)	11	588	1	2	1417	33	0	4	0	5	3	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		288			475							
pX, platoon unblocked	0.88			0.92			0.92	0.92	0.92	0.92	0.92	0.88
vC, conflicting volume	1450			589			1337	2065	295	1756	2049	725
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1242			377			801	1591	56	1255	1573	419
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	7.1
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	98			100			100	96	100	95	97	98
cM capacity (veh/h)	500			1096			242	98	923	114	100	492
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	305	295	711	741	4	20						
Volume Left	11	0	2	0	0	5						
Volume Right	0	1	0	33	0	12						
cSH	500	1700	1096	1700	98	205						
Volume to Capacity	0.02	0.17	0.00	0.44	0.04	0.10						
Queue Length 95th (ft)	2	0	0	0	3	8						
Control Delay (s)	0.7	0.0	0.1	0.0	43.4	24.5						
Lane LOS	A		A		E	C						
Approach Delay (s)	0.4		0.0		43.4	24.5						
Approach LOS					E	C						
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			49.5%		ICU Level of Service				A			
Analysis Period (min)			15									

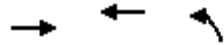
9: Ormond St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↙	
Volume (vph)	612	0	0	919	432	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	15	12	16	12	12
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	0.98	
Flt Protected	1.00			1.00	0.96	
Satd. Flow (prot)	3421			4051	3451	
Flt Permitted	1.00			1.00	0.96	
Satd. Flow (perm)	3421			4051	3451	
Peak-hour factor, PHF	0.99	0.99	0.93	0.93	0.92	0.92
Adj. Flow (vph)	618	0	0	988	470	93
RTOR Reduction (vph)	0	0	0	0	23	0
Lane Group Flow (vph)	618	0	0	988	540	0
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Actuated Green, G (s)	60.4			60.4	19.6	
Effective Green, g (s)	60.4			60.4	19.6	
Actuated g/C Ratio	0.67			0.67	0.22	
Clearance Time (s)	5.0			5.0	5.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	2295			2718	751	
v/s Ratio Prot	0.18			c0.24	c0.16	
v/s Ratio Perm						
v/c Ratio	0.27			0.36	0.72	
Uniform Delay, d1	5.9			6.4	32.6	
Progression Factor	0.36			1.00	1.01	
Incremental Delay, d2	0.3			0.4	3.3	
Delay (s)	2.4			6.8	36.1	
Level of Service	A			A	D	
Approach Delay (s)	2.4			6.8	36.1	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			13.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			48.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

9: Ormond St & Sumner Ave
Timing Report, Sorted By Phase

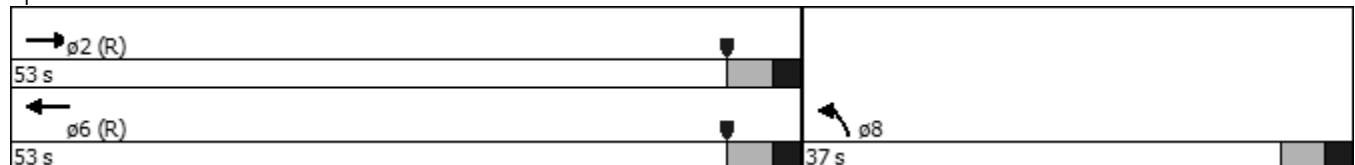


Phase Number	2	6	8
Movement	EBT	WBT	NBL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	C-Min	C-Min	Min
Maximum Split (s)	53	53	37
Maximum Split (%)	58.9%	58.9%	41.1%
Minimum Split (s)	21	21	21
Yellow Time (s)	3	3	3
All-Red Time (s)	2	2	2
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	80	80	43
End Time (s)	43	43	80
Yield/Force Off (s)	38	38	75
Yield/Force Off 170(s)	27	27	75
Local Start Time (s)	42	42	5
Local Yield (s)	0	0	37
Local Yield 170(s)	79	79	37

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 38 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	










Splits and Phases: 9: Ormond St & Sumner Ave



10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs





















Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	654	11	9	917	28	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.93	0.93	0.78	0.78
Hourly flow rate (vph)	696	12	10	986	36	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	257			1212		
pX, platoon unblocked			0.93		0.95	0.93
vC, conflicting volume			707		1214	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			541		796	162
tC, single (s)			4.5		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			99		88	95
cM capacity (veh/h)			836		308	802
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	464	244	338	657	79	
Volume Left	0	0	10	0	36	
Volume Right	0	12	0	0	44	
cSH	1700	1700	836	1700	465	
Volume to Capacity	0.27	0.14	0.01	0.39	0.17	
Queue Length 95th (ft)	0	0	1	0	15	
Control Delay (s)	0.0	0.0	0.4	0.0	14.3	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.1		14.3	
Approach LOS					B	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			42.0%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	691	4	20	859	122	38	72	18	47	66	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3572		1805	3512		1805	1766		1736	1709	
Flt Permitted	0.25	1.00		0.31	1.00		0.68	1.00		0.69	1.00	
Satd. Flow (perm)	470	3572		581	3512		1286	1766		1269	1709	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	743	4	22	924	131	41	77	19	51	71	54
RTOR Reduction (vph)	0	1	0	0	28	0	0	11	0	0	29	0
Lane Group Flow (vph)	157	746	0	22	1027	0	41	85	0	51	96	0
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	4%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	188	1428		232	1404		514	706		507	683	
v/s Ratio Prot		0.21			0.29			0.05			c0.06	
v/s Ratio Perm	c0.33			0.04			0.03			0.04		
v/c Ratio	0.84	0.52		0.09	0.73		0.08	0.12		0.10	0.14	
Uniform Delay, d1	10.8	9.1		7.5	10.2		7.4	7.6		7.5	7.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.4	1.4		0.8	3.4		0.3	0.3		0.4	0.4	
Delay (s)	44.2	10.5		8.3	13.6		7.7	7.9		7.9	8.1	
Level of Service	D	B		A	B		A	A		A	A	
Approach Delay (s)		16.3			13.5			7.9			8.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

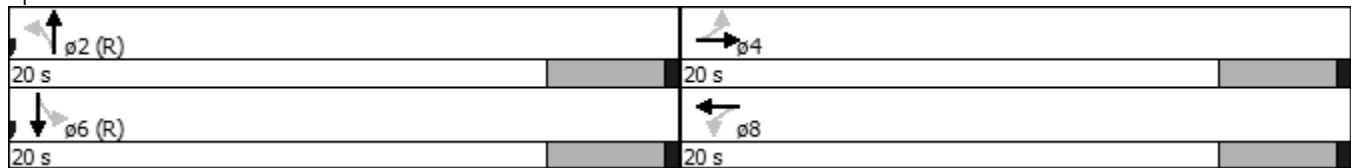


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	36	16	36
Yield/Force Off 170(s)	5	25	5	25
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	36	16	36
Local Yield 170(s)	5	25	5	25

Intersection Summary

















Cycle Length 40
Control Type Pretimed
Natural Cycle 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave



2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis










Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	18	3	12	15	69	13	334	11	31	178	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.63	0.63	0.80	0.80	0.80	0.88	0.88	0.88	0.96	0.96	0.96
Hourly flow rate (vph)	6	29	5	15	19	86	15	380	12	32	185	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	766	676	190	689	675	386	195			392		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	663	562	190	576	560	231	195			238		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	92	99	96	95	88	99			97		
cM capacity (veh/h)	272	370	857	334	371	712	1304			1177		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	40	120	407	227								
Volume Left	6	15	15	32								
Volume Right	5	86	12	9								
cSH	374	554	1304	1177								
Volume to Capacity	0.11	0.22	0.01	0.03								
Queue Length 95th (ft)	9	20	1	2								
Control Delay (s)	15.8	13.3	0.4	1.4								
Lane LOS	C	B	A	A								
Approach Delay (s)	15.8	13.3	0.4	1.4								
Approach LOS	C	B										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			37.3%		ICU Level of Service				A			
Analysis Period (min)			15									

13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs










Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	105	196	465	203	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	4	125	213	505	245	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked						
vC, conflicting volume	1180	249	253			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1180	249	253			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	98	84	84			
cM capacity (veh/h)	153	785	1318			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	129	718	253			
Volume Left	4	213	0			
Volume Right	125	0	8			
cSH	704	1318	1700			
Volume to Capacity	0.18	0.16	0.15			
Queue Length 95th (ft)	17	14	0			
Control Delay (s)	11.3	3.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.3	3.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			63.1%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	661	20	0	308
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	0	0	718	22	0	371
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked						
vC, conflicting volume	1100	729			740	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1100	729			740	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	237	426			876	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	740	371			
Volume Left	0	0	0			
Volume Right	0	22	0			
cSH	1700	1700	876			
Volume to Capacity	0.00	0.44	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			39.3%	ICU Level of Service		A
Analysis Period (min)			15			


















15: Dickinson St & Trafton Rd/Hollywood St 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	1	24	7	35	1	584	0	0	257	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.92	0.91	0.91	0.91	0.94	0.94	0.94
Hourly flow rate (vph)	59	0	1	26	8	38	1	642	0	0	273	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)											1056	
pX, platoon unblocked												
vC, conflicting volume	970	929	285	930	940	642	296			642		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	970	929	285	930	940	642	296			642		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	100	89	97	92	100			100		
cM capacity (veh/h)	211	270	759	237	266	472	1277			952		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	72	643	296								
Volume Left	59	26	1	0								
Volume Right	1	38	0	22								
cSH	214	327	1277	952								
Volume to Capacity	0.28	0.22	0.00	0.00								
Queue Length 95th (ft)	28	21	0	0								
Control Delay (s)	28.3	19.1	0.0	0.0								
Lane LOS	D	C	A									
Approach Delay (s)	28.3	19.1	0.0	0.0								
Approach LOS	D	C										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			44.2%		ICU Level of Service				A			
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	39	58	177	85	305	39	12	148	10	9	229	31		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12		
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0			
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00			
Frt		0.91			0.99			1.00	0.85		0.98			
Flt Protected		0.99			0.99			1.00	1.00		1.00			
Satd. Flow (prot)		1491			1626			1586	1411		1629			
Flt Permitted		0.90			0.87			0.96	1.00		0.99			
Satd. Flow (perm)		1346			1431			1534	1411		1612			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
Adj. Flow (vph)	43	64	197	94	339	43	13	164	11	10	254	34		
RTOR Reduction (vph)	0	109	0	0	6	0	0	0	8	0	8	0		
Lane Group Flow (vph)	0	195	0	0	470	0	0	177	3	0	290	0		
Heavy Vehicles (%)	5%	9%	2%	0%	4%	0%	25%	6%	3%	0%	6%	13%		
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA			
Protected Phases		4			8			2			6			
Permitted Phases	4			8			2		2	6				
Actuated Green, G (s)		19.2			19.2			13.6	13.6		13.6			
Effective Green, g (s)		19.2			19.2			13.6	13.6		13.6			
Actuated g/C Ratio		0.45			0.45			0.32	0.32		0.32			
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0			
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0			
Lane Grp Cap (vph)		603			641			487	448		512			
v/s Ratio Prot														
v/s Ratio Perm		0.15			0.33			0.12	0.00		0.18			
v/c Ratio		0.32			0.73			0.36	0.01		0.57			
Uniform Delay, d1		7.6			9.7			11.3	10.0		12.1			
Progression Factor		1.00			1.00			1.00	1.00		1.00			
Incremental Delay, d2		0.3			4.3			0.5	0.0		1.4			
Delay (s)		7.9			14.0			11.7	10.0		13.6			
Level of Service		A			B			B	A		B			
Approach Delay (s)		7.9			14.0			11.6			13.6			
Approach LOS		A			B			B			B			
Intersection Summary														
HCM 2000 Control Delay			12.1									HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.66											
Actuated Cycle Length (s)			42.8						10.0					
Intersection Capacity Utilization			70.7%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

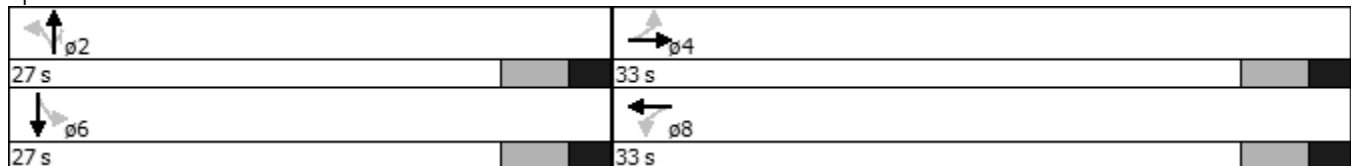


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	27	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22	55	22	55
Yield/Force Off 170(s)	22	44	22	44
Local Start Time (s)	0	27	0	27
Local Yield (s)	22	55	22	55
Local Yield 170(s)	22	44	22	44

















Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 16: Oakland St & Belmont Ave



17: Beaumont St & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	42	2	4	316	5	87	9	1	0	14	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.77	0.77	0.77	0.75	0.75	0.75	0.69	0.69	0.69
Hourly flow rate (vph)	22	54	3	5	410	6	116	12	1	0	20	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782			973							
pX, platoon unblocked												
vC, conflicting volume	417			56			549	526	55	530	524	414
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	417			56			549	526	55	530	524	414
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	98			100			72	97	100	100	95	97
cM capacity (veh/h)	1153			1561			416	450	1017	445	451	624
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	78	422	129	36								
Volume Left	22	5	116	0								
Volume Right	3	6	1	16								
cSH	1153	1561	421	513								
Volume to Capacity	0.02	0.00	0.31	0.07								
Queue Length 95th (ft)	1	0	32	6								
Control Delay (s)	2.4	0.1	17.3	12.5								
Lane LOS	A	A	C	B								
Approach Delay (s)	2.4	0.1	17.3	12.5								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			36.0%		ICU Level of Service				A			
Analysis Period (min)			15									

18: Commonwealth Ave & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM 2010 Roundabout Weekday AM

Intersection

Intersection Delay, s/veh 8.0
 Intersection LOS A









Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	467	64	104
Demand Flow Rate, veh/h	490	67	105
Vehicles Circulating, veh/h	67	0	405
Vehicles Exiting, veh/h	0	510	152
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.9	3.8	6.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	L	R
Assumed Moves	TR	L	R
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	490	67	105
Cap Entry Lane, veh/h	1057	1130	754
Entry HV Adj Factor	0.953	0.955	0.990
Flow Entry, veh/h	467	64	104
Cap Entry, veh/h	1007	1079	746
V/C Ratio	0.464	0.059	0.139
Control Delay, s/veh	8.9	3.8	6.3
LOS	A	A	A
95th %tile Queue, veh	3	0	0

19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs







Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	80	343	84	451	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.96	0.96	0.77	0.77
Hourly flow rate (vph)	87	373	88	470	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)		875				
pX, platoon unblocked						
vC, conflicting volume	557				869	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	557				869	322
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				100	100
cM capacity (veh/h)	1024				297	723
Direction, Lane #	EB 1	WB 1				
Volume Total	460	557				
Volume Left	87	0				
Volume Right	0	470				
cSH	1024	1700				
Volume to Capacity	0.08	0.33				
Queue Length 95th (ft)	7	0				
Control Delay (s)	2.5	0.0				
Lane LOS	A					
Approach Delay (s)	2.5	0.0				
Approach LOS						
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			61.4%		ICU Level of Service	B
Analysis Period (min)			15			

20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis
















2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	
Volume (veh/h)	342	0	0	540	6	42
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.96	0.96	0.75	0.75
Hourly flow rate (vph)	402	0	0	562	8	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1086					
pX, platoon unblocked						
vC, conflicting volume			402		965	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			402		965	402
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		97	91
cM capacity (veh/h)			1167		285	637
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	402	562	64			
Volume Left	0	0	8			
Volume Right	0	0	56			
cSH	1700	1700	552			
Volume to Capacity	0.24	0.33	0.12			
Queue Length 95th (ft)	0	0	10			
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			0.8			
Intersection Capacity Utilization			38.4%		ICU Level of Service	A
Analysis Period (min)			15			

2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis

Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	347	11	43	529	34	0	0	0	10	8	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92	0.68	0.68	0.68
Hourly flow rate (vph)	35	381	12	45	557	36	0	0	0	15	12	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)		1307										
pX, platoon unblocked												
vC, conflicting volume	593			393			1130	1141	387	1123	1129	575
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	593			393			1130	1141	387	1123	1129	575
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.2	3.3
p0 queue free %	96			96			100	100	100	91	93	100
cM capacity (veh/h)	978			1165			163	188	665	167	172	522
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	429	638	28									
Volume Left	35	45	15									
Volume Right	12	36	1									
cSH	978	1165	175									
Volume to Capacity	0.04	0.04	0.16									
Queue Length 95th (ft)	3	3	14									
Control Delay (s)	1.1	1.0	29.4									
Lane LOS	A	A	D									
Approach Delay (s)	1.1	1.0	29.4									
Approach LOS			D									
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			50.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	13	57	100
Average Queue (ft)	0	15	21
95th Queue (ft)	4	47	66
Link Distance (ft)	582		1472
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	160	218	230	233	256	264	196
Average Queue (ft)	52	104	121	120	131	135	60
95th Queue (ft)	101	170	187	196	210	222	143
Link Distance (ft)		477	477	546	546	686	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150						200
Storage Blk Time (%)	0	1				2	0
Queuing Penalty (veh)	0	1				3	0

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	WB	SB
Directions Served	LT	T	T	LR
Maximum Queue (ft)	78	82	11	49
Average Queue (ft)	17	3	0	12
95th Queue (ft)	58	32	8	38
Link Distance (ft)	547	547	358	355
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (ft)	241	315	176	183	222
Average Queue (ft)	87	146	70	71	102
95th Queue (ft)	183	258	150	167	176
Link Distance (ft)	358	358	166	166	399
Upstream Blk Time (%)		0	0	1	
Queuing Penalty (veh)		0	2	3	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Lenox St & Sumner Ave

Movement	EB	EB	WB	WB
Directions Served	T	TR	LT	T
Maximum Queue (ft)	103	184	135	153
Average Queue (ft)	3	36	36	18
95th Queue (ft)	38	137	102	88
Link Distance (ft)	166	166	182	182
Upstream Blk Time (%)	0	1	0	0
Queuing Penalty (veh)	0	8	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	T	T	R>	L	T	TR	L	TR	LTR
Maximum Queue (ft)	167	154	193	94	210	213	122	222	382
Average Queue (ft)	72	56	125	28	109	109	52	117	167
95th Queue (ft)	143	127	217	72	201	199	102	191	313
Link Distance (ft)	182	182	182	188	188	188	380	380	430
Upstream Blk Time (%)	0	0	5		1	1			0
Queuing Penalty (veh)	0	0	18		3	4			0
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	131	128	42	125	37	62
Average Queue (ft)	21	8	4	10	7	20
95th Queue (ft)	79	61	22	74	28	49
Link Distance (ft)	188	188	408	408	56	198
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	LR
Maximum Queue (ft)	215	231	223	232	244	302
Average Queue (ft)	60	59	88	142	82	169
95th Queue (ft)	149	161	189	234	183	264
Link Distance (ft)	408	408	199	199	318	318
Upstream Blk Time (%)			0	3	0	0
Queuing Penalty (veh)			2	10	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 10: Daytona St & Sumner Ave

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (ft)	84	133	73
Average Queue (ft)	12	17	30
95th Queue (ft)	50	79	58
Link Distance (ft)	1113	1113	505
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	166	277	223	42	132	158	102	185	176	273
Average Queue (ft)	81	63	61	9	59	60	22	82	60	136
95th Queue (ft)	158	192	171	26	112	130	62	149	142	234
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	6	0		0	2			3	0	4
Queuing Penalty (veh)	28	0		0	1			1	1	4

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	63	74	88	106
Average Queue (ft)	28	23	6	19
95th Queue (ft)	53	50	32	62
Link Distance (ft)		220	430	503
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	112	64	31
Average Queue (ft)	45	24	2
95th Queue (ft)	84	62	15
Link Distance (ft)	289	54	380
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		5	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	87	54
Average Queue (ft)	11	5
95th Queue (ft)	50	28
Link Distance (ft)	410	54
Upstream Blk Time (%)		0
Queuing Penalty (veh)		1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	56	79	30
Average Queue (ft)	26	37	2
95th Queue (ft)	55	65	15
Link Distance (ft)	768	266	601
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	291	330	104	20	219
Average Queue (ft)	117	115	42	3	87
95th Queue (ft)	226	258	90	16	169
Link Distance (ft)	925	684	693		511
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			2		
Queuing Penalty (veh)			0		

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	27	24	65	34
Average Queue (ft)	4	1	33	22
95th Queue (ft)	18	12	50	43
Link Distance (ft)	684		355	451
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	175	18	66
Average Queue (ft)	34	1	27
95th Queue (ft)	122	9	57
Link Distance (ft)	335	321	1103
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	195	30
Average Queue (ft)	52	3
95th Queue (ft)	137	17
Link Distance (ft)	313	124
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Walden St & Belmont Ave

Movement	EB	NB
Directions Served	T	LR
Maximum Queue (ft)	20	46
Average Queue (ft)	1	17
95th Queue (ft)	13	35
Link Distance (ft)	124	272
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	105	156	40
Average Queue (ft)	20	36	13
95th Queue (ft)	71	106	34
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			







Intersection: 34: Belmont Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 98












1: Main Greeting Rd & Sumner Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Volume (veh/h)	1304	26	20	1004	5	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.39	0.39
Hourly flow rate (vph)	1610	32	23	1154	13	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.76	
vC, conflicting volume			1642		2249	821
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1642		2009	821
tC, single (s)			4.4		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			93		66	83
cM capacity (veh/h)			336		37	301
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1073	569	23	577	577	64
Volume Left	0	0	23	0	0	13
Volume Right	0	32	0	0	0	51
cSH	1700	1700	336	1700	1700	124
Volume to Capacity	0.63	0.33	0.07	0.34	0.34	0.51
Queue Length 95th (ft)	0	0	5	0	0	60
Control Delay (s)	0.0	0.0	16.5	0.0	0.0	61.2
Lane LOS			C			F
Approach Delay (s)	0.0		0.3			61.2
Approach LOS						F
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			46.9%		ICU Level of Service	A
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	115	1125	902	18	325	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1736	4011	3489		1770	1553
Flt Permitted	0.13	1.00	1.00		0.95	1.00
Satd. Flow (perm)	246	4011	3489		1770	1553
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	134	1308	1049	21	378	147
RTOR Reduction (vph)	0	0	2	0	0	42
Lane Group Flow (vph)	134	1308	1068	0	378	105
Heavy Vehicles (%)	4%	2%	3%	11%	2%	4%
Turn Type	pm+pt	NA	NA		Prot	pt+ov
Protected Phases	7	4	8		6	6 7
Permitted Phases	4					
Actuated Green, G (s)	38.2	38.2	29.1		18.1	27.2
Effective Green, g (s)	38.2	38.2	29.1		18.1	27.2
Actuated g/C Ratio	0.58	0.58	0.44		0.27	0.41
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)	233	2311	1531		483	637
v/s Ratio Prot	0.04	c0.33	c0.31		c0.21	0.07
v/s Ratio Perm	0.29					
v/c Ratio	0.58	0.57	0.70		0.78	0.17
Uniform Delay, d1	9.4	8.8	15.0		22.3	12.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.3	1.4		8.1	0.1
Delay (s)	12.8	9.2	16.4		30.4	12.5
Level of Service	B	A	B		C	B
Approach Delay (s)		9.5	16.4		25.4	
Approach LOS		A	B		C	
Intersection Summary						
HCM 2000 Control Delay			14.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			66.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			62.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

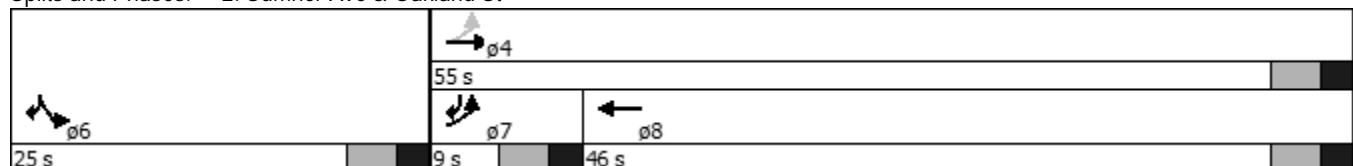


Phase Number	4	6	7	8
Movement	EBTL	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Min	None	None	Min
Maximum Split (s)	55	25	9	46
Maximum Split (%)	68.8%	31.3%	11.3%	57.5%
Minimum Split (s)	21	21	9	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	25	0	25	34
End Time (s)	0	25	34	0
Yield/Force Off (s)	75	20	29	75
Yield/Force Off 170(s)	75	9	29	75
Local Start Time (s)	25	0	25	34
Local Yield (s)	75	20	29	75
Local Yield 170(s)	75	9	29	75

Intersection Summary

Cycle Length		80
Control Type	Actuated-Uncoordinated	
Natural Cycle		55










Splits and Phases: 2: Sumner Ave & Oakland St



3: Sumner Ave & Belmont St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

















Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	1303	871	17	3	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	30	1498	1001	20	3	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	433			
pX, platoon unblocked	0.90				0.84	0.90
vC, conflicting volume	1021				1820	510
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794				1040	225
tC, single (s)	4.1				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	96				98	98
cM capacity (veh/h)	750				184	682
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	529	998	667	353	17	
Volume Left	30	0	0	0	3	
Volume Right	0	0	0	20	14	
cSH	750	1700	1700	1700	443	
Volume to Capacity	0.04	0.59	0.39	0.21	0.04	
Queue Length 95th (ft)	3	0	0	0	3	
Control Delay (s)	1.1	0.0	0.0	0.0	13.5	
Lane LOS	A				B	
Approach Delay (s)	0.4		0.0		13.5	
Approach LOS					B	
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			64.5%		ICU Level of Service	C
Analysis Period (min)			15			

4: Cliftwood St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1401	0	0	987	0	146	0	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			1.00				
Frt		1.00			1.00			0.99				
Flt Protected		1.00			1.00			0.96				
Satd. Flow (prot)		3471			3471			1799				
Flt Permitted		1.00			1.00			0.74				
Satd. Flow (perm)		3471			3471			1393				
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1506	0	0	1109	0	159	0	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1506	0	0	1109	0	0	150	0	0	0	0
Heavy Vehicles (%)	0%	4%	3%	3%	4%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		65.5			65.5			14.5				
Effective Green, g (s)		65.5			65.5			14.5				
Actuated g/C Ratio		0.73			0.73			0.16				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		2526			2526			224				
v/s Ratio Prot		c0.43			0.32							
v/s Ratio Perm								c0.11				
v/c Ratio		0.60			0.44			0.67				
Uniform Delay, d1		5.9			4.9			35.5				
Progression Factor		1.00			0.38			1.00				
Incremental Delay, d2		1.0			0.5			7.4				
Delay (s)		6.9			2.4			42.9				
Level of Service		A			A			D				
Approach Delay (s)		6.9			2.4			42.9			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			7.3									A
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			90.0						10.0			
Intersection Capacity Utilization			55.8%									B
Analysis Period (min)			15									
c Critical Lane Group												

4: Cliftwood St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

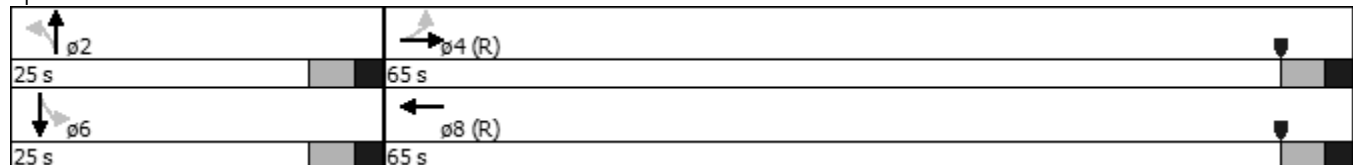


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBT
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	25	65	25	65
Maximum Split (%)	27.8%	72.2%	27.8%	72.2%
Minimum Split (s)	21	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	21	46	21	46
End Time (s)	46	21	46	21
Yield/Force Off (s)	41	16	41	16
Yield/Force Off 170(s)	30	5	30	5
Local Start Time (s)	5	30	5	30
Local Yield (s)	25	0	25	0
Local Yield 170(s)	14	79	14	79

Intersection Summary

Cycle Length 90
Control Type Actuated-Coordinated
Natural Cycle 55
Offset: 16 (18%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow









Splits and Phases: 4: Cliftwood St & Sumner Ave



5: Lenox St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1093	150	31	820	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1163	160	33	872	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)	223			292		
pX, platoon unblocked			0.79		0.87	0.79
vC, conflicting volume			1322		1745	661
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			889		773	57
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			612		280	798
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	775	547	324	582		
Volume Left	0	0	33	0		
Volume Right	0	160	0	0		
cSH	1700	1700	612	1700		
Volume to Capacity	0.46	0.32	0.05	0.34		
Queue Length 95th (ft)	0	0	4	0		
Control Delay (s)	0.0	0.0	1.8	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		0.6			
Approach LOS						
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			53.6%		ICU Level of Service	A
Analysis Period (min)			15			

6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Signalized Intersection Capacity Analysis






Weekday MID

Movement	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↔		↔	↑↑		↔	↔			↔	
Volume (vph)	608	427	98	65	964	70	95	183	42	75	153	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	0.95	1.00		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.85		1.00	0.99		1.00	0.97			1.00	
Flt Protected	1.00	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	3539	1577		1805	3467		1805	1811			1834	
Flt Permitted	1.00	1.00		0.95	1.00		0.51	1.00			0.63	
Satd. Flow (perm)	3539	1577		1805	3467		976	1811			1173	
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)	640	449	103	68	1015	74	100	193	44	79	161	6
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	640	498	0	68	1089	0	100	237	0	0	246	0
Heavy Vehicles (%)	2%	3%	0%	0%	3%	4%	0%	2%	2%	1%	2%	0%
Turn Type	NA	Prot		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	45.2	45.2		6.0	57.2		20.8	20.8			20.8	
Effective Green, g (s)	45.2	45.2		6.0	57.2		20.8	20.8			20.8	
Actuated g/C Ratio	0.50	0.50		0.07	0.64		0.23	0.23			0.23	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	1777	792		120	2203		225	418			271	
v/s Ratio Prot	0.18	c0.32		0.04	c0.31			0.13				
v/s Ratio Perm							0.10				c0.21	
v/c Ratio	0.36	0.63		0.57	0.49		0.44	0.57			0.91	
Uniform Delay, d1	13.6	16.3		40.7	8.7		29.6	30.6			33.7	
Progression Factor	0.65	0.58		1.13	0.63		1.00	1.00			1.00	
Incremental Delay, d2	0.5	3.1		5.8	0.8		1.4	1.8			31.3	
Delay (s)	9.3	12.6		51.9	6.3		31.0	32.4			65.0	
Level of Service	A	B		D	A		C	C			E	
Approach Delay (s)	10.8				9.0			32.0			65.0	
Approach LOS	B				A			C			E	

Intersection Summary

HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

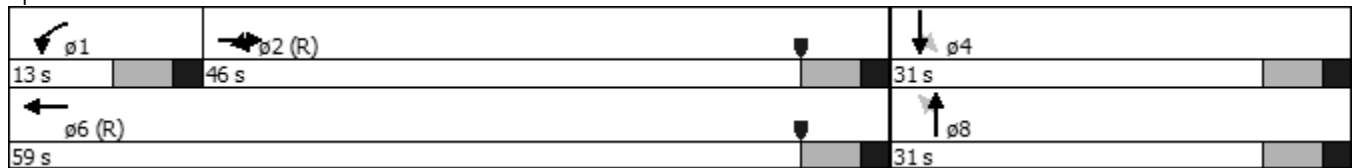
6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 Timing Report, Sorted By Phase Weekday MID

					
Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBTL	WBT	NBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize					
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	13	46	31	59	31
Maximum Split (%)	14.4%	51.1%	34.4%	65.6%	34.4%
Minimum Split (s)	10	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	37	50	6	37	6
End Time (s)	50	6	37	6	37
Yield/Force Off (s)	44	0	31	0	31
Yield/Force Off 170(s)	44	79	20	0	20
Local Start Time (s)	37	50	6	37	6
Local Yield (s)	44	0	31	0	31
Local Yield 170(s)	44	79	20	0	20

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Splits and Phases: 6: Dickinson St & Belmont Ave & Sumner Ave



8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	672	2	7	1084	24	0	3	5	8	3	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.40	0.40	0.40	0.82	0.82	0.82
Hourly flow rate (vph)	12	755	2	8	1178	26	0	8	12	10	4	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		288			475							
pX, platoon unblocked	0.91			0.89			0.94	0.94	0.89	0.94	0.94	0.91
vC, conflicting volume	1204			757			1402	2000	379	1625	1989	602
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1028			486			865	1504	62	1104	1492	367
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	93	99	93	97	97
cM capacity (veh/h)	622			970			219	112	889	144	114	579
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	390	380	597	615	20	28						
Volume Left	12	0	8	0	0	10						
Volume Right	0	2	0	26	12	15						
cSH	622	1700	970	1700	246	224						
Volume to Capacity	0.02	0.22	0.01	0.36	0.08	0.13						
Queue Length 95th (ft)	2	0	1	0	7	11						
Control Delay (s)	0.6	0.0	0.2	0.0	20.9	23.3						
Lane LOS	A		A		C	C						
Approach Delay (s)	0.3		0.1		20.9	23.3						
Approach LOS					C	C						
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			50.3%		ICU Level of Service				A			
Analysis Period (min)			15									

9: Ormond St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

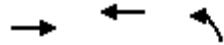
Weekday MID

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↙	
Volume (vph)	701	0	0	811	358	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	15	12	16	12	12
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	0.97	
Flt Protected	1.00			1.00	0.96	
Satd. Flow (prot)	3421			3934	3449	
Flt Permitted	1.00			1.00	0.96	
Satd. Flow (perm)	3421			3934	3449	
Peak-hour factor, PHF	0.95	0.95	0.89	0.89	0.95	0.95
Adj. Flow (vph)	738	0	0	911	377	77
RTOR Reduction (vph)	0	0	0	0	24	0
Lane Group Flow (vph)	738	0	0	911	430	0
Heavy Vehicles (%)	2%	0%	0%	4%	0%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Actuated Green, G (s)	63.5			63.5	16.5	
Effective Green, g (s)	63.5			63.5	16.5	
Actuated g/C Ratio	0.71			0.71	0.18	
Clearance Time (s)	5.0			5.0	5.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	2413			2775	632	
v/s Ratio Prot	0.22			c0.23	c0.12	
v/s Ratio Perm						
v/c Ratio	0.31			0.33	0.68	
Uniform Delay, d1	5.0			5.1	34.3	
Progression Factor	0.40			1.00	1.00	
Incremental Delay, d2	0.3			0.3	3.0	
Delay (s)	2.3			5.4	37.2	
Level of Service	A			A	D	
Approach Delay (s)	2.3			5.4	37.2	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			11.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			43.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

9: Ormond St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

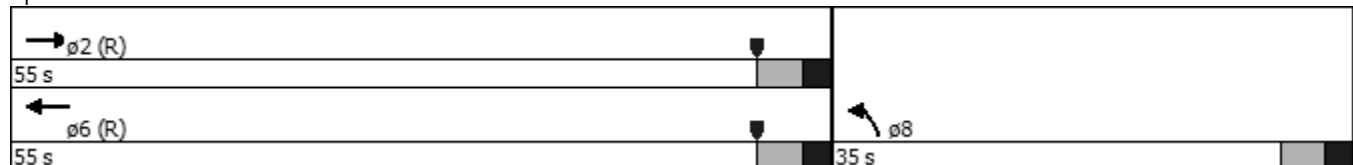


Phase Number	2	6	8
Movement	EBT	WBT	NBL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	C-Min	C-Min	None
Maximum Split (s)	55	55	35
Maximum Split (%)	61.1%	61.1%	38.9%
Minimum Split (s)	21	21	21
Yellow Time (s)	3	3	3
All-Red Time (s)	2	2	2
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	3	3	58
End Time (s)	58	58	3
Yield/Force Off (s)	53	53	88
Yield/Force Off 170(s)	42	42	77
Local Start Time (s)	40	40	5
Local Yield (s)	0	0	35
Local Yield 170(s)	79	79	24

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 53 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	










Splits and Phases: 9: Ormond St & Sumner Ave



10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs





















Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	760	15	20	752	22	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76
Hourly flow rate (vph)	826	16	22	817	29	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	257			1212		
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			842		1286	421
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			661		1142	204
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		84	95
cM capacity (veh/h)			833		177	746
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	551	292	294	545	68	
Volume Left	0	0	22	0	29	
Volume Right	0	16	0	0	39	
cSH	1700	1700	833	1700	316	
Volume to Capacity	0.32	0.17	0.03	0.32	0.22	
Queue Length 95th (ft)	0	0	2	0	20	
Control Delay (s)	0.0	0.0	1.0	0.0	19.5	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.3		19.5	
Approach LOS					C	
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			45.2%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	818	7	44	945	52	36	147	34	96	209	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3570		1770	3505		1752	1817		1752	1775	
Flt Permitted	0.21	1.00		0.28	1.00		0.31	1.00		0.52	1.00	
Satd. Flow (perm)	395	3570		513	3505		564	1817		955	1775	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	204	919	8	49	1062	58	40	165	38	108	235	79
RTOR Reduction (vph)	0	1	0	0	5	0	0	12	0	0	17	0
Lane Group Flow (vph)	204	926	0	49	1115	0	40	191	0	108	297	0
Heavy Vehicles (%)	2%	1%	0%	2%	2%	6%	3%	2%	0%	3%	2%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.0	46.0		46.0	46.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	46.0	46.0		46.0	46.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	259	2346		337	2303		128	415		218	405	
v/s Ratio Prot		0.26			0.32			0.11			c0.17	
v/s Ratio Perm	c0.52			0.10			0.07			0.11		
v/c Ratio	0.79	0.39		0.15	0.48		0.31	0.46		0.50	0.73	
Uniform Delay, d1	8.5	5.6		4.5	6.0		22.4	23.3		23.5	25.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.1	0.5		0.9	0.7		6.3	3.7		7.8	11.2	
Delay (s)	29.6	6.1		5.5	6.8		28.7	26.9		31.3	36.2	
Level of Service	C	A		A	A		C	C		C	D	
Approach Delay (s)		10.3			6.7			27.2			35.0	
Approach LOS		B			A			C			C	

Intersection Summary

HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

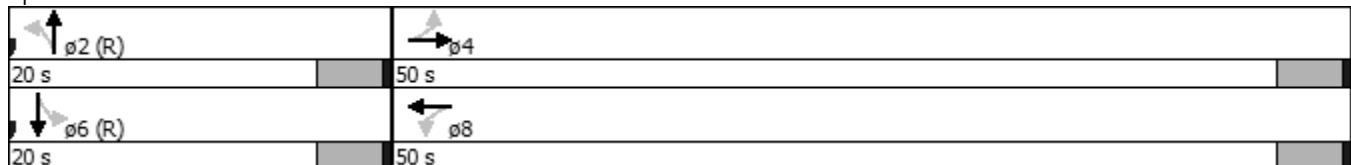


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	50	20	50
Maximum Split (%)	28.6%	71.4%	28.6%	71.4%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	66	16	66
Yield/Force Off 170(s)	5	55	5	55
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	66	16	66
Local Yield 170(s)	5	55	5	55

















Intersection Summary

Cycle Length 70
Control Type Pretimed
Natural Cycle 70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave












12: Dickinson St & Burlington St/Grenada 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	34	11	9	18	67	17	267	20	60	284	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.71	0.71	0.71	0.86	0.86	0.86	0.81	0.81	0.81
Hourly flow rate (vph)	6	41	13	13	25	94	20	310	23	74	351	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	975	880	359	902	876	322	367			334		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	929	825	359	849	821	217	367			229		
tC, single (s)	7.3	6.5	6.2	7.1	6.6	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.1	3.3	2.2			2.2		
p0 queue free %	96	84	98	94	90	88	98			94		
cM capacity (veh/h)	161	263	690	212	254	760	1203			1229		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	132	353	441								
Volume Left	6	13	20	74								
Volume Right	13	94	23	16								
cSH	284	467	1203	1229								
Volume to Capacity	0.21	0.28	0.02	0.06								
Queue Length 95th (ft)	20	29	1	5								
Control Delay (s)	21.1	15.7	0.6	1.9								
Lane LOS	C	C	A	A								
Approach Delay (s)	21.1	15.7	0.6	1.9								
Approach LOS	C	C										
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			50.9%		ICU Level of Service				A			
Analysis Period (min)			15									

13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs










Weekday MID

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	196	131	322	230	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	11	248	146	358	274	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked						
vC, conflicting volume	930	281	288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	281	288			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	67	89			
cM capacity (veh/h)	265	760	1274			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	259	503	288			
Volume Left	11	146	0			
Volume Right	248	0	14			
cSH	703	1274	1700			
Volume to Capacity	0.37	0.11	0.17			
Queue Length 95th (ft)	43	10	0			
Control Delay (s)	13.1	3.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.1	3.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			59.6%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	453	30	6	420
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	0	0	503	33	7	500
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked						
vC, conflicting volume	1034	520			537	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	520			537	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	258	560			1042	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	537	507			
Volume Left	0	0	7			
Volume Right	0	33	0			
cSH	1700	1700	1042			
Volume to Capacity	0.00	0.32	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	0.2			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.2			
Approach LOS	A					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			30.2%	ICU Level of Service		A
Analysis Period (min)			15			


















15: Dickinson St & Trafton Rd/Hollywood St 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday MID

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	2	36	18	32	4	462	0	0	352	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.52	0.52	0.52	0.77	0.77	0.77	0.90	0.90	0.90	0.94	0.94	0.94
Hourly flow rate (vph)	88	0	4	47	23	42	4	513	0	0	374	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											1056	
pX, platoon unblocked												
vC, conflicting volume	971	917	395	921	938	513	416			513		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	971	917	395	921	938	513	416			513		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.3	2.2			2.2		
p0 queue free %	56	100	99	81	91	93	100			100		
cM capacity (veh/h)	200	273	658	251	259	565	1154			1062		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	92	112	518	416								
Volume Left	88	47	4	0								
Volume Right	4	42	0	41								
cSH	206	319	1154	1062								
Volume to Capacity	0.45	0.35	0.00	0.00								
Queue Length 95th (ft)	53	38	0	0								
Control Delay (s)	36.0	22.2	0.1	0.0								
Lane LOS	E	C	A									
Approach Delay (s)	36.0	22.2	0.1	0.0								
Approach LOS	E	C										
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			39.5%		ICU Level of Service				A			
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	65	103	275	63	235	70	12	114	5	17	262	43		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12		
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0			
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00			
Frt		0.92			0.97			1.00	0.85		0.98			
Flt Protected		0.99			0.99			1.00	1.00		1.00			
Satd. Flow (prot)		1548			1581			1642	1454		1680			
Flt Permitted		0.90			0.87			0.95	1.00		0.98			
Satd. Flow (perm)		1399			1394			1568	1454		1652			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
Adj. Flow (vph)	72	114	306	70	261	78	13	127	6	19	291	48		
RTOR Reduction (vph)	0	110	0	0	16	0	0	0	4	0	9	0		
Lane Group Flow (vph)	0	382	0	0	393	0	0	140	2	0	349	0		
Heavy Vehicles (%)	0%	2%	0%	3%	5%	4%	0%	4%	0%	3%	2%	9%		
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA			
Protected Phases		4			8			2			6			
Permitted Phases	4			8			2		2	6				
Actuated Green, G (s)		17.5			17.5			14.0	14.0		14.0			
Effective Green, g (s)		17.5			17.5			14.0	14.0		14.0			
Actuated g/C Ratio		0.42			0.42			0.34	0.34		0.34			
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0			
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0			
Lane Grp Cap (vph)		589			587			528	490		557			
v/s Ratio Prot														
v/s Ratio Perm		0.27			c0.28			0.09	0.00		c0.21			
v/c Ratio		0.65			0.67			0.27	0.00		0.63			
Uniform Delay, d1		9.5			9.7			10.0	9.1		11.6			
Progression Factor		1.00			1.00			1.00	1.00		1.00			
Incremental Delay, d2		2.5			3.0			0.3	0.0		2.2			
Delay (s)		12.0			12.7			10.3	9.1		13.8			
Level of Service		B			B			B	A		B			
Approach Delay (s)		12.0			12.7			10.2			13.8			
Approach LOS		B			B			B			B			
Intersection Summary														
HCM 2000 Control Delay			12.5									HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.65											
Actuated Cycle Length (s)			41.5						10.0					
Intersection Capacity Utilization			71.1%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

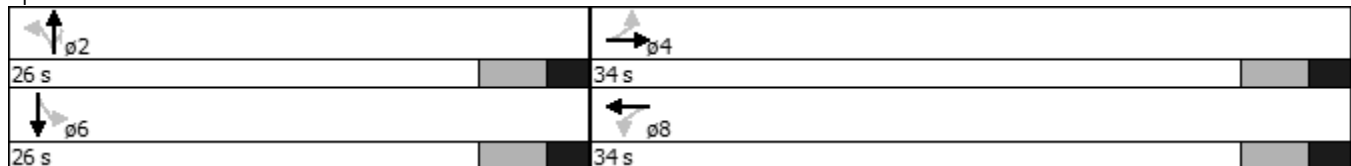


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	26	34	26	34
Maximum Split (%)	43.3%	56.7%	43.3%	56.7%
Minimum Split (s)	21	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	0	26
End Time (s)	26	0	26	0
Yield/Force Off (s)	21	55	21	55
Yield/Force Off 170(s)	21	44	21	44
Local Start Time (s)	0	26	0	26
Local Yield (s)	21	55	21	55
Local Yield 170(s)	21	44	21	44

Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 16: Oakland St & Belmont Ave



17: Beaumont St & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	57	2	4	246	7	65	29	2	1	18	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.95	0.95	0.95	0.82	0.82	0.82	0.94	0.94	0.94
Hourly flow rate (vph)	34	66	2	4	259	7	79	35	2	1	19	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782			973							
pX, platoon unblocked												
vC, conflicting volume	266			69			433	410	67	426	407	263
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	266			69			433	410	67	426	407	263
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			84	93	100	100	96	98
cM capacity (veh/h)	1309			1545			499	520	1002	502	521	781
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	102	271	117	37								
Volume Left	34	4	79	1								
Volume Right	2	7	2	17								
cSH	1309	1545	511	614								
Volume to Capacity	0.03	0.00	0.23	0.06								
Queue Length 95th (ft)	2	0	22	5								
Control Delay (s)	2.7	0.1	14.1	11.2								
Lane LOS	A	A	B	B								
Approach Delay (s)	2.7	0.1	14.1	11.2								
Approach LOS			B	B								
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			40.2%		ICU Level of Service				A			
Analysis Period (min)			15									

18: Commonwealth Ave & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM 2010 Roundabout

Weekday MID









Intersection

Intersection Delay, s/veh	10.7		
Intersection LOS	B		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	643	38	173
Demand Flow Rate, veh/h	664	38	173
Vehicles Circulating, veh/h	38	0	541
Vehicles Exiting, veh/h	0	714	161
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.7	3.5	8.7
Approach LOS	B	A	A
Lane	Left	Left	Left
Designated Moves	TR	L	R
Assumed Moves	TR	L	R
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	664	38	173
Cap Entry Lane, veh/h	1088	1130	658
Entry HV Adj Factor	0.969	1.000	1.000
Flow Entry, veh/h	643	38	173
Cap Entry, veh/h	1054	1130	658
V/C Ratio	0.610	0.034	0.263
Control Delay, s/veh	11.7	3.5	8.7
LOS	B	A	A
95th %tile Queue, veh	4	0	1

19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs










Weekday MID

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	76	524	43	364	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.88	0.88	0.71	0.71
Hourly flow rate (vph)	81	557	49	414	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)		875				
pX, platoon unblocked						
vC, conflicting volume	462				975	256
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	462				975	256
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				100	100
cM capacity (veh/h)	1099				261	783
Direction, Lane #	EB 1	WB 1				
Volume Total	638	462				
Volume Left	81	0				
Volume Right	0	414				
cSH	1099	1700				
Volume to Capacity	0.07	0.27				
Queue Length 95th (ft)	6	0				
Control Delay (s)	1.9	0.0				
Lane LOS	A					
Approach Delay (s)	1.9	0.0				
Approach LOS						
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			63.2%		ICU Level of Service	B
Analysis Period (min)			15			

20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday MID

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	537	0	1	414	5	66
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.90	0.90	0.89	0.89
Hourly flow rate (vph)	559	0	1	460	6	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)	1086					
pX, platoon unblocked						
vC, conflicting volume			559		1022	559
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			559		1022	559
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	86
cM capacity (veh/h)			1022		264	532
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	559	461	80			
Volume Left	0	1	6			
Volume Right	0	0	74			
cSH	1700	1022	496			
Volume to Capacity	0.33	0.00	0.16			
Queue Length 95th (ft)	0	0	14			
Control Delay (s)	0.0	0.0	13.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.0	13.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			39.3%	ICU Level of Service		A
Analysis Period (min)			15			

2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis

Weekday MID

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	566	15	51	421	20	0	0	0	10	9	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64
Hourly flow rate (vph)	34	572	15	55	453	22	0	0	0	16	14	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1307										
pX, platoon unblocked												
vC, conflicting volume	474			587			1234	1232	579	1221	1229	463
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474			587			1234	1232	579	1221	1229	463
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	97			94			100	100	100	89	91	99
cM capacity (veh/h)	1098			950			133	163	518	148	156	603
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	621	529	36									
Volume Left	34	55	16									
Volume Right	15	22	6									
cSH	1098	950	174									
Volume to Capacity	0.03	0.06	0.21									
Queue Length 95th (ft)	2	5	19									
Control Delay (s)	0.8	1.6	31.0									
Lane LOS	A	A	D									
Approach Delay (s)	0.8	1.6	31.0									
Approach LOS			D									
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			50.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection: 1: Main Greeting Rd & Sumner Ave

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	44	61
Average Queue (ft)	15	12
95th Queue (ft)	42	42
Link Distance (ft)		1472
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Sumner Ave & Oakland St

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	162	215	242	283	292	407	225
Average Queue (ft)	66	124	149	142	146	180	117
95th Queue (ft)	118	197	221	241	247	345	229
Link Distance (ft)		477	477	546	546	686	
Upstream Blk Time (%)						0	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	150						200
Storage Blk Time (%)	0	2				8	0
Queuing Penalty (veh)	1	3				16	0

Intersection: 3: Sumner Ave & Beaumont St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	406	406	20	4	246
Average Queue (ft)	89	104	1	0	88
95th Queue (ft)	362	401	11	4	274
Link Distance (ft)	547	547	358	358	357
Upstream Blk Time (%)	0	2			8
Queuing Penalty (veh)	4	12			4
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Cliftwood St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	LT	T	T	TR	LTR
Maximum Queue (ft)	367	370	176	187	167
Average Queue (ft)	151	242	73	87	75
95th Queue (ft)	358	439	155	174	136
Link Distance (ft)	358	358	166	166	399
Upstream Blk Time (%)	1	9	0	1	
Queuing Penalty (veh)	5	61	2	2	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Lenox St & Sumner Ave

Movement	EB	EB	WB	WB
Directions Served	T	TR	LT	T
Maximum Queue (ft)	174	195	150	168
Average Queue (ft)	25	145	39	17
95th Queue (ft)	117	243	111	90
Link Distance (ft)	166	166	178	178
Upstream Blk Time (%)	0	17	0	0
Queuing Penalty (veh)	1	119	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Dickinson St & Belmont Ave & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	T	T	R>	L	T	TR	L	TR	<LTR
Maximum Queue (ft)	173	162	193	99	214	217	130	216	391
Average Queue (ft)	78	63	180	29	129	131	58	105	251
95th Queue (ft)	147	133	212	71	204	211	109	182	453
Link Distance (ft)	178	178	178	188	188	188	380	380	430
Upstream Blk Time (%)	0	0	30		1	1			7
Queuing Penalty (veh)	0	1	122		3	4			26
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 8: Sumner Ave & Ventura St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	57	11	72	253	53	75
Average Queue (ft)	4	0	1	13	9	27
95th Queue (ft)	25	8	12	101	37	64
Link Distance (ft)	188	188	408	408	56	198
Upstream Blk Time (%)				0	1	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Ormond St & Sumner Ave

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	LR
Maximum Queue (ft)	258	260	209	227	263	304
Average Queue (ft)	121	122	88	143	81	155
95th Queue (ft)	233	240	185	230	190	254
Link Distance (ft)	408	408	199	199	318	318
Upstream Blk Time (%)			0	2	0	0
Queuing Penalty (veh)			1	6	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 10: Daytona St & Sumner Ave

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	10	6	94	119	76
Average Queue (ft)	0	0	13	9	28
95th Queue (ft)	8	5	52	57	59
Link Distance (ft)	199	199	1113	1113	505
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: White St & Sumner Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	150	230	221	64	142	176	62	135	132	184
Average Queue (ft)	48	96	106	13	65	73	20	69	42	88
95th Queue (ft)	116	185	192	40	114	137	50	112	89	148
Link Distance (ft)		1113	1113		687	687		1855		1813
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			75			125		175	
Storage Blk Time (%)	1	1		0	3			0	0	0
Queuing Penalty (veh)	7	1		2	1			0	0	0

Intersection: 12: Dickinson St & Burlington St/Grenada Terr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	61	57	77	177
Average Queue (ft)	28	17	7	39
95th Queue (ft)	54	38	38	142
Link Distance (ft)		220	430	504
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Dickinson St & Cliftwood St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	112	61	22
Average Queue (ft)	39	24	1
95th Queue (ft)	76	61	11
Link Distance (ft)	289	54	380
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		4	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Dickinson St & Trenton St

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	70	6
Average Queue (ft)	7	0
95th Queue (ft)	38	4
Link Distance (ft)	410	54
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Dickinson St & Trafton Rd/Hollywood St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	68	83	22
Average Queue (ft)	30	39	1
95th Queue (ft)	55	68	10
Link Distance (ft)	768	266	601
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Oakland St & Belmont Ave

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	522	385	102	25	234
Average Queue (ft)	182	111	38	3	99
95th Queue (ft)	444	269	83	15	181
Link Distance (ft)	925	684	693		511
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)				80	
Storage Blk Time (%)			1		
Queuing Penalty (veh)			0		

Intersection: 17: Beaumont St & Belmont Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	148	62	69	70
Average Queue (ft)	30	7	30	32
95th Queue (ft)	199	57	58	83
Link Distance (ft)	684		357	451
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Commonwealth Ave & Belmont Ave

Movement	EB	WB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	212	25	58
Average Queue (ft)	66	2	28
95th Queue (ft)	162	14	53
Link Distance (ft)	335	321	1103
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Belmont Ave & Ormond St

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	294	44
Average Queue (ft)	69	4
95th Queue (ft)	194	23
Link Distance (ft)	313	130
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	1	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Walden St & Belmont Ave

Movement	EB	NB
Directions Served	T	LR
Maximum Queue (ft)	12	66
Average Queue (ft)	0	24
95th Queue (ft)	6	52
Link Distance (ft)	130	264
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: Hollywood St/Daytona St & Belmont Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	116	180	64
Average Queue (ft)	16	41	24
95th Queue (ft)	66	117	53
Link Distance (ft)	155	1566	505
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Belmont Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 439












1: Main Greeting Rd & Sumner Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Volume (veh/h)	1481	16	20	1196	5	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.89	0.89	0.60	0.60
Hourly flow rate (vph)	1559	17	22	1344	8	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				529		
pX, platoon unblocked					0.74	
vC, conflicting volume			1576		2284	788
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1576		2033	788
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			95		70	97
cM capacity (veh/h)			424		28	338
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1039	536	22	672	672	20
Volume Left	0	0	22	0	0	8
Volume Right	0	17	0	0	0	12
cSH	1700	1700	424	1700	1700	60
Volume to Capacity	0.61	0.32	0.05	0.40	0.40	0.33
Queue Length 95th (ft)	0	0	4	0	0	30
Control Delay (s)	0.0	0.0	14.0	0.0	0.0	92.5
Lane LOS			B			F
Approach Delay (s)	0.0		0.2			92.5
Approach LOS						F
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			51.4%		ICU Level of Service	A
Analysis Period (min)			15			

2: Sumner Ave & Oakland St
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	160	1281	1020	16	339	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	16	12	12
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	4051	3532		1805	1615
Flt Permitted	0.12	1.00	1.00		0.95	1.00
Satd. Flow (perm)	230	4051	3532		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1392	1109	17	368	221
RTOR Reduction (vph)	0	0	2	0	0	48
Lane Group Flow (vph)	174	1392	1124	0	368	173
Heavy Vehicles (%)	1%	1%	2%	0%	0%	0%
Turn Type	pm+pt	NA	NA		Prot	pt+ov
Protected Phases	7	4	8		6	6 7
Permitted Phases	4					
Actuated Green, G (s)	40.1	40.1	31.0		18.8	27.9
Effective Green, g (s)	40.1	40.1	31.0		18.8	27.9
Actuated g/C Ratio	0.58	0.58	0.45		0.27	0.40
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)	226	2357	1589		492	653
v/s Ratio Prot	0.05	c0.34	0.32		c0.20	0.11
v/s Ratio Perm	c0.40					
v/c Ratio	0.77	0.59	0.71		0.75	0.26
Uniform Delay, d1	10.6	9.2	15.3		22.9	13.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	14.6	0.4	1.5		6.1	0.2
Delay (s)	25.2	9.6	16.8		29.0	13.9
Level of Service	C	A	B		C	B
Approach Delay (s)		11.3	16.8		23.3	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			15.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			68.9		Sum of lost time (s)	15.0
Intersection Capacity Utilization			68.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

2: Sumner Ave & Oakland St
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

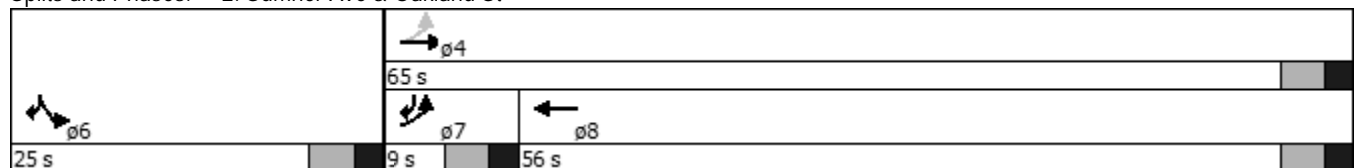


Phase Number	4	6	7	8
Movement	EBTL	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Min	None	None	Min
Maximum Split (s)	65	25	9	56
Maximum Split (%)	72.2%	27.8%	10.0%	62.2%
Minimum Split (s)	21	21	9	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	25	0	25	34
End Time (s)	0	25	34	0
Yield/Force Off (s)	85	20	29	85
Yield/Force Off 170(s)	85	9	29	85
Local Start Time (s)	25	0	25	34
Local Yield (s)	85	20	29	85
Local Yield 170(s)	85	9	29	85

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	55










Splits and Phases: 2: Sumner Ave & Oakland St



3: Sumner Ave & Belmont St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

















Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	23	1401	1024	56	19	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	25	1540	1125	62	21	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		598	433			
pX, platoon unblocked	0.89				0.85	0.89
vC, conflicting volume	1187				1976	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	955				1194	286
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				86	94
cM capacity (veh/h)	645				149	636
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	538	1026	750	437	56	
Volume Left	25	0	0	0	21	
Volume Right	0	0	0	62	35	
cSH	645	1700	1700	1700	286	
Volume to Capacity	0.04	0.60	0.44	0.26	0.20	
Queue Length 95th (ft)	3	0	0	0	18	
Control Delay (s)	1.1	0.0	0.0	0.0	20.6	
Lane LOS	A				C	
Approach Delay (s)	0.4		0.0		20.6	
Approach LOS					C	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			65.0%		ICU Level of Service	C
Analysis Period (min)			15			

4: Cliftwood St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1370	0	0	1096	0	102	0	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			1.00				
Frt		1.00			1.00			1.00				
Flt Protected		1.00			1.00			0.95				
Satd. Flow (prot)		3539			3539			1804				
Flt Permitted		1.00			1.00			0.73				
Satd. Flow (perm)		3539			3539			1387				
Peak-hour factor, PHF	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1442	0	0	1260	0	111	0	4	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	1442	0	0	1260	0	0	94	0	0	0	0
Heavy Vehicles (%)	0%	2%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA		Perm	NA				
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		69.8			69.8			10.2				
Effective Green, g (s)		69.8			69.8			10.2				
Actuated g/C Ratio		0.78			0.78			0.11				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		2744			2744			157				
v/s Ratio Prot		c0.41			0.36							
v/s Ratio Perm								c0.07				
v/c Ratio		0.53			0.46			0.60				
Uniform Delay, d1		3.8			3.5			37.9				
Progression Factor		1.00			1.93			1.00				
Incremental Delay, d2		0.7			0.5			6.0				
Delay (s)		4.6			7.3			43.9				
Level of Service		A			A			D				
Approach Delay (s)		4.6			7.3			43.9			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			7.4									A
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			90.0						10.0			
Intersection Capacity Utilization			52.1%									A
Analysis Period (min)			15									
c Critical Lane Group												

4: Cliftwood St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

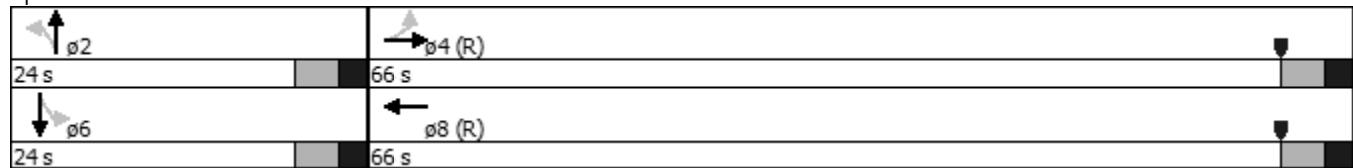


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBT
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	24	66	24	66
Maximum Split (%)	26.7%	73.3%	26.7%	73.3%
Minimum Split (s)	21	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	24	0	24
End Time (s)	24	0	24	0
Yield/Force Off (s)	19	85	19	85
Yield/Force Off 170(s)	8	74	8	74
Local Start Time (s)	5	29	5	29
Local Yield (s)	24	0	24	0
Local Yield 170(s)	13	79	13	79

Intersection Summary







Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 85 (94%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow	

Splits and Phases: 4: Cliftwood St & Sumner Ave



5: Lenox St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Volume (veh/h)	1231	111	26	874	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1310	118	28	930	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)	223			292		
pX, platoon unblocked			0.84		0.89	0.84
vC, conflicting volume			1428		1889	714
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1122		929	269
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			527		228	615
Direction, Lane #	EB 1	EB 2	WB 1	WB 2		
Volume Total	873	555	338	620		
Volume Left	0	0	28	0		
Volume Right	0	118	0	0		
cSH	1700	1700	527	1700		
Volume to Capacity	0.51	0.33	0.05	0.36		
Queue Length 95th (ft)	0	0	4	0		
Control Delay (s)	0.0	0.0	1.7	0.0		
Lane LOS			A			
Approach Delay (s)	0.0		0.6			
Approach LOS						
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			51.0%		ICU Level of Service	A
Analysis Period (min)			15			

6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Signalized Intersection Capacity Analysis

Weekday PM

Movement	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT
Lane Configurations	↑↑	↔		↔	↑↑		↔	↔				↔
Volume (vph)	641	515	111	63	1053	23	102	186	43	20	75	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0				6.0
Lane Util. Factor	0.95	1.00		1.00	0.95		1.00	1.00				1.00
Frt	1.00	0.85		1.00	1.00		1.00	0.97				1.00
Flt Protected	1.00	1.00		0.95	1.00		0.95	1.00				0.98
Satd. Flow (prot)	3574	1593		1805	3529		1805	1803				1850
Flt Permitted	1.00	1.00		0.95	1.00		0.47	1.00				0.67
Satd. Flow (perm)	3574	1593		1805	3529		898	1803				1266
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	689	554	119	68	1132	25	110	200	46	22	81	215
RTOR Reduction (vph)	0	60	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	689	613	0	68	1157	0	110	246	0	0	0	329
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	0%	3%	0%	0%	0%	1%
Turn Type	NA	Prot		Prot	NA		Perm	NA		Perm	Perm	NA
Protected Phases	2	2		1	6			8				4
Permitted Phases							8			4	4	
Actuated Green, G (s)	40.2	40.2		6.0	52.2		25.8	25.8				25.8
Effective Green, g (s)	40.2	40.2		6.0	52.2		25.8	25.8				25.8
Actuated g/C Ratio	0.45	0.45		0.07	0.58		0.29	0.29				0.29
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0				6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	1596	711		120	2046		257	516				362
v/s Ratio Prot	0.19	c0.38		0.04	c0.33			0.14				
v/s Ratio Perm							0.12					c0.26
v/c Ratio	0.43	0.86		0.57	0.57		0.43	0.48				0.91
Uniform Delay, d1	17.1	22.4		40.7	11.8		26.1	26.5				31.0
Progression Factor	1.18	1.30		0.93	1.25		1.00	1.00				1.00
Incremental Delay, d2	0.8	11.8		5.8	1.1		1.1	0.7				25.6
Delay (s)	20.9	40.9		43.6	15.9		27.2	27.2				56.6
Level of Service	C	D		D	B		C	C				E
Approach Delay (s)	30.8				17.4			27.2				56.6
Approach LOS	C				B			C				E

Intersection Summary






HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Signalized Intersection Capacity Analysis

Weekday PM

Movement	SBR
Lane Configurations	
Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
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)	
Approach LOS	
Intersection Summary	

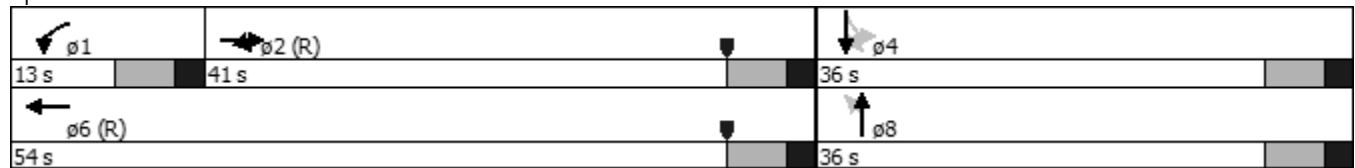
6: Dickinson St & Belmont Ave & Sumner 2015 Design - Belmont Ave Depart+Sumner WB LTs
 Timing Report, Sorted By Phase Weekday PM

					
Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBTL	WBT	NBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize					
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	13	41	36	54	36
Maximum Split (%)	14.4%	45.6%	40.0%	60.0%	40.0%
Minimum Split (s)	10	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	42	55	6	42	6
End Time (s)	55	6	42	6	42
Yield/Force Off (s)	49	0	36	0	36
Yield/Force Off 170(s)	49	79	25	0	25
Local Start Time (s)	42	55	6	42	6
Local Yield (s)	49	0	36	0	36
Local Yield 170(s)	49	79	25	0	25

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 70
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

















Splits and Phases: 6: Dickinson St & Belmont Ave & Sumner Ave



8: Sumner Ave & Ventura St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	717	4	2	1150	12	1	5	6	14	10	16
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.38	0.38	0.38	0.83	0.83	0.83
Hourly flow rate (vph)	4	797	4	2	1211	13	3	13	16	17	12	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		288			475							
pX, platoon unblocked	0.91			0.87			0.91	0.91	0.87	0.91	0.91	0.91
vC, conflicting volume	1223			801			1443	2035	401	1651	2031	612
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1056			469			868	1518	8	1096	1514	387
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	88	98	88	89	97
cM capacity (veh/h)	610			959			200	109	937	138	109	564
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	403	403	607	618	32	48						
Volume Left	4	0	2	0	3	17						
Volume Right	0	4	0	13	16	19						
cSH	610	1700	959	1700	209	180						
Volume to Capacity	0.01	0.24	0.00	0.36	0.15	0.27						
Queue Length 95th (ft)	1	0	0	0	13	26						
Control Delay (s)	0.2	0.0	0.1	0.0	25.3	32.1						
Lane LOS	A		A		D	D						
Approach Delay (s)	0.1		0.0		25.3	32.1						
Approach LOS					D	D						
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			46.3%		ICU Level of Service				A			
Analysis Period (min)			15									

9: Ormond St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

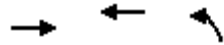
2015 Design - Belmont Ave Depart+Sumner WB LTs
 Weekday PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↙	
Volume (vph)	804	0	0	805	369	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	15	12	16	12	12
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	0.98	
Flt Protected	1.00			1.00	0.96	
Satd. Flow (prot)	3421			4011	3459	
Flt Permitted	1.00			1.00	0.96	
Satd. Flow (perm)	3421			4011	3459	
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.92	0.92
Adj. Flow (vph)	924	0	0	866	401	66
RTOR Reduction (vph)	0	0	0	0	18	0
Lane Group Flow (vph)	924	0	0	866	449	0
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Actuated Green, G (s)	63.1			63.1	16.9	
Effective Green, g (s)	63.1			63.1	16.9	
Actuated g/C Ratio	0.70			0.70	0.19	
Clearance Time (s)	5.0			5.0	5.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	2398			2812	649	
v/s Ratio Prot	c0.27			0.22	c0.13	
v/s Ratio Perm						
v/c Ratio	0.39			0.31	0.69	
Uniform Delay, d1	5.5			5.1	34.1	
Progression Factor	2.08			1.00	1.04	
Incremental Delay, d2	0.4			0.3	3.2	
Delay (s)	11.9			5.4	38.7	
Level of Service	B			A	D	
Approach Delay (s)	11.9			5.4	38.7	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			15.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			43.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

9: Ormond St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

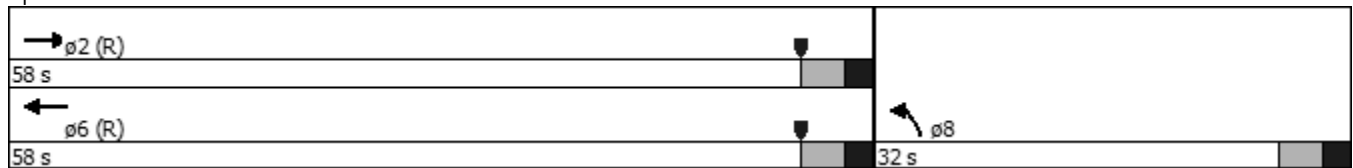


Phase Number	2	6	8
Movement	EBT	WBT	NBL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	C-Min	C-Min	None
Maximum Split (s)	58	58	32
Maximum Split (%)	64.4%	64.4%	35.6%
Minimum Split (s)	21	21	21
Yellow Time (s)	3	3	3
All-Red Time (s)	2	2	2
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	36	36	4
End Time (s)	4	4	36
Yield/Force Off (s)	89	89	31
Yield/Force Off 170(s)	78	78	20
Local Start Time (s)	37	37	5
Local Yield (s)	0	0	32
Local Yield 170(s)	79	79	21

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 45
 Offset: 89 (99%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow










Splits and Phases: 9: Ormond St & Sumner Ave



10: Daytona St & Sumner Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs





















Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	857	22	25	785	18	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.94	0.94	0.68	0.68
Hourly flow rate (vph)	942	24	27	835	26	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	257			1212		
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			966		1425	483
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			720		1234	179
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		82	95
cM capacity (veh/h)			771		148	749
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	628	338	305	557	68	
Volume Left	0	0	27	0	26	
Volume Right	0	24	0	0	41	
cSH	1700	1700	771	1700	289	
Volume to Capacity	0.37	0.20	0.03	0.33	0.23	
Queue Length 95th (ft)	0	0	3	0	22	
Control Delay (s)	0.0	0.0	1.2	0.0	21.2	
Lane LOS			A		C	
Approach Delay (s)	0.0		0.4		21.2	
Approach LOS					C	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			

11: White St & Sumner Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	935	12	34	809	73	51	219	53	117	314	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3603		1805	3530		1805	1808		1787	1840	
Flt Permitted	0.25	1.00		0.25	1.00		0.43	1.00		0.55	1.00	
Satd. Flow (perm)	470	3603		475	3530		813	1808		1040	1840	
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)	97	1016	13	37	879	79	55	238	58	127	341	63
RTOR Reduction (vph)	0	2	0	0	17	0	0	21	0	0	17	0
Lane Group Flow (vph)	97	1027	0	37	941	0	55	275	0	127	387	0
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	0%	2%	2%	1%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	188	1441		190	1412		325	723		416	736	
v/s Ratio Prot		c0.28			0.27			0.15			c0.21	
v/s Ratio Perm	0.21			0.08			0.07			0.12		
v/c Ratio	0.52	0.71		0.19	0.67		0.17	0.38		0.31	0.53	
Uniform Delay, d1	9.1	10.1		7.8	9.8		7.7	8.5		8.2	9.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.8	3.0		2.3	2.5		1.1	1.5		1.9	2.7	
Delay (s)	18.8	13.1		10.1	12.3		8.8	10.0		10.1	11.8	
Level of Service	B	B		B	B		A	B		B	B	
Approach Delay (s)		13.6			12.2			9.8			11.4	
Approach LOS		B			B			A			B	

Intersection Summary

HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

11: White St & Sumner Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

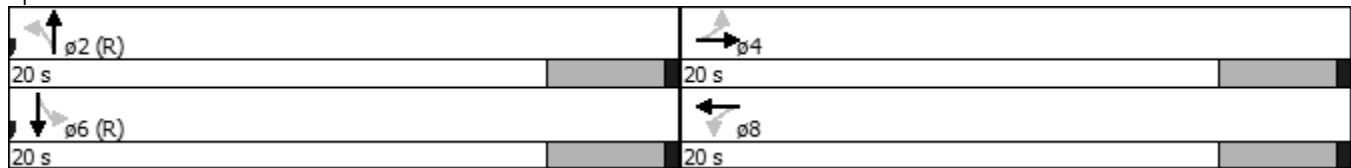


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	20	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%	50.0%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	20	0	20
End Time (s)	20	0	20	0
Yield/Force Off (s)	16	36	16	36
Yield/Force Off 170(s)	5	25	5	25
Local Start Time (s)	0	20	0	20
Local Yield (s)	16	36	16	36
Local Yield 170(s)	5	25	5	25

















Intersection Summary

Cycle Length 40
Control Type Pretimed
Natural Cycle 45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 11: White St & Sumner Ave












12: Dickinson St & Burlington St/Grenada 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	40	8	10	6	43	16	250	14	80	331	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	9	49	10	11	7	49	18	281	16	86	356	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								543				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	917	872	368	899	876	289	380			297		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	868	819	368	848	824	186	380			195		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	81	99	94	97	94	98			93		
cM capacity (veh/h)	218	265	682	207	263	789	1190			1282		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	68	68	315	466								
Volume Left	9	11	18	86								
Volume Right	10	49	16	24								
cSH	282	470	1190	1282								
Volume to Capacity	0.24	0.14	0.02	0.07								
Queue Length 95th (ft)	23	13	1	5								
Control Delay (s)	21.8	13.9	0.6	2.0								
Lane LOS	C	B	A	A								
Approach Delay (s)	21.8	13.9	0.6	2.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			53.2%		ICU Level of Service					A		
Analysis Period (min)			15									

13: Dickinson St & Cliftwood St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs










Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	163	90	336	307	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.95	0.95	0.96	0.96
Hourly flow rate (vph)	13	194	95	354	320	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					488	
pX, platoon unblocked						
vC, conflicting volume	869	326	332			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	869	326	332			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	73	92			
cM capacity (veh/h)	300	717	1233			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	207	448	332			
Volume Left	13	95	0			
Volume Right	194	0	12			
cSH	659	1233	1700			
Volume to Capacity	0.31	0.08	0.20			
Queue Length 95th (ft)	34	6	0			
Control Delay (s)	12.9	2.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.9	2.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			60.2%	ICU Level of Service		B
Analysis Period (min)			15			

















14: Dickinson St & Trenton St
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	426	28	1	469
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.95	0.95	0.96	0.96
Hourly flow rate (vph)	0	0	448	29	1	489
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						583
pX, platoon unblocked						
vC, conflicting volume	954	463			478	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	954	463			478	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	289	603			1095	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	478	490			
Volume Left	0	0	1			
Volume Right	0	29	0			
cSH	1700	1700	1095			
Volume to Capacity	0.00	0.28	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			


















15: Dickinson St & Trafton Rd/Hollywood St 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	0	2	45	25	21	2	426	0	0	409	44
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.76	0.76	0.76	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	70	0	2	59	33	28	2	468	0	0	449	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											1056	
pX, platoon unblocked												
vC, conflicting volume	990	946	474	949	970	468	498			468		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	990	946	474	949	970	468	498			468		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	100	100	75	87	95	100			100		
cM capacity (veh/h)	195	263	595	241	255	599	1077			1104		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	120	470	498								
Volume Left	70	59	2	0								
Volume Right	2	28	0	48								
cSH	199	284	1077	1104								
Volume to Capacity	0.36	0.42	0.00	0.00								
Queue Length 95th (ft)	39	50	0	0								
Control Delay (s)	33.0	26.5	0.1	0.0								
Lane LOS	D	D	A									
Approach Delay (s)	33.0	26.5	0.1	0.0								
Approach LOS	D	D										
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Utilization			36.7%		ICU Level of Service				A			
Analysis Period (min)			15									

16: Oakland St & Belmont Ave
 HCM Signalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	84	119	311	49	210	75	12	123	6	15	277	46	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	12	12	12	13	12	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frt		0.92			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			1.00	1.00		1.00		
Satd. Flow (prot)		1550			1622			1703	1454		1724		
Flt Permitted		0.89			0.89			0.95	1.00		0.98		
Satd. Flow (perm)		1385			1447			1630	1454		1700		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	93	132	346	54	233	83	13	137	7	17	308	51	
RTOR Reduction (vph)	0	96	0	0	18	0	0	0	5	0	10	0	
Lane Group Flow (vph)	0	475	0	0	352	0	0	150	2	0	366	0	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	1%	0%	0%	0%	2%	0%	2%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2		2	6			
Actuated Green, G (s)		20.3			20.3			15.1	15.1		15.1		
Effective Green, g (s)		20.3			20.3			15.1	15.1		15.1		
Actuated g/C Ratio		0.45			0.45			0.33	0.33		0.33		
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		619			647			542	483		565		
v/s Ratio Prot													
v/s Ratio Perm		c0.34			0.24			0.09	0.00		c0.22		
v/c Ratio		0.77			0.54			0.28	0.00		0.65		
Uniform Delay, d1		10.6			9.2			11.1	10.1		12.9		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		5.7			0.9			0.3	0.0		2.6		
Delay (s)		16.3			10.1			11.4	10.1		15.4		
Level of Service		B			B			B	B		B		
Approach Delay (s)		16.3			10.1			11.4			15.4		
Approach LOS		B			B			B			B		
Intersection Summary													
HCM 2000 Control Delay			14.0									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.72										
Actuated Cycle Length (s)			45.4									Sum of lost time (s)	10.0
Intersection Capacity Utilization			86.8%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

16: Oakland St & Belmont Ave
Timing Report, Sorted By Phase

2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

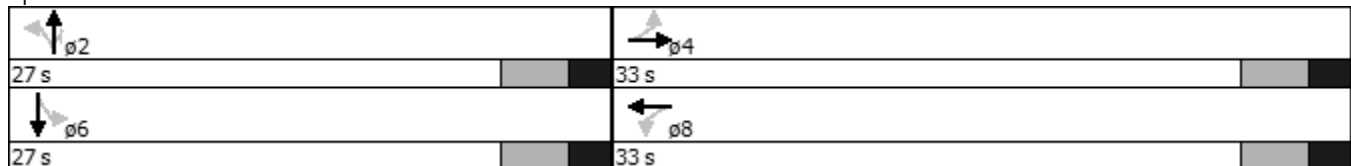


Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	27	21	21	21
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22	55	22	55
Yield/Force Off 170(s)	22	44	22	44
Local Start Time (s)	0	27	0	27
Local Yield (s)	22	55	22	55
Local Yield 170(s)	22	44	22	44

















Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 16: Oakland St & Belmont Ave



17: Beaumont St & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	83	14	11	249	3	42	30	3	1	26	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.77	0.77	0.77	0.70	0.70	0.70	0.75	0.75	0.75
Hourly flow rate (vph)	32	89	15	14	323	4	60	43	4	1	35	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		782										
pX, platoon unblocked												
vC, conflicting volume	327			104			553	517	97	541	523	325
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	327			104			553	517	97	541	523	325
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			85	90	100	100	92	97
cM capacity (veh/h)	1244			1500			398	449	965	409	445	720
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	137	342	107	56								
Volume Left	32	14	60	1								
Volume Right	15	4	4	20								
cSH	1244	1500	427	515								
Volume to Capacity	0.03	0.01	0.25	0.11								
Queue Length 95th (ft)	2	1	24	9								
Control Delay (s)	2.1	0.4	16.2	12.8								
Lane LOS	A	A	C	B								
Approach Delay (s)	2.1	0.4	16.2	12.8								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			35.8%		ICU Level of Service				A			
Analysis Period (min)			15									

18: Commonwealth Ave & Belmont Ave 2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM 2010 Roundabout Weekday PM

Intersection

Intersection Delay, s/veh 15.2
 Intersection LOS C









Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	785	70	144
Demand Flow Rate, veh/h	798	70	144
Vehicles Circulating, veh/h	70	0	686
Vehicles Exiting, veh/h	0	830	182
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	17.2	3.7	9.7
Approach LOS	C	A	A

Lane	Left	Left	Left
Designated Moves	TR	L	R
Assumed Moves	TR	L	R
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	798	70	144
Cap Entry Lane, veh/h	1054	1130	569
Entry HV Adj Factor	0.983	1.000	1.000
Flow Entry, veh/h	785	70	144
Cap Entry, veh/h	1036	1130	569
V/C Ratio	0.757	0.062	0.253
Control Delay, s/veh	17.2	3.7	9.7
LOS	C	A	A
95th %tile Queue, veh	8	0	1

19: Belmont Ave & Ormond St
 HCM Unsignalized Intersection Capacity Analysis







2015 Design - Belmont Ave Depart+Sumner WB LTs

Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	71	658	47	360	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.94	0.94	0.85	0.85
Hourly flow rate (vph)	78	723	50	383	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)		875				
pX, platoon unblocked						
vC, conflicting volume	433				1121	241
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	433				1121	241
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				100	100
cM capacity (veh/h)	1137				215	797
Direction, Lane #	EB 1	WB 1				
Volume Total	801	433				
Volume Left	78	0				
Volume Right	0	383				
cSH	1137	1700				
Volume to Capacity	0.07	0.25				
Queue Length 95th (ft)	6	0				
Control Delay (s)	1.7	0.0				
Lane LOS	A					
Approach Delay (s)	1.7	0.0				
Approach LOS						
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			69.9%		ICU Level of Service	C
Analysis Period (min)			15			
















20: Walden St & Belmont Ave
 HCM Unsignalized Intersection Capacity Analysis

2015 Design - Belmont Ave Depart+Sumner WB LTs
 Weekday PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	
Volume (veh/h)	615	0	0	423	9	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.90	0.90	0.75	0.75
Hourly flow rate (vph)	699	0	0	470	12	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	1086					
pX, platoon unblocked						
vC, conflicting volume			699		1169	699
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			699		1169	699
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		94	85
cM capacity (veh/h)			907		205	440
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	699	470	80			
Volume Left	0	0	12			
Volume Right	0	0	68			
cSH	1700	1700	375			
Volume to Capacity	0.41	0.28	0.21			
Queue Length 95th (ft)	0	0	20			
Control Delay (s)	0.0	0.0	17.2			
Lane LOS			C			
Approach Delay (s)	0.0	0.0	17.2			
Approach LOS			C			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			42.7%		ICU Level of Service	A
Analysis Period (min)			15			

2015 Design - Belmont Ave Depart+Sumner WB LTs
 HCM Unsignalized Intersection Capacity Analysis

Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	649	20	46	396	14	0	0	0	25	14	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	28	729	22	50	430	15	0	0	0	29	16	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1307										
pX, platoon unblocked												
vC, conflicting volume	446			752			1350	1342	740	1335	1346	438
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			752			1350	1342	740	1335	1346	438
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			100	100	100	77	89	99
cM capacity (veh/h)	1125			867			109	141	420	124	140	623
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	780	496	52									
Volume Left	28	50	29									
Volume Right	22	15	7									
cSH	1125	867	145									
Volume to Capacity	0.02	0.06	0.36									
Queue Length 95th (ft)	2	5	37									
Control Delay (s)	0.7	1.6	43.2									
Lane LOS	A	A	E									
Approach Delay (s)	0.7	1.6	43.2									
Approach LOS			E									
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			51.2%		ICU Level of Service				A			
Analysis Period (min)			15									

MassDOT Crash Rate Worksheets

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

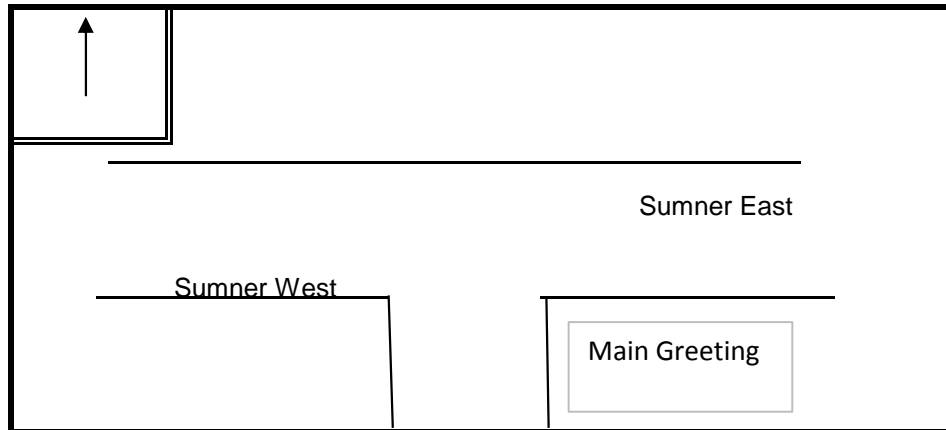
DISTRICT : 2 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Main Greeting Road

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	South	East	West			
PEAK HOURLY VOLUMES (PM) :	12	1,216	1,497			2,725

" K " FACTOR :

0.101

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

26,966

TOTAL # OF CRASHES :

1

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

0.20

CRASH RATE CALCULATION :

0.02

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

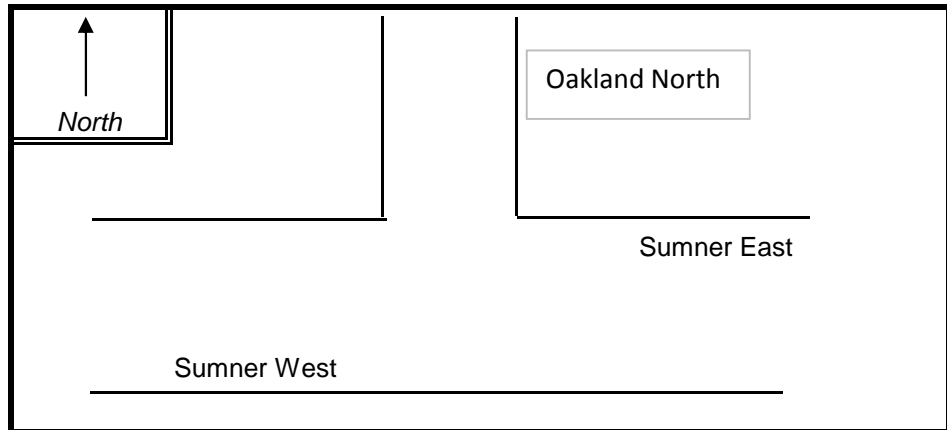
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Oakland St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	South	East	West			
PEAK HOURLY VOLUMES (PM) :	176	1,223	1,315			2,714

" K " FACTOR :

0.101

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

26,966

TOTAL # OF CRASHES :

18

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

3.60

CRASH RATE CALCULATION :

0.37

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

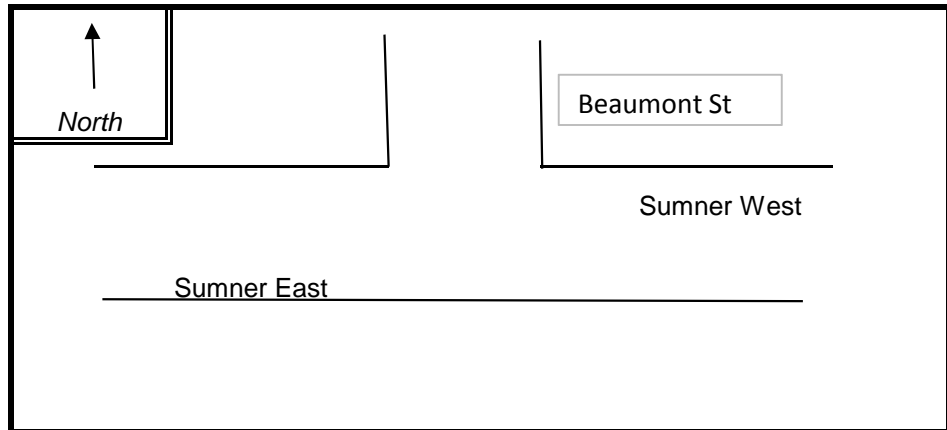
DISTRICT : 2 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Beaumont St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	44	0	1,044	1,119		2,207

" K " FACTOR :

0.082

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

26,966

TOTAL # OF CRASHES :

6

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

1.20

CRASH RATE CALCULATION :

0.12

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

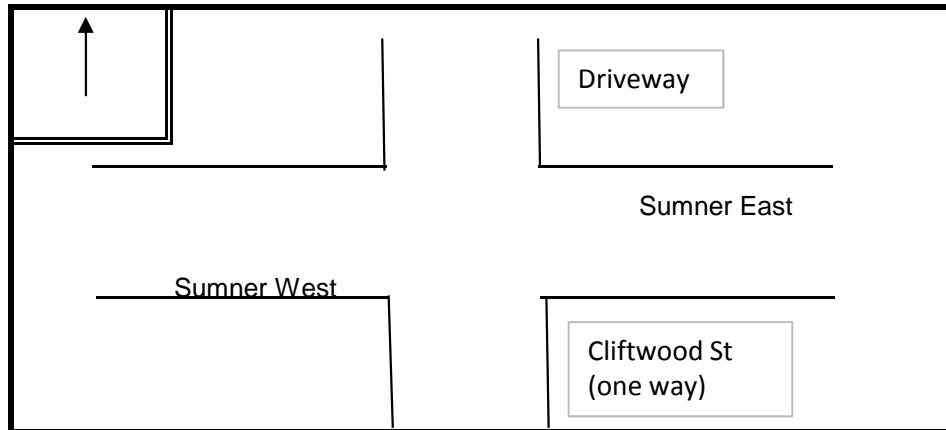
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Cliftwood St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	0	0	1,065	1,029		2,094

" K " FACTOR :

0.078

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

26,966

TOTAL # OF CRASHES :

10

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

2.00

CRASH RATE CALCULATION :

0.20

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

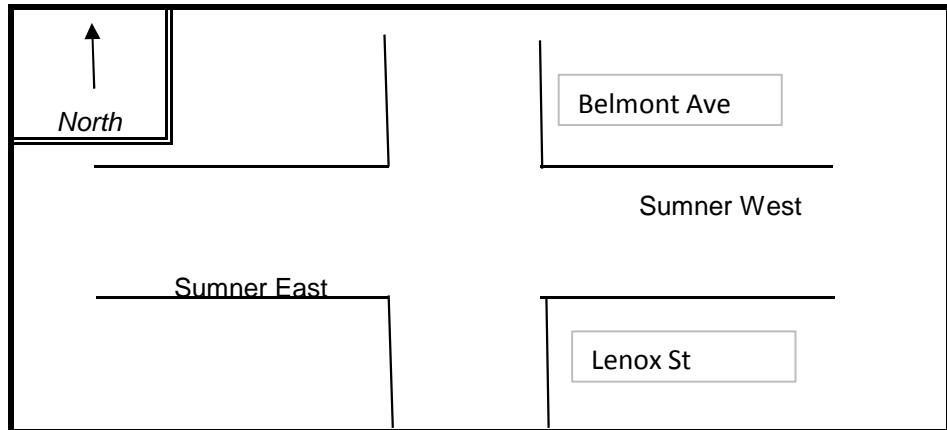
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MAJOR STREET : Sumner Ave

MINOR STREET(S) : Lenox St

Belmont Ave

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	344	199	926	781		2,250

" K " FACTOR :

0.072

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

31,273

TOTAL # OF CRASHES :

20

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

4.00

CRASH RATE CALCULATION :

0.35

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

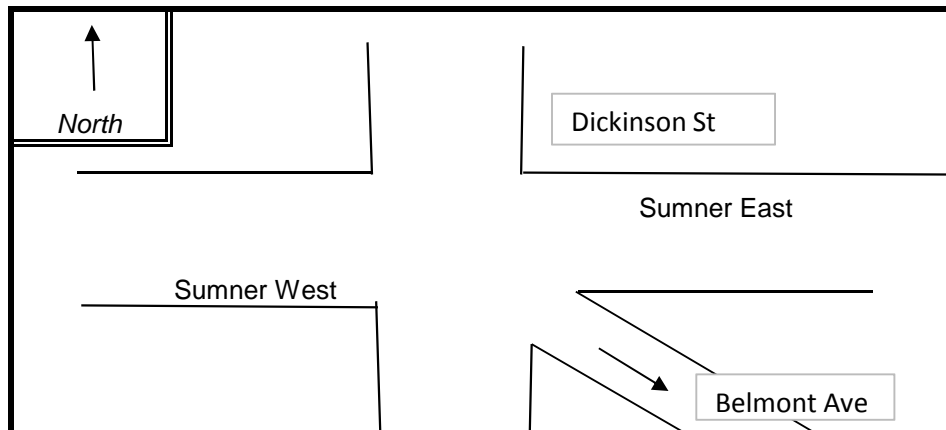
~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Belmont Ave

Dickinson St

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	305	238	1,076	1,267		2,886

" K " FACTOR :

0.088

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

32,886

TOTAL # OF CRASHES :

39

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

7.80

CRASH RATE CALCULATION :

0.65

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

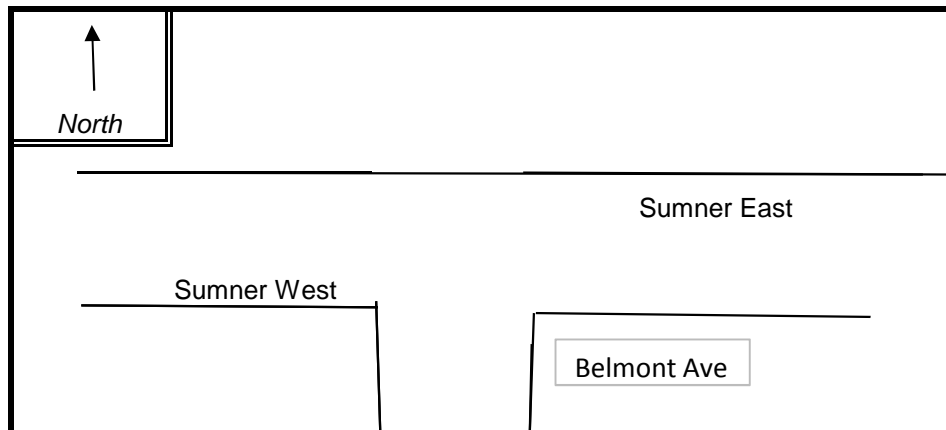
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Belmont Ave

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	0	353	726	724		1,803

" K " FACTOR :

0.060

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

29,893

TOTAL # OF CRASHES :

7

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.40

CRASH RATE CALCULATION :

0.13

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

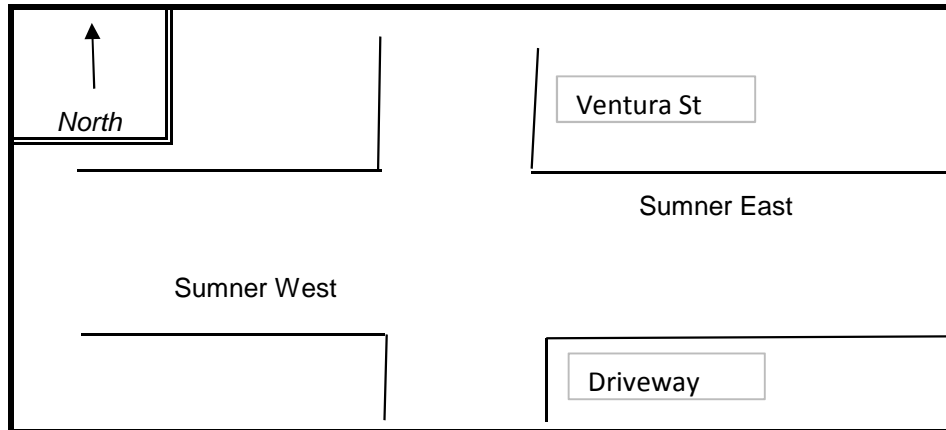
DISTRICT : 2 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Ventura

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	40	12	751	745		1,548

" K " FACTOR :

0.072

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

21,359

TOTAL # OF CRASHES :

8

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.60

CRASH RATE CALCULATION :

0.21

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

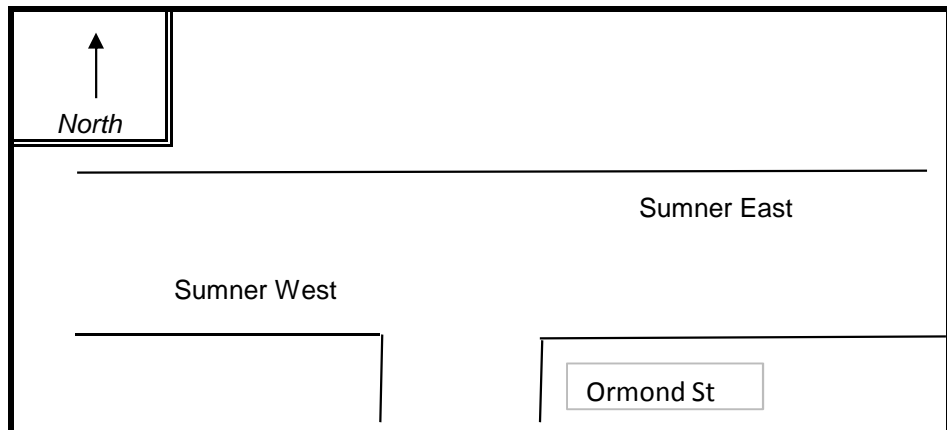
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Ormond St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	-	77	805	824		1,706

" K " FACTOR :

0.080

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

21,359

TOTAL # OF CRASHES :

9

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

1.80

CRASH RATE CALCULATION :

0.23

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

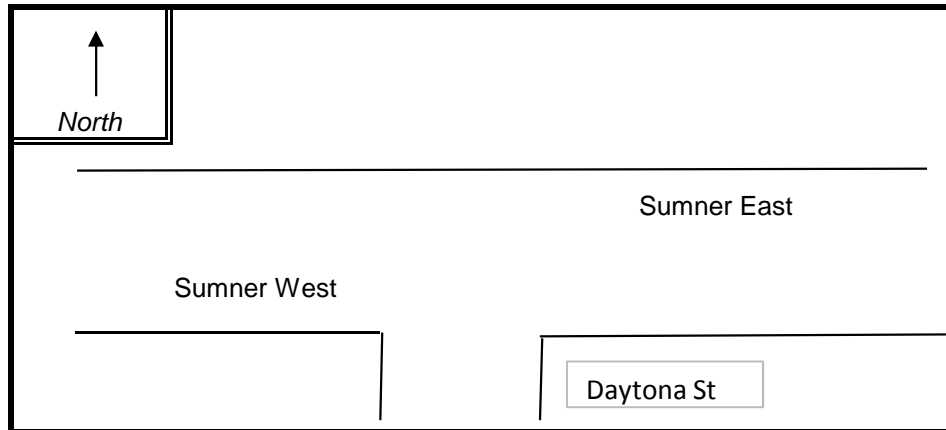
DISTRICT : 2 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Daytona St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	-	46	810	879		1,735

" K " FACTOR :

0.081

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

21,359

TOTAL # OF CRASHES :

3

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

0.60

CRASH RATE CALCULATION :

0.08

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

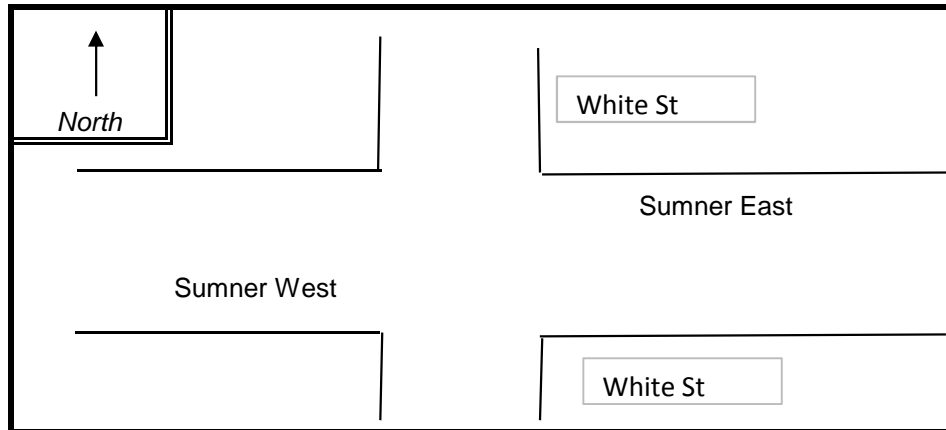
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : White St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	489	323	916	1,036		2,764

" K " FACTOR :

0.129

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

21,359

TOTAL # OF CRASHES :

30

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

6.00

CRASH RATE CALCULATION :

0.77

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

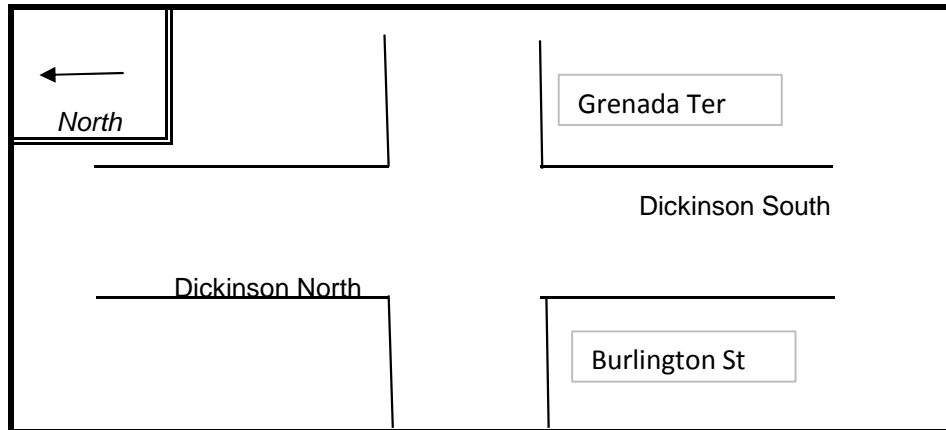
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Dickinson St

MINOR STREET(S) : Grenada Ter

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	349	300	134	44		827

" K " FACTOR :

0.035

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

23,586

TOTAL # OF CRASHES :

7

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

1.40

CRASH RATE CALCULATION :

0.16

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

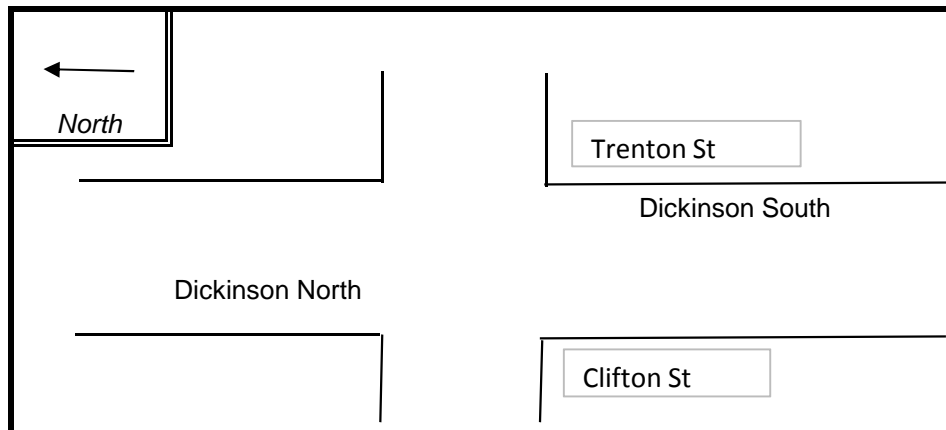
~ INTERSECTION DATA ~

MAJOR STREET : Dickinson St

MINOR STREET(S) : Trenton St

Clifton St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	319	454	0	174		947

" K " FACTOR :

0.121

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

7,826

TOTAL # OF CRASHES :

9

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.80

CRASH RATE CALCULATION :

0.63

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

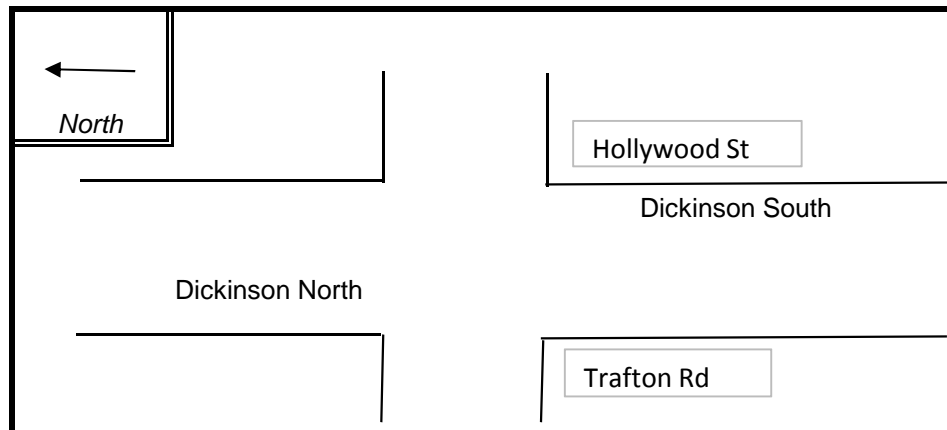
~ INTERSECTION DATA ~

MAJOR STREET : Dickinson St

MINOR STREET(S) : Trafton St

Hollywood St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	453	428	91	60		1,032

" K " FACTOR :

0.132

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

7,826

TOTAL # OF CRASHES :

2

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.40

CRASH RATE CALCULATION :

0.14

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

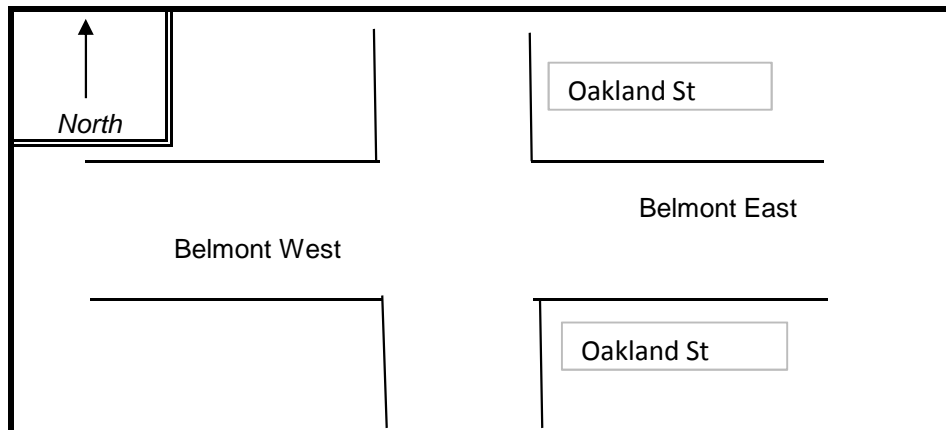
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Sumner Ave

MINOR STREET(S) : Oakland St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	338	141	334	514		1,327

" K " FACTOR :

0.156

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

8,525

TOTAL # OF CRASHES :

17

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

3.40

CRASH RATE CALCULATION :

1.09

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

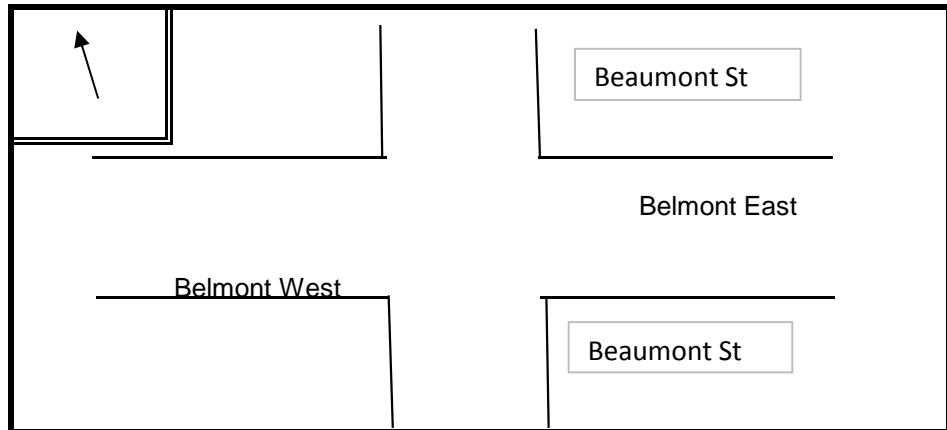
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Belmont Ave

MINOR STREET(S) : Beaumont St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	42	39	299	447		827

" K " FACTOR :

0.097

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

8,525

TOTAL # OF CRASHES :

7

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

1.40

CRASH RATE CALCULATION :

0.45

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Belmont Ave

MINOR STREET(S) : Commonwealth Ave

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	East	West	South	North		
PEAK HOURLY VOLUMES (PM) :	637	447	124	0		1,208

" K " FACTOR :

0.089

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,613

TOTAL # OF CRASHES :

5

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.00

CRASH RATE CALCULATION :

0.20

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

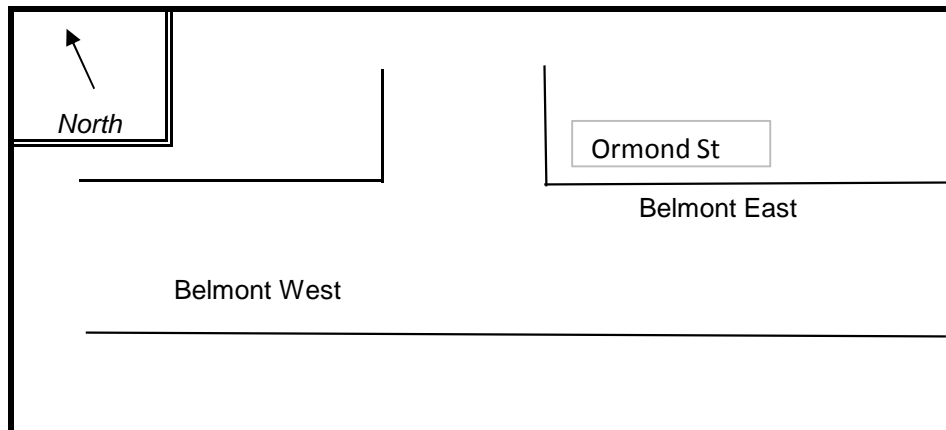
~ INTERSECTION DATA ~

MAJOR STREET : Belmont Ave

MINOR STREET(S) : Daytona St

Hollywood St

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	85	0	407	675		1,167

" K " FACTOR :

0.086

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,613

TOTAL # OF CRASHES :

0

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.00

CRASH RATE CALCULATION :

0.00

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

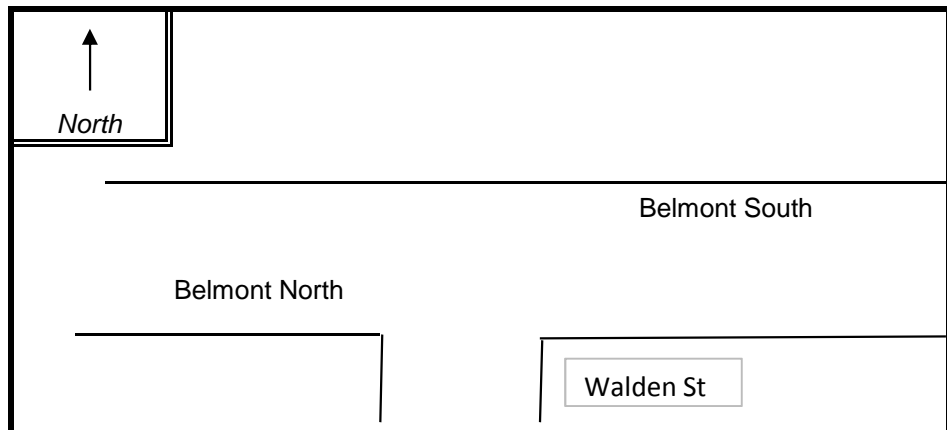
DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Belmont Ave

MINOR STREET(S) : Walden st

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	615	423	60	0		1,098

" K " FACTOR :

0.081

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

13,613

TOTAL # OF CRASHES :

1

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

0.20

CRASH RATE CALCULATION :

0.04

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

CITY/TOWN : Springfield COUNT DATE : 5/5/15-5/7/15

DISTRICT : 2 UNSIGNALIZED : SIGNALIZED :

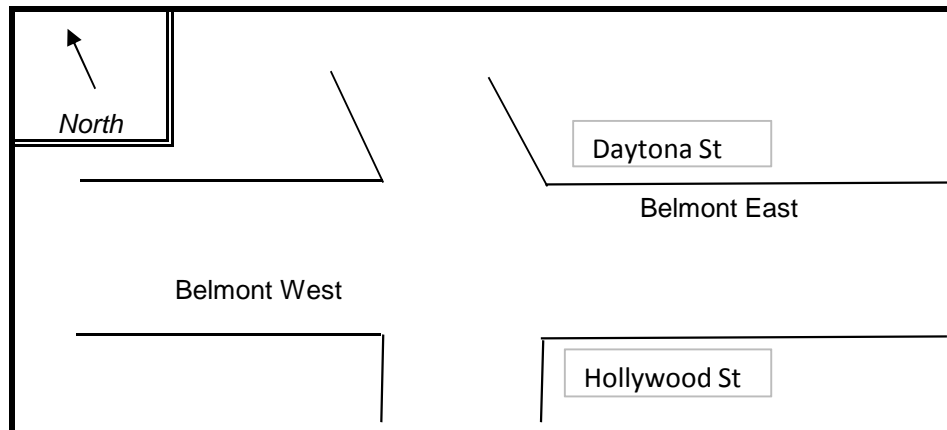
~ INTERSECTION DATA ~

MAJOR STREET : Belmont Ave

MINOR STREET(S) : Daytona St

Hollywood St

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	North	South	East	West		
PEAK HOURLY VOLUMES (PM) :	45	0	456	694		1,195

" K " FACTOR :

0.088

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,613

TOTAL # OF CRASHES :

0

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.00

CRASH RATE CALCULATION :

0.00

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____