Memorandum

To: Mr. David Paley
Russian School of Mathematics
200 Wells Avenue
Newton, MA 02459

Date: May 25, 2021

Project #: 15148.00

From: Randall C. Hart, Principal

Re: Proposed Russian School of Mathematics
46-48 and 66-68 Austin Street
Newton, Massachusetts

Introduction

VHB, Inc. has conducted a traffic impact and access study to assess the potential traffic impacts associated with the proposed new tenant mix for 60 and 66-68 Austin Street in Newton, Massachusetts (the "Site"). Currently, two buildings exist on the Site, with access to the buildings provided via four unsignalized driveways on Austin Street. 60 Austin Street consists of 15,450 sf of medical-office space. 66-68 Austin Street consists of 2 residential units (approximately 3,983 sf).

The proposal will involve transitioning 4,000 sf of the existing medical office space at 60 Austin Street to space designated for the Russian School of Mathematics ("the Project"). Under the proposed Project, the existing parking configuration will remain as is, with the removal of 5 spaces to support the proposed circulation pattern. The proposed tenant mix can be accommodated by the remaining 47 parking spaces on Site.

This memorandum includes an evaluation of the existing traffic operations and safety; an assessment of future conditions with and without the Project; an estimate of projected traffic volumes for the Project and its potential impact on future traffic operations in the area; and a review of parking supply and demand for the Project.

As detailed herein, the proposed Project is expected to have a minor impact on local traffic operations.

Site Location and Proposed Development

The Project Site is located at 60 and 66-68 Austin Street in Newton, Massachusetts. The Site currently consists of two buildings. The building at 60 Austin Street (Building B) consists of 15,450 sf of medical-office space including common areas and bathrooms, and the building at 66-68 Austin Street (Building A) consists of 2 residential units (approximately 3,983 sf). The Project will involve transitioning 4,017 sf of the existing medical office space at 60 Austin Street to space designated for the Russian School of Mathematics. A third building, Building C, is held under common ownership and located to the east of Building B, and was included in this study for consistency

Under existing conditions, access to the Site is comprised of four unsignalized driveways on Austin Street. The existing west Site Driveway (Driveway 1) is west of Building A and provides access to a shared parking lot located in the rear of Buildings A and B. Driveway 2 is located between Buildings A and B with access provided to the rear lot. Driveway 3 is located between Buildings B and C with access provided to the rear lot. Driveway 4 is adjacent east of Driveway 3, separated by a curb, and provides access to a parking lot located in the rear of Building C. The existing Site driveway locations will remain the same under the proposed Project. However, under the proposed condition, the internal Site circulation pattern will be reconfigured to accommodate the expected drop-off/pick-up activity associated with the Russian School. Site Driveways 1 and 2 will be one-way entering the Site while Site Driveway 3 will be one-way exiting the Site. Site Driveway 1 is expected to be the primary entry point, with Site Driveway 2 utilized only for overflow

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traffic during drop-off/pick-up activity. The queue will follow a U-shaped pattern with drop-off/pick-up only occurring at the mouth of Driveway 3. A parking attendant and a teacher will supervise the pick-up/drop-off process and a new sidewalk will be added for efficiency. To accommodate the proposed circulation pattern, 5 of the existing parking spaces will be removed. Site Driveway 4 will maintain its existing configuration and access/egress under future conditions.

Figure 1 shows the Project Site in relation to the surrounding area and a Site plan is included in the Attachments.

Existing Conditions

The existing condition analysis consists of an inventory of the traffic control, roadway, driveway, and intersection geometry in the study area, the collection of daily and peak hour traffic volumes, a summary of public transit options in the area, a review of recent crash history, and documentation of the existing sight distance at the Site driveways.

Study Area

Based on an understanding of the current traffic operations in the area, a study area comprised of the following intersections and their approach roadways were selected for review:

- Lowell Avenue at Austin Street
- Austin Street at Site Driveway 1
- Austin Street at Site Driveway 2
- Austin Street at Site Driveway 3
- Austin Street at Site Driveway 4
- Walnut Street at Austin Street

Figure 2 shows the intersection lane geometry and traffic control at each study area intersection.

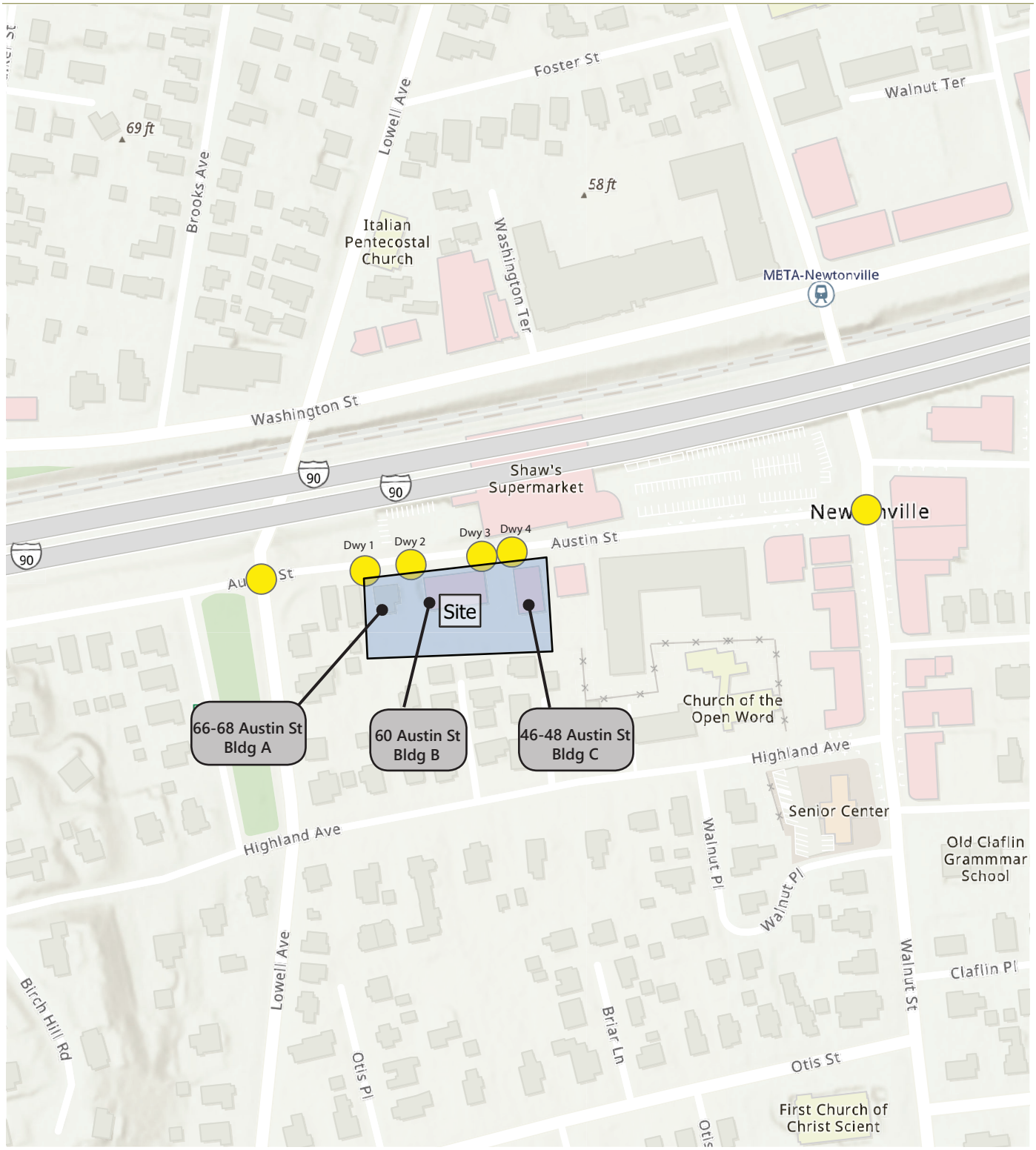
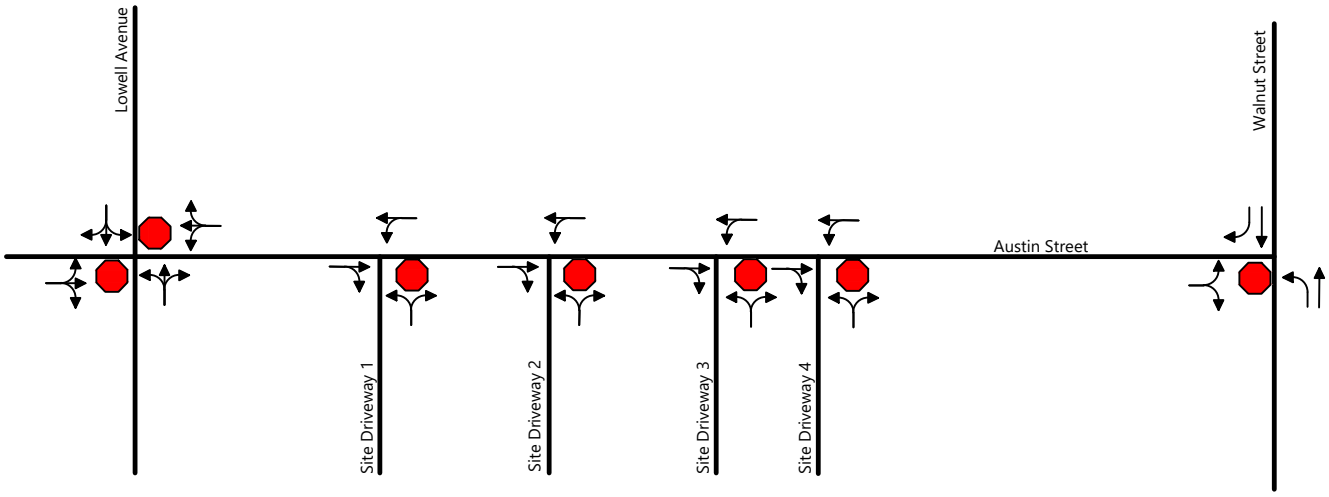


Figure 1

Site Location Map

Russian School of Mathematics
Newton, MA

Signalized Study Area Intersection
Under Stop-Sign Control
neg = Negligible



Not to Scale

Figure 2
Intersection Lane Geometry and Traffic Control

Russian School of Mathematics
Newton, Massachusetts

Study Area Roadways

Austin Street

In this study area, Austin Street is a two-lane roadway running in an east-west direction. It connects to Chestnut Street in the west and Walnut Street in the east. Sidewalks are provided along both sides of Austin Street from Lowell Avenue to Walnut Street. On-street parking is prohibited on both sides of the roadway from Lowell Avenue to Phillip Bram Way where on-street parking is metered to Walnut Street. Austin Street falls under local jurisdiction and is classified as an urban minor arterial. The posted speed limit traveling westbound on Austin Street, east of Lowell Avenue, is 30 mph. Land use along Austin Street is primarily residential and commercial.

Study Area Intersections

Lowell Avenue at Austin Street

Austin Street bisects Lowell Avenue to form a four-legged unsignalized intersection. Lowell Avenue runs north/south and Austin Street runs east/west and is under STOP-sign control. All approaches consist of one general purpose lane. Sidewalks are provided on all approaches and crosswalks are provided across the east, west, and south legs. The posted speed limit on Lowell Avenue traveling northbound is 25 mph. The posted speed limit on Lowell Avenue, south of the study area is 30 mph traveling southbound. There is no posted speed limit on Lowell Avenue, north of the study area for southbound traveling vehicles. Land use around the intersection is mainly residential and commercial.

Austin Street at Site Driveway 1

The west Site driveway, Site Driveway 1, intersects Austin Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane. The Site driveway northbound approach is under STOP-sign control. Site Driveway 1 provides access to a shared lot in the rear of Buildings A and B. Sidewalks are provided on both sides of Austin Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

Austin Street at Site Driveway 2

The west-middle Site driveway, Site Driveway 2, intersects Austin Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane. The Site driveway northbound approach is under STOP-sign control. Site Driveway 2 provides access to a shared lot in the rear of Buildings A and B. Sidewalks are provided on both sides of Austin Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

Austin Street at Site Driveway 3

The east-middle Site driveway, Site Driveway 3, intersects Austin Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane. The Site driveway northbound approach is under STOP-sign control. Site Driveway 2 provides access to a shared lot in the rear of Buildings A and B. Sidewalks are provided on both sides of Austin Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

Austin Street at Site Driveway 4

The east Site driveway, Site Driveway 4, intersects Austin Street from the south to form a three-legged unsignalized intersection. All approaches consist of one general-purpose lane. The Site driveway northbound approach is under

STOP-sign control. Site Driveway 3 and Site Driveway 4 are located adjacent one another and separated by a curb. Site Driveway 4 provides access to a lot in the rear of Building C. Sidewalks are provided on both sides of Austin Street and no crosswalks are provided at this intersection. Land use at the intersection is mainly commercial and residential.

Walnut Street at Austin Street

Austin Street intersects Walnut Street from the west to form a three-legged unsignalized intersection. The eastbound Austin Street approach consists of one general-purpose lane and is under STOP-sign control. The northbound Walnut Street approach consists of an exclusive left-turn lane and a through lane. The southbound Walnut Street approach consists of a through lane and an exclusive right-turn lane. Sidewalks are provided on both sides of all approaches and crosswalks are provided across all legs of the intersection. The posted speed limit on Walnut Street is 25 mph in both directions. Land use at the intersection is mainly commercial and residential.

Traffic Volumes

To assess the existing operational conditions within the study area, peak hour turning movement counts (TMCs) were conducted at the study area intersections during the weekday evening peak period from 4:00 PM to 6:00 PM and the Saturday midday peak period from 11:00 AM to 2:00 PM. These time periods were considered following the standard practice of evaluating the combined peak period for roadway and development traffic. Due to the global COVID-19 pandemic and its effects on traffic flow, historic counts were utilized from April and May 2015 at the intersections of Lowell Avenue at Austin Street and Walnut Street at Austin Street and adjusted using methodology outlined by MassDOT. At the Site driveways, where no historic traffic data was readily available, turning movements were approximated using ITE Trip Generation methodology for the existing land uses. The count data and associated ITE Trip Generation materials are included in the Attachments.

Based on a review of the count data, the weekday evening and Saturday midday peak hours of vehicular activity were determined to be 5:00 PM to 6:00 PM and 11:30 AM to 12:30 PM, respectively.

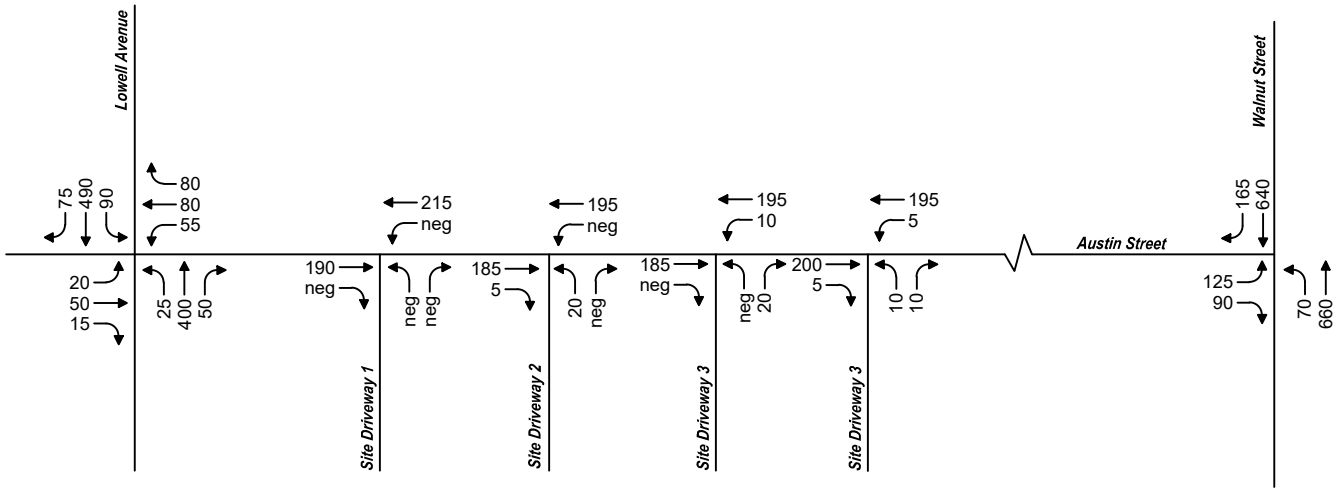
Seasonal Variation

The traffic data collected for the study area were obtained during April and May 2015. To quantify the seasonal variation of traffic volumes in the area, historic traffic data available from MassDOT were reviewed. Specifically, 2019 monthly traffic volumes were reviewed at MassDOT permanent count station AET11 along I-90 Newton. Based on the review, traffic volumes in April and May are approximately 0.4-percent higher than average-month. To present a conservative analysis, no seasonal adjustment was applied to the April and May 2015 traffic volumes. The seasonal adjustment factors are included in the Attachments.

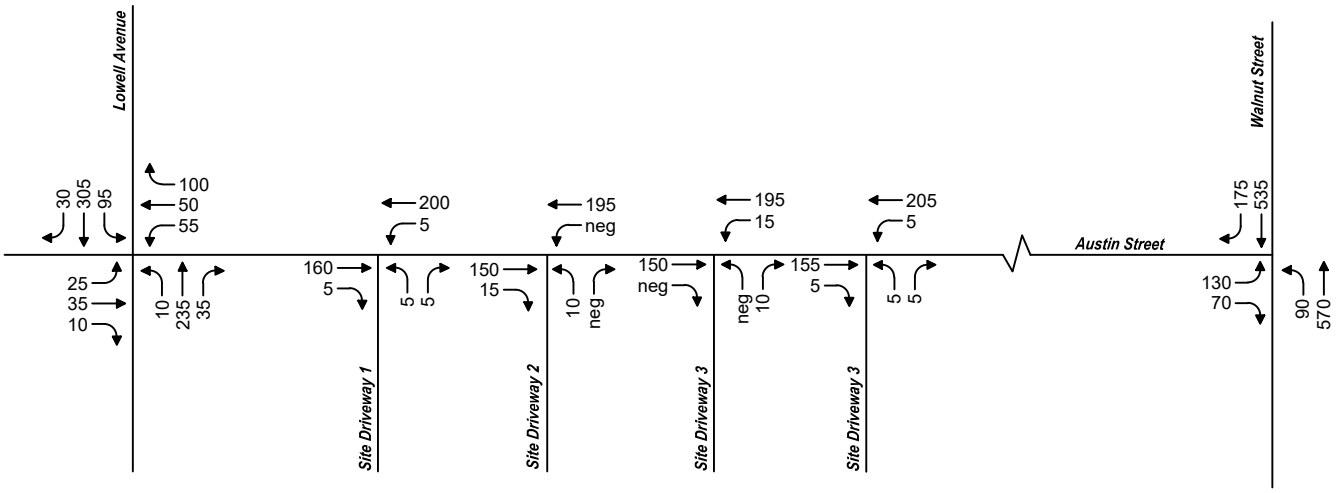
All counts were also adjusted to represent the 2021 Existing conditions based on a historical growth rate described in detail later in this Memorandum. The resulting 2021 Existing traffic volume networks for the weekday evening and Saturday midday peak hours are provided as Figure 3.

Weekday Evening Peak Period

neg = Negligible



Saturday Midday Peak Period



Not to Scale

Figure 3
2021 Existing Conditions
Peak Hour Traffic Volumes
Russian School of Mathematics
Newton, Massachusetts

Public Transportation

Public transportation in Newton and the surrounding area is provided by the Massachusetts Bay Transportation Authority (MBTA). The nearest public transit to the Site is MBTA bus route 59, which travels down Walnut Street. The nearest bus stop to the Site is located at the intersection of Walnut Street at Austin Street, approximately 650 feet east of the Site. Route 59 travels between Watertown Square in Watertown and Needham Junction in Needham. Connections are provided to the Needham Line and the Worcester Line of the commuter rail at Needham Junction and Newtonville, respectively, and to the Green Line at Newton Highlands. Route 59 operates seven days a week and service is provided approximately every 30-40 minutes during peak hours.

The Site is also located within proximity to the D branch of the MBTA's Green Line. The D branch of the Green Line connects Newton with Brookline and Boston and travels from Riverside in Newton to Government Center in Downtown Boston. The nearest stop to the Site on the D branch of the Green Line is Newton Highlands, approximately 2 miles south of the Site on Walnut Street. Service is provided approximately every six-to-eight minutes during peak hours.

Public transportation route maps and schedules are provided in the Attachments to this memorandum. While ample public transportation is provided near the Site, to present a conservative analysis, no credit was taken for Site visitors arriving and departing via public transportation.

It should be noted that, at present, there are temporary reductions in service due to COVID-19. It is assumed that service will return to a pre-COVID-19 schedule by 2028.

Crash Summary

A detailed crash analysis was conducted to identify potential vehicle accident trends and/or roadway deficiencies in the traffic study area. The most current vehicle accident data for the traffic study area intersections were obtained from MassDOT for the years 2014 to 2018. The MassDOT database is comprised of crash data from the Massachusetts Registry of Motor Vehicles (RMV) Division primarily for use in traffic studies and safety evaluations. Data files are provided for an entire city or town for an entire year, though it is possible that some crash records may be omitted either due to individual crashes not being reported, or the city crash records not being provided in a compatible format for RMV use.

Crash rates are calculated based on the number of accidents at an intersection and the volume of traffic traveling through that intersection on a daily basis. Rates that exceed MassDOT's average for accidents at intersections in the MassDOT district in which the town or city is located could indicate safety or geometric issues for a particular intersection. For our study area, the calculated crash rates for the study area intersections were compared to MassDOT's District 6 (The MassDOT district for Newton) average. The current MassDOT average crash rates for signalized and unsignalized intersections in District 6 are 0.71 crashes per million entering vehicles and 0.52 crashes per million entering vehicles, respectively. In other words, on average, 0.71 crashes occurred per million vehicles entering signalized intersections, and 0.52 crashes occurred per million vehicles entering unsignalized intersections throughout District 6.

A summary of the study area intersections vehicle accident history based on the available RMV data is presented in Table 1 and the detailed crash data is provided in the Attachments to this memorandum.

As shown in Table 1, Lowell Avenue at Austin Street has a calculated crash rate above the MassDOT District 6 average crash rate for an unsignalized intersection. In addition to the crash rate being above the district average, the City of

Newton has identified Lowell Avenue at Austin Street as a priority location for safety improvements. With this in mind, a study was conducted, and recommendations have been made for improvements at this location. More detail on the recommendation are provided in mitigation section of this document.

No other study area intersections exceeded the District 6 average crash rate. The majority of crashes that occurred at the study area intersections were angle collisions resulting in property damage only. None of the crashes resulted in fatal injuries. There were no crashes involving non-motorists (bike, pedestrian) that occurred at any of the study area intersections.

Table 1 Vehicular Crash Data (2014 - 2018)

	Lowell Ave at Austin St	Austin St at Site Dwy 1	Austin St at Site Dwy 2	Austin St at Site Dwy 3	Austin St at Site Dwy 4	Walnut St at Austin St
Signalized?	No	No	No	No	No	No
MassDOT Average Crash Rate	0.52	0.52	0.52	0.52	0.52	0.52
Calculated Crash Rate	0.62	0.00	0.12	0.00	0.12	0.34
Exceeds Average?	Yes	No	No	No	No	No
Year						
2014	2	0	0	0	0	2
2015	6	0	0	0	0	1
2016	1	0	0	0	1	2
2017	2	0	1	0	0	0
2018	7	0	0	0	0	7
Total	18	0	1	0	1	12
Collision Type						
Angle	15	0	0	0	0	4
Head-on	0	0	0	0	0	0
Rear-end	2	0	0	0	0	2
Sideswipe, opposite direction	1	0	0	0	0	0
Sideswipe, same direction	0	0	0	0	0	2
Single Vehicle Crash	0	0	0	0	0	4
Not reported	0	0	1	0	1	0
Severity						
Fatal Injury	0	0	0	0	0	0
Non-Fatal Injury	4	0	0	0	0	2
Property Damage Only	13	0	0	0	1	9
Not Reported	1	0	1	0	0	1
Time of day						
Weekday ,7:00 AM - 9:00 AM	0	0	1	0	0	0
Weekday, 4:00 – 6:00 PM	5	0	0	0	0	0
Saturday 11:00 AM – 2:00 PM	1	0	0	0	0	0
Weekday, other time	12	0	0	0	1	12
Weekend, other time	0	0	0	0	0	0
Pavement Conditions						
Dry	16	0	1	0	1	8
Wet	2	0	0	0	0	3
Snow	0	0	0	0	0	1
Not reported	0	0	0	0	0	0
Non-Motorist (Bike, Pedestrian)	0	0	0	0	0	0

Source: Crash data was obtained from MassDOT Crash Portal, Accessed January 2021.

Highway Safety Improvement Program

In addition to calculating the crash rate, study area intersections should also be reviewed in the MassDOT's Highway Safety Improvement Program (HSIP) database. An HSIP-eligible cluster is one in which the total number of "equivalent property damage only"[1] crashes in the area is within the top 5% of all clusters in that region. Being HSIP-eligible makes the location eligible for FHWA and MassDOT funds to address the identified safety issues at these locations. As part of this effort, VHB reviewed this database and found that the intersection of Walnut Street at Austin Street is listed as an HSIP-eligible pedestrian cluster.

Sight Distance

A sight distance analysis, in conformance with guidelines of the American Association of State Highway and Transportation Officials (AASHTO) was performed at the existing unsignalized site driveway intersections along Austin Street. The proposed Site driveways with the Project in place are anticipated to be located in approximately the same locations as the existing Site driveways, with the consolidation of Site Driveways Three and Four. Sight distance considerations are generally divided into two categories: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). Stopping Sight Distance (SSD) is the distance required for a vehicle approaching an intersection from either direction to perceive, react and come to a complete stop before colliding with an object in the road, in this case the exiting vehicle from a driveway. In this respect, SSD can be considered as the minimum visibility criterion for the safe operation of an unsignalized intersection.

Intersection Sight Distance (ISD) is based on the time required for perception, reaction and completion of the desired critical exiting maneuver once the driver on a minor street or driveway approach decided to execute the maneuver. Calculation for the critical ISD includes the time to (1) turn left, and to clear the half of the intersection without conflicting with the vehicles approaching from the left; and (2) accelerate to the operating speed of the roadway without causing approaching vehicles to unduly reduce their speed. In this context, ISD can be considered as a desirable visibility criterion for the safe operation of an unsignalized intersection. Essentially, while SSD is the minimum distance needed to avoid collisions, ISD is the minimum distance needed so that mainline motorists will not have to substantially reduce their speed due to turning vehicles. To maintain the safe operation of an unsignalized intersection, ISD only needs to be equal to the stopping sight distance, though it is desirable to meet ISD requirements by themselves.

Table 2 summarizes the sight distance analysis and the sight distance worksheets are included in the Attachments.

[1] Equivalent property damage only" is a method of combining the number of crashes with the severity of the crashes based on a weighted scale. Crashes involving property damage only are reported at a minimal level of importance, while collisions involving personal injury (or fatalities) are weighted more heavily.

Table 2 Sight Distance Analysis Summary

	Stopping Sight Distance (ft) [a]			Intersection Sight Distance (ft) [a]		
Location	**Traveling**	**Required**	**Measured**	**Looking**	**Desired**	**Measured**
Austin Street at Site Driveway 1	Eastbound	205	222	Left	335	246
	Westbound	200	783	Right	335	723
Austin Street at Site Driveway 2	Eastbound	200	315	Left	335	309
	Westbound	200	654	Right	335	633
Austin Street at Site Driveway 3	Eastbound	200	444	Left	335	462
	Westbound	200	441	Right	335	357
Austin Street at Site Driveway 4	Eastbound	200	468	Left	335	492
	Westbound	200	441	Right	335	357

a Based on guidelines established in A Policy on the Geometric Design of Highways and Streets, Sixth Edition, American Association of State Highway and Transportation Officials (AASHTO), 2011 for a posted speed limit of 30 mph in both directions.

As shown in Table 2, at the unsignalized intersections of Austin Street and all Site Driveways, the required stopping sight distances are exceeded in both directions. The desired intersection sight distance is not met looking left at Site Driveways 1 and 2. However, it should be noted that the measured intersection sight distance at both driveways, looking left, reaches the intersection of Lowell Avenue at Austin Street and therefore is considered adequate. The desired intersection sight distance is met looking right at Site Driveways 1 and 2 and is met looking both left and right for Driveways 3 and 4.

It should be noted that both Driveways 1 and 2 will be converted to enter-only driveways under the proposed plan so the ISD shortcomings will not be an issue in the future.

Future Conditions

To determine the impacts of the Site-generated traffic volumes in the vicinity of the site, future traffic conditions were evaluated. A seven-year horizon (2028) was used for the evaluation consistent with MassDOT TIA requirements.

Traffic growth on area roadways is a function of the expected land development, environmental activity, and changes in demographics. A frequently used procedure is to identify estimated traffic generated by planned developments that would be expected to affect the project study area roadways. An alternative procedure is to estimate an annual percentage increase and apply that increase to study area traffic volumes. For this evaluation, ***both*** procedures were used. The following summarizes this traffic forecasting process.

Historic Growth

Traffic studies conducted in the City of Newton and historic count data were reviewed to establish a rate at which traffic volumes can be expected to grow. A review of recent traffic studies indicated that a 0.5-percent per year growth rate is appropriate for analysis purposes.

Planned Developments

In addition to accounting for background growth, the traffic associated with other planned and/or approved developments near the Site was considered. Based on discussions with the City of Newton, it was determined that the following planned development projects are likely to influence traffic conditions within the vicinity of the Site:

- **Garden Remedies (697 Washington Street)** - The project includes an expansion of the Garden Remedies facility into the existing optometric office portion of the building to allow for recreational marijuana sales. However, recreational sales had not yet started at the time of the traffic counts in May 2015, and therefore all projected traffic associated with recreational sales were added to the study area roadways. Impacts to the study area were estimated as based on the published 2018 TIAS.
- **58 Cross Street/ 1089 Washington Street** - The project involves the reuse of an existing 5,000-square-foot building as a marijuana dispensary. The project is currently under construction. Impacts to the study area were estimated as based on the traffic memorandum by Fuss & O'Neil.
- **1158 Beacon Street** – The project involves the repurposing of a portion of the existing building located at 1158 Beacon Street in Newton, Massachusetts. Approximately 2,300 sf of space is proposed to be repurposed as a cannabis dispensary. Impacts to the study area were estimated as based on the traffic memorandum by Fuss & O'Neil.
- **304 Walnut Street** – The project is for a proposed mixed-use development at 304 Walnut Street in Newton, Massachusetts. The site was previously occupied by a CVS pharmacy. This project is still in the conceptual stages of design and therefore no traffic projections have been made regarding this development.
- **Washington Street at Walker Street** – The project is for a proposed mixed-use development at the corner of Washington Street and Walker Street. The project will consist of residential unis with ground floor commercial. This project is still in the conceptual stages of design and therefore no traffic projections have been made regarding this development.
- **Dunstan East (West Newton)** - The project is comprised of three mixed use buildings ranging from three to six stories on two blocks. All of the buildings have ground floors that are primarily comprised of retail and residential common space. The smallest building has 72 apartments and the largest has 90 apartments. Cumulatively, the three buildings offer approximately 236 apartments ranging from studios to three bedrooms. The project provides a total of approximately 5,821 sf of retail space. The total area of the project, excluding parking, is 294,894 sf. The project has been approved but construction has not yet started.
- **Washington Place (Newtonville)** - The project involves the construction of 140 residential units and 43,860 sf of retail space at the intersection of Washington Street and Walnut Street in the Newtonville neighborhood of Newton. The project is constructed but not yet fully leased. However, construction had not yet started at the time of the traffic counts in May 2015, and therefore all projected traffic associated with the development were added to the study area roadways.
- **28 Austin Street** - The project involves the construction of 68 residential units and 5,000 sf of retail at 28 Austin Street in the Newtonville neighborhood of Newton. The project includes the reconstruction of a municipal parking lot. However, construction had not yet started at the time of the traffic counts in May 2015, and therefore all projected traffic associated with the development were added to the study area roadways.

- **Sunrise Assisted Living** – The project proposal includes the redevelopment of the former Clay Nissan site located at the northwest corner of the intersection of Washington Street at Hovey Street in the Newton Corner section of Newton, Massachusetts. The redevelopment involves the demolition of the existing retail and vehicle maintenance facility and the construction of a Sunrise of Newton senior living facility of 122 beds. The facility is nearly complete.
- **77-83 Court Street** – The proposed development project entails raising the existing on-site structures at 75 and 83 Court Street (two buildings with 4 and 2 apartment units, respectively) and constructing a 36-unit residential condominium building. The project has since been constructed and occupied. However, construction had not yet started at the time of the traffic counts in May 2015, and therefore all projected traffic associated with the development were added to the study area roadways.

Background Transportation Projects

In assessing future traffic conditions, proposed roadway improvements within the study area were considered. Based on discussions with the City of Newton, the following transportation project is planned within the seven-year horizon:

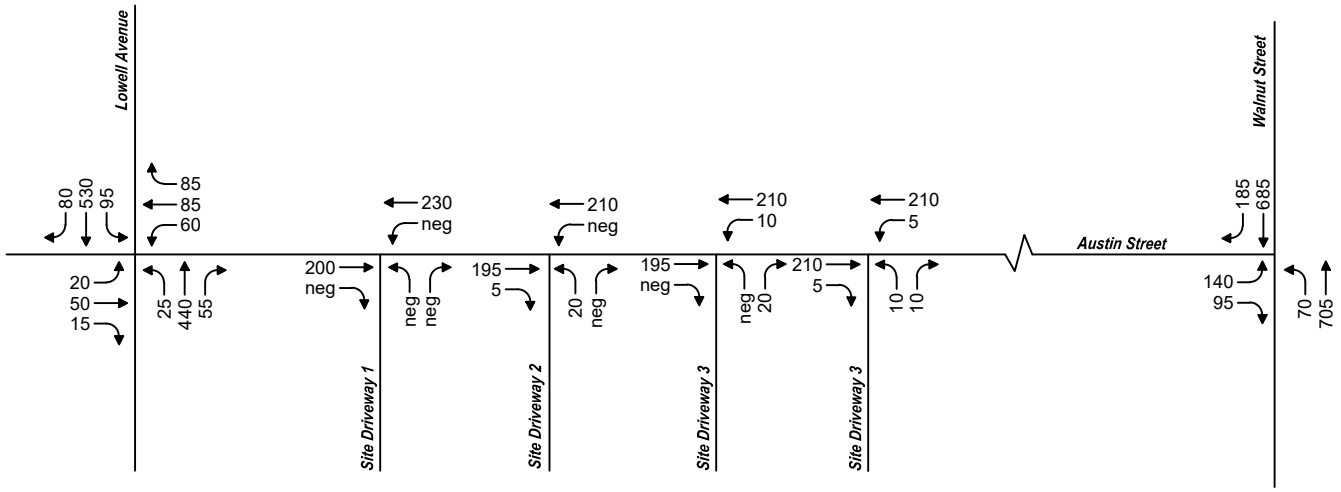
- **Rehabilitation of Walnut Street** – The proposed project involves the construction of sidewalk and streetscape improvements for Walnut Street in Newtonville. Intended to enhance the safety, characters, and functionality of Walnut Street for all users, the project will include upgrades to the street, signal timings, sidewalks, landscaping, and lighting. The proposed road layout for Walnut Street was approved in June, 2018, with construction starting in March, 2020. The approved plans are in the Attachments to this memorandum.

No-Build Traffic Volumes

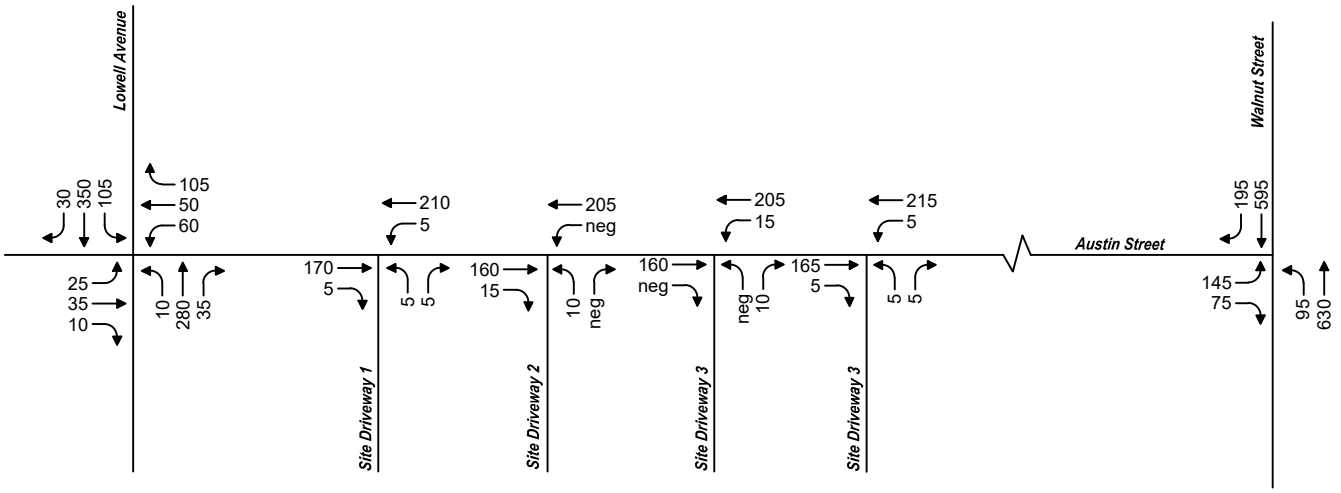
The 2028 No-Build traffic volumes were generated by consideration of the above described factors. The resulting 2028 No-Build peak hour traffic volume networks are provided as Figure 4.

Weekday Evening Peak Period

neg = Negligible



Saturday Midday Peak Period



Not to Scale

Figure 4
2028 No-Build Conditions
Peak Hour Traffic Volumes
Russian School of Mathematics
Newton, Massachusetts

Trip Generation

The proposed Project will involve transitioning 4,000 sf of the existing medical office space at 60 Austin Street to space designated for the Russian School of Mathematics. Trip generation estimates for the future conditions were developed from the proposed class schedule and expected number of students, supplemented by carpool data provided by the existing Russian School of Mathematics location on Wells Avenue, in Newton, Massachusetts. To provide a conservative analysis, credit was not taken for trips associated with the existing 4,000 sf of medical-office space that will be eliminated with the Project. Table 3 provides a trip generation summary.

It should be noted that a portion of the students are expected to carpool. While this number is projected to be as high as 36% based on data across the school's footprint, VHB utilized the existing carpool data for the Russian School Wells Avenue location to determine a more conservative 25%. The 25% carpool reduction in Project-trips is reflected in Table 3.

Table 3 New Trip Generation Summary

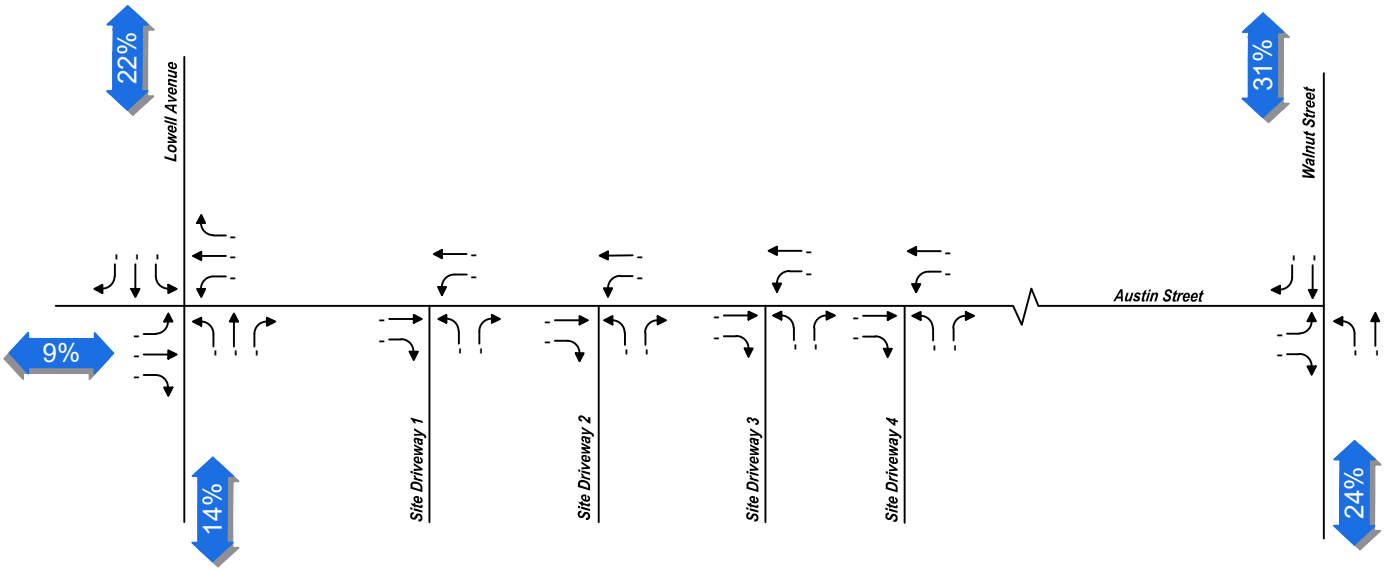
Time Period	Direction	Project Trips [a]
Weekday Evening	Enter	92
	Exit	92
	Total	184
Saturday Midday	Enter	98
	Exit	98
	Total	196

a Trip generation estimate based on the proposed schedule for the Russian School of Mathematics and application of 25% carpool assumption

As shown in Table 3, the proposed Project is expected to generate approximately 184 vehicle trips (92 entering/92 exiting) during the weekday evening peak hour (5-6PM) and approximately 196 vehicle trips (98 entering/98 exiting) during the Saturday Midday peak hour (11:30-12:30). As noted previously, to present a conservative analysis no credit was taken for the trips associated with the existing 4,000 sf of medical office space.

Trip Distribution

The directional distribution of traffic approaching and departing a Site is a function of several variables: population densities, existing travel patterns, and the efficiency of the roadways leading to the site. The trip distribution for this Project has been derived based on existing travel patterns within the vicinity of the Site as Project-trips are expected to be mostly local, based on the nature of the proposed Project. Table 4 summarizes the trip distribution. Figure 5 displays the trip distribution.



Not to Scale

Figure 5
Regional Trip Distribution

Russian School of Mathematics
Newton, Massachusetts

Table 4 Trip Distribution

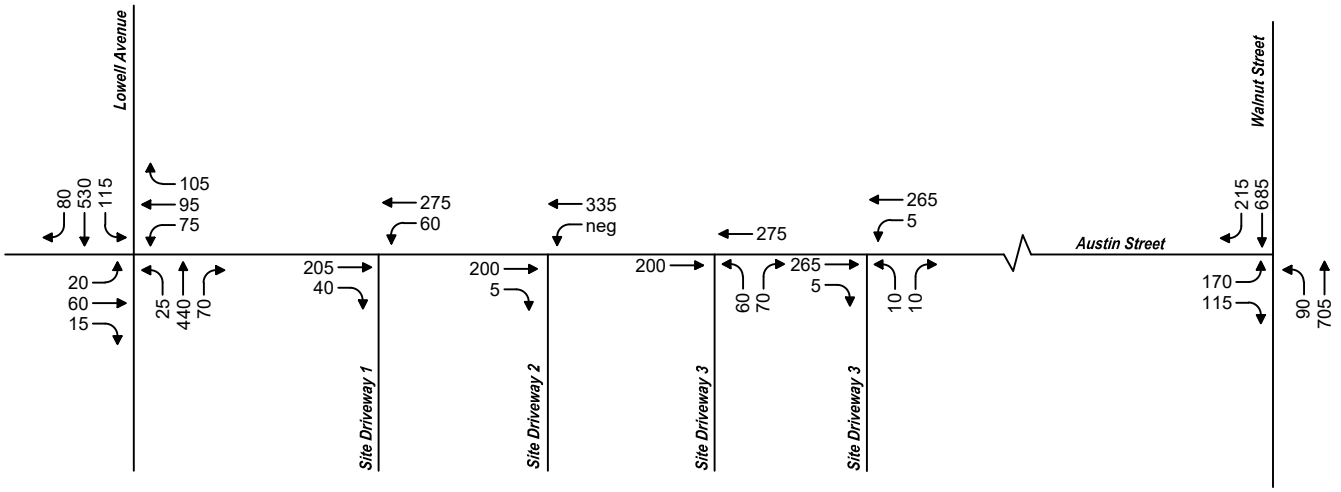
Travel Route	Direction (from/to)	Percent Site Traffic
Lowell Avenue	North	22%
	South	14%
Austin Street	West	9%
Walnut Street	North	31%
	South	24%
Total		100%

Build Traffic Volumes

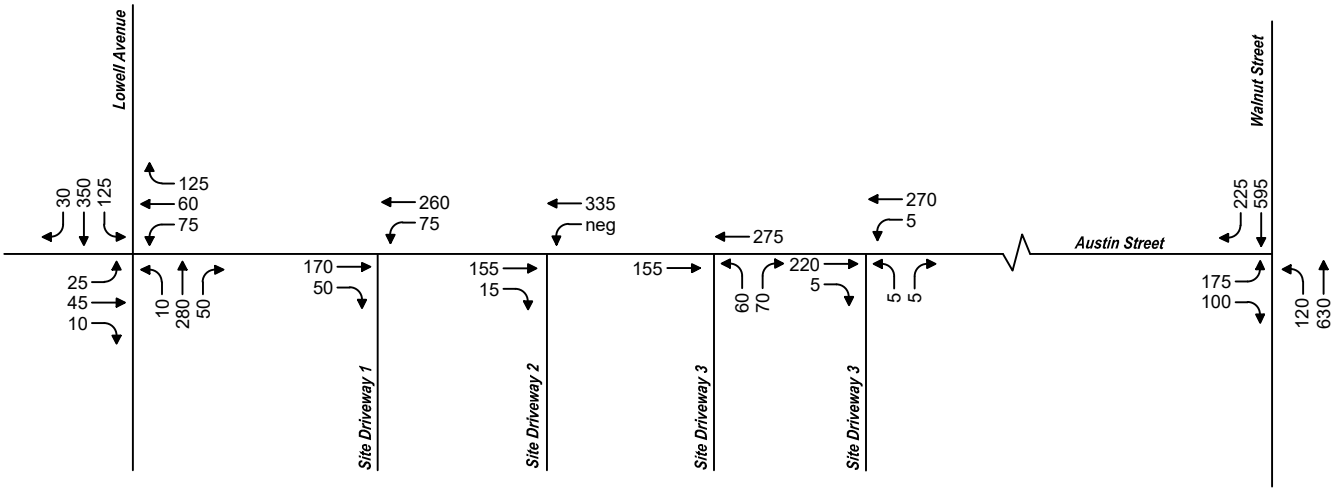
The Project-related traffic volumes shown in Table 3 are assigned to the study area roadway network based on the trip distribution patterns shown in Table 4 and added to the 2028 No-Build peak hour traffic volume networks to develop the 2028 Build peak hour traffic volume networks. The 2028 Build peak hour traffic volume networks are provided as Figure 6. The Site-generated traffic volume networks are included in the Attachments.

Weekday Evening Peak Period

neg = Negligible



Saturday Midday Peak Period



Not to Scale

Figure 6

2028 Build Conditions
Peak Hour Traffic Volumes
Russian School of Mathematics
Newton, Massachusetts

Traffic Operations Analysis

To assess quality of flow, intersection capacity analyses were conducted with respect to 2021 Existing, 2028 No-Build, and 2028 Build traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them. Roadway operating conditions are classified by calculated levels-of-service.

Level of Service Criteria

Level–of-service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Level-of-service provides an index to operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

For this study, capacity analyses were completed for the unsignalized intersections within the study area using Synchro traffic analysis software. Level-of-service designation is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of each lane or lane group entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. The LOS is only determined for left turns from the main street and all movements from the minor street.

The evaluation criteria used to analyze the signalized study area intersection in this traffic study is based on the percentile-delay method (SYNCHRO results). The evaluation criteria used to analyze the unsignalized study area intersections is based on the *Highway Capacity Manual* (HCM) 6th Edition[2].

Intersection Capacity Analysis

Levels-of-service analyses were conducted for the 2021 Existing, 2028 No-Build, and 2028 Build conditions for the study area intersections. Table 5 summarizes the capacity analyses for the unsignalized study area intersections. The capacity analyses worksheets are included in the Attachments to this memorandum.

[2] Highway Capacity Manual, Transportation Research Board, Washington D.C., 2016.

Table 5 Unsignalized Intersection Capacity Analysis

Location / Movement	2021 Existing Conditions					2028 No-Build Conditions					2028 Build Conditions				
	D [a]	v/c [b]	Del [c]	LOS [d]	95 Q [e]	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q
Lowell Avenue at Austin Street															
Weekday Evening															
EB L/T/R	85	0.97	>120	F	153	85	>1.20	>120	F	205	95	Err	Err	F	Err
WB L/T/R	215	>1.20	>120	F	405	230	>1.20	>120	F	525	275	>1.20	>120	F	748
NB L	25	0.03	9	A	3	25	0.03	9	A	3	25	0.03	9	A	3
SB L	90	0.09	9	A	8	95	0.10	9	A	8	115	0.12	9	A	10
Saturday Midday															
EB L/T/R	70	0.42	36	E	48	70	0.43	40	E	50	80	0.58	57	F	75
WB L/T/R	205	0.72	41	E	130	215	0.82	57	F	168	260	1.14	>120	F	320
NB L	10	0.01	8	A	0	10	0.01	8	A	0	10	0.01	8	A	0
SB L	95	0.09	8	A	8	105	0.10	8	A	8	125	0.12	8	A	10
Austin Street at Site Driveway 1															
Weekday Evening															
WB L	0	0.00	0	A	0	0	0.00	0	A	0	60	0.05	8	A	5
NB L/R	1	0.00	11	B	0	1	0.00	12	B	0	n/a	n/a	n/a	n/a	n/a
Saturday Midday															
WB L	5	0.00	8	A	0	5	0.00	8	A	0	75	0.06	8	A	5
NB L/R	10	0.02	10	B	0	10	0.02	10	B	0	n/a	n/a	n/a	n/a	n/a
Austin Street at Site Driveway 2															
Weekday Evening															
WB L	0	0.00	0	A	0	0	0.00	0	A	0	0	0.00	0	A	0
NB L/R	20	0.04	11	B	3	20	0.04	12	B	3	n/a	n/a	n/a	n/a	n/a
Saturday Midday															
WB L	0	n/a	n/a	n/a	n/a	0	0.00	0	A	0	0	0.00	0	A	0
NB L/R	10	0.02	11	B	3	10	0.02	11	B	3	n/a	n/a	n/a	n/a	n/a
Austin Street at Site Driveway 3															
Weekday Evening															
WB L	10	0.01	8	A	0	10	0.01	8	A	0	n/a	n/a	n/a	n/a	n/a
NB L/R	20	0.03	9	A	3	20	0.03	10	A	3	130	0.22	12	B	20
Saturday Midday															
WB L	15	0.01	8	A	0	15	0.01	8	A	0	n/a	n/a	n/a	n/a	n/a
NB L/R	10	0.01	9	A	0	10	0.01	9	A	0	130	0.20	12	B	20
Austin Street at Site Driveway 4															
Weekday Evening															
WB L	5	0.00	8	A	0	5	0.00	8	A	0	5	0.00	8	A	0
NB L/R	20	0.03	11	B	3	20	0.03	11	B	3	20	0.04	12	B	3
Saturday Midday															
WB L	5	0.00	8	A	0	5	0.00	8	A	0	5	0.00	8	A	0
NB L/R	10	0.02	10	B	0	10	0.02	10	B	0	10	0.02	11	B	3

a Demand
b Volume to capacity ratio.
c Average total delay, in seconds per vehicle.
d Level-of-service.
e 95th percentile queue, in feet.
95th percentile volume exceeds capacity; queue may be longer.

Table 5 Unsignalized Intersection Capacity Analysis (Cont.)

Location / Movement	2021 Existing Conditions					2028 No-Build Conditions					2028 Build Conditions				
	D [a]	v/c [b]	Del [c]	LOS [d]	95 Q [e]	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q
Walnut Street at Austin Street															
Weekday Evening															
EB L/R	215	>1.20	>120	F	460	235	>1.20	>120	F	555	285	>1.20	>120	F	748
NB L	70	0.10	10	B	8	70	0.11	11	B	10	90	0.15	11	B	13
Saturday Midday															
EB L/R	200	>1.20	>120	F	463	220	>1.20	>120	F	548	275	>1.20	>120	F	750
NB L	90	0.13	11	B	13	95	0.16	11	B	13	120	0.20	12	B	20

a Demand
b Volume to capacity ratio.
c Average total delay, in seconds per vehicle.
d Level-of-service.
e 95th percentile queue, in feet.
95th percentile volume exceeds capacity; queue may be longer.

As shown in Table 5, the Project is expected to have minor impacts on traffic operations at the study area intersections. Minor changes to overall or individual movement delays and queues are expected between 2028 No-Build and 2028 Build conditions during both peak hours. The only movement to degrade in Level-of-Service between the 2028 No-Build and Build Conditions is the eastbound STOP-controlled movement at the intersection of Lowell Avenue at Austin Street during the Saturday Midday peak period. This movement degrades from LOS E to LOS F with an increase in delay of 17 seconds and an increase in queue length of approximately 25 ft, about one vehicle.

At the intersection of Lowell Avenue at Austin Street, the northbound and southbound left-turns from Lowell Avenue are expected to operate at LOS A while the eastbound and westbound Austin Street approaches are expected to operate at LOS F during the weekday evening and Saturday midday peak hours with queues of up to 750 feet. Synchro reports an error for the eastbound STOP-controlled movement during the weekday evening peak hour, indicating that this movement has exceeded the capacity thresholds. While the analyses show that there may be significant queuing, it should be noted that Synchro results for unsignalized intersections assume a larger gap in traffic is needed to turn left or right than is usually accepted in the real world, resulting in overly-conservative results. The default left-turn and right-turn acceptances used were 7.1 and 6.2 seconds, respectively, in accordance with the Highway Capacity Manual, which is conservative for a developed area in Eastern Massachusetts. A more realistic gap acceptance in Massachusetts is 5.2 seconds for left-turns and 5.9 seconds for right-turns[3]. However, to be consistent with HCM methodology, the default gap acceptances have been used for all unsignalized analyses instead of the more aggressive gap acceptances that occur in Massachusetts.

Mitigation

As demonstrated above, the proposed Project is not expected to result in significant traffic impacts within the study area. However, the Proponent is proposing to initiate specific pick-up/drop-off protocols (traffic management plan) on-site to ensure that traffic operations are efficient and effective within the Site. In addition, the Proponent is aware of the safety concerns and priority that the City has to improve the Austin Street at Lowell Avenue intersection to the west of the Site and, as a result, they would like to participate in helping the City get a project moving at that location.

[3] Safety and Operational Assessment of Gap Acceptance Through Large-Scale Field Evaluation; Steven Maxwell Tupper, University of Massachusetts Amherst (2011); Master Theses 1911; February 2014.

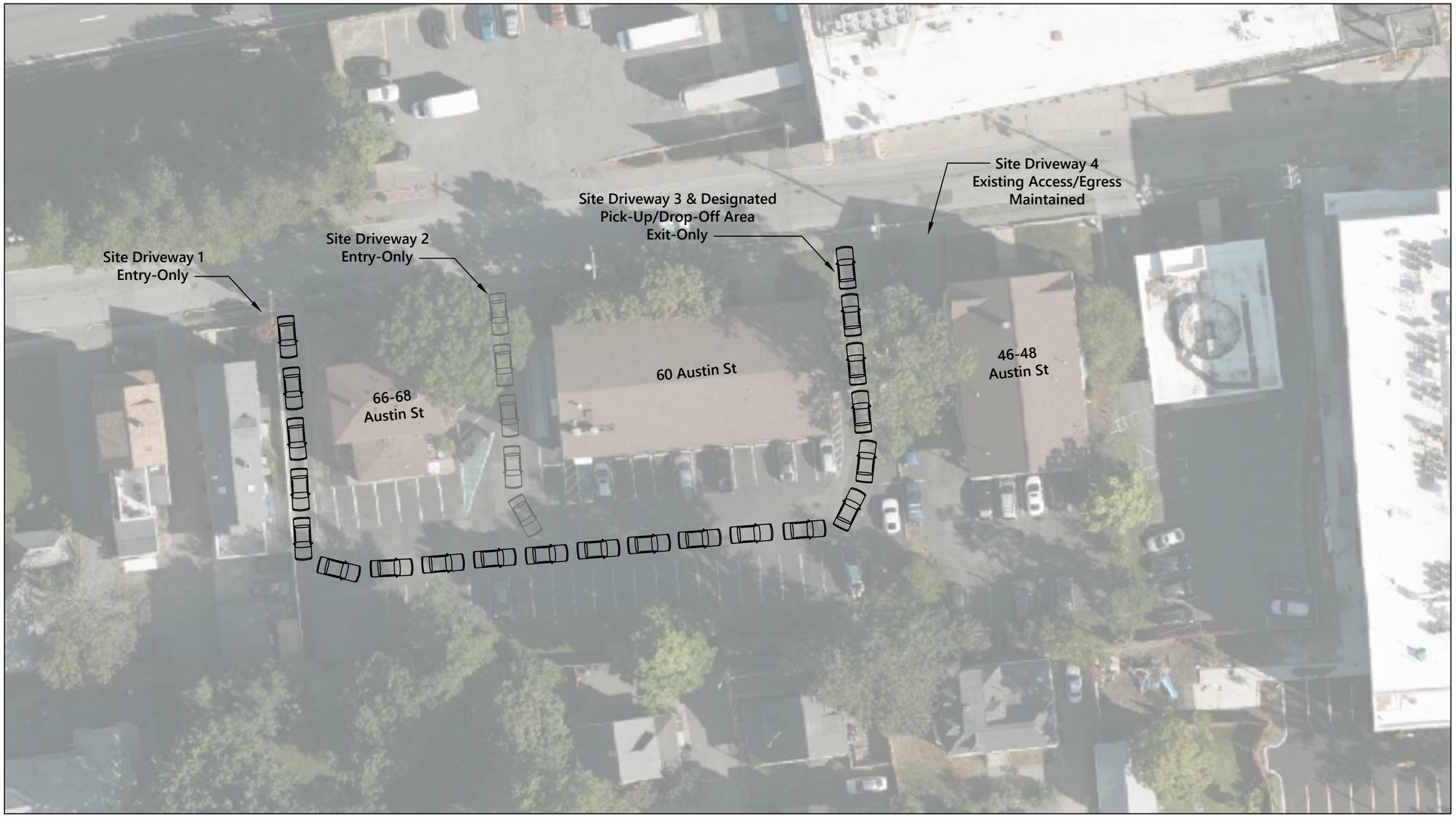
The following section describes the proposed traffic management plan and the potential improvements at Austin Street at Lowell Avenue, as well as how the Proponent will participate.

Parking Management Plan

As part of the Project, the Proponent will designate the 2 westernmost driveways as enter only and the second to last eastern driveway (60 Austin Street) as an egress only driveway. The changes proposed for the driveway access are to establish a one-way circulation loop for the 60 and 66-68 Austin Street properties in a counterclockwise direction. 46-48 Austin Street will allow both ingress and egress operations as it does today. During school hours, 3:00 PM – 9:00 PM on weekdays and 9:00 AM – 6:30 PM on weekends, there will be a pick-up/drop-off loop established whereby one enters from either of the two western driveways, travels east through the back parking lot (counterclockwise), and exits at the existing driveway on the east side of the building. At the curb near Austin Street there will be a pick-up/drop-off area designated and students will exit the vehicles there and proceed to the front door under the supervision of school staff. A combination of a parking attendant and a teacher will manage the operations to ensure that smooth operations are realized. To ensure maximum distribution of arrivals and departures, the class schedules have been staggered to spread out the activity associated with pick-up/drop-off and no more than 2 classes will commence or conclude at any given 10-minute interval. RSM has extensive experience operating in a variety of municipalities (including Wells Avenue in Newton) and has found that this scheduling format allows them to manage the drop off and pick up well. Detailed information on anticipated class schedule and potential number of vehicles on-site by 15-minute period is included as a spreadsheet in the Attachments.

As noted in the spreadsheet, the maximum average vehicles that are expected to be on-site during a 15-minute period ranges from 18 to 30 vehicles on a weekday and 16 to 27 vehicles on a weekend day. Under the proposed plan there are approximately 47 parking spaces on-site. In addition, the drop-off/pick-up loop has room for up to 25 vehicles and, as mentioned, the operation will be managed by a parking attendant and a teacher to ensure efficiency. Refer to Figure 7 for demonstration of the pick-up/drop-off plan. RSM will establish protocols for parents to follow to ensure efficiency of the pick-up/drop-off plan at this Site. At a minimum, the following protocols are anticipated to be implemented:

- Parent will be instructed not to park on-site and then patronize the shops in Newtonville. Instead, if that is the goal while students are in class, they need to be directed to the public parking garage, just east of the Site.
- If a child is not ready at the curb for pick-up, the parent will be sent around the loop a second time so as to not impede smooth flow.



0 20 40 Feet

Figure 7
Pick-up/ Drop-Off Plan

Russian School of Mathematics
Newton, Massachusetts

Austin Street at Lowell Avenue

At the direction of the City of Newton, TEC, Inc prepared an evaluation of traffic operations characteristics at the intersection of Austin Street at Lowell Avenue dated March 31, 2020. The study considers the existing characteristics including geometry, traffic volumes and pedestrian activity, distribution, and accident history. The assessment considered many types of potential improvements at this intersection including:

- Installation of a traffic signal
- Installation of a roundabout
- Installation of multi-way stop control
- Various road calming and pedestrian improvements

The report made recommendations that included reducing crossing distances for pedestrians, increasing visibility for pedestrians, improving vehicular sight lines, and reducing conflicts between through vehicles, turning vehicles and pedestrians. The following two alternatives were recognized that may address some, or all, of the items listed above:

- Alternative 1/1A
- Alternative 2/2A

Both alternatives consider curb extensions or bump-outs along with various pedestrian treatments. The estimated cost for the options ranges from $125,000 to $145,000. For the purpose of encouraging improvements to occur at this intersection, the Proponent will make a contribution for changes at the intersection in the amount of $50,000. A contribution of that amount may be suitable for design of said improvements.

Conclusion

VHB has conducted a traffic impact and access study to assess the potential traffic impacts associated with the Project at 60 and 66-68 Austin Street in Newton, Massachusetts. The Project will involve transitioning 4,000 sf of the existing medical office space at 60 Austin Street to space designated for the Russian School of Mathematics. Under the proposed Project, the existing parking configuration will remain as is, with the removal of 5 spaces to support the proposed circulation pattern. The proposed Project can be accommodated by the remaining 47 parking spaces on-site.

The proposed Project is expected to generate approximately 184 vehicle trips (92 entering/92 exiting) during the weekday evening peak hour and approximately 196 vehicle trips (98 entering/98 exiting) during the Saturday midday peak hour. Based on the intersection capacity analysis, it was determined that the Project will have minimal impact upon intersection operations at the study area intersections.

Attachments

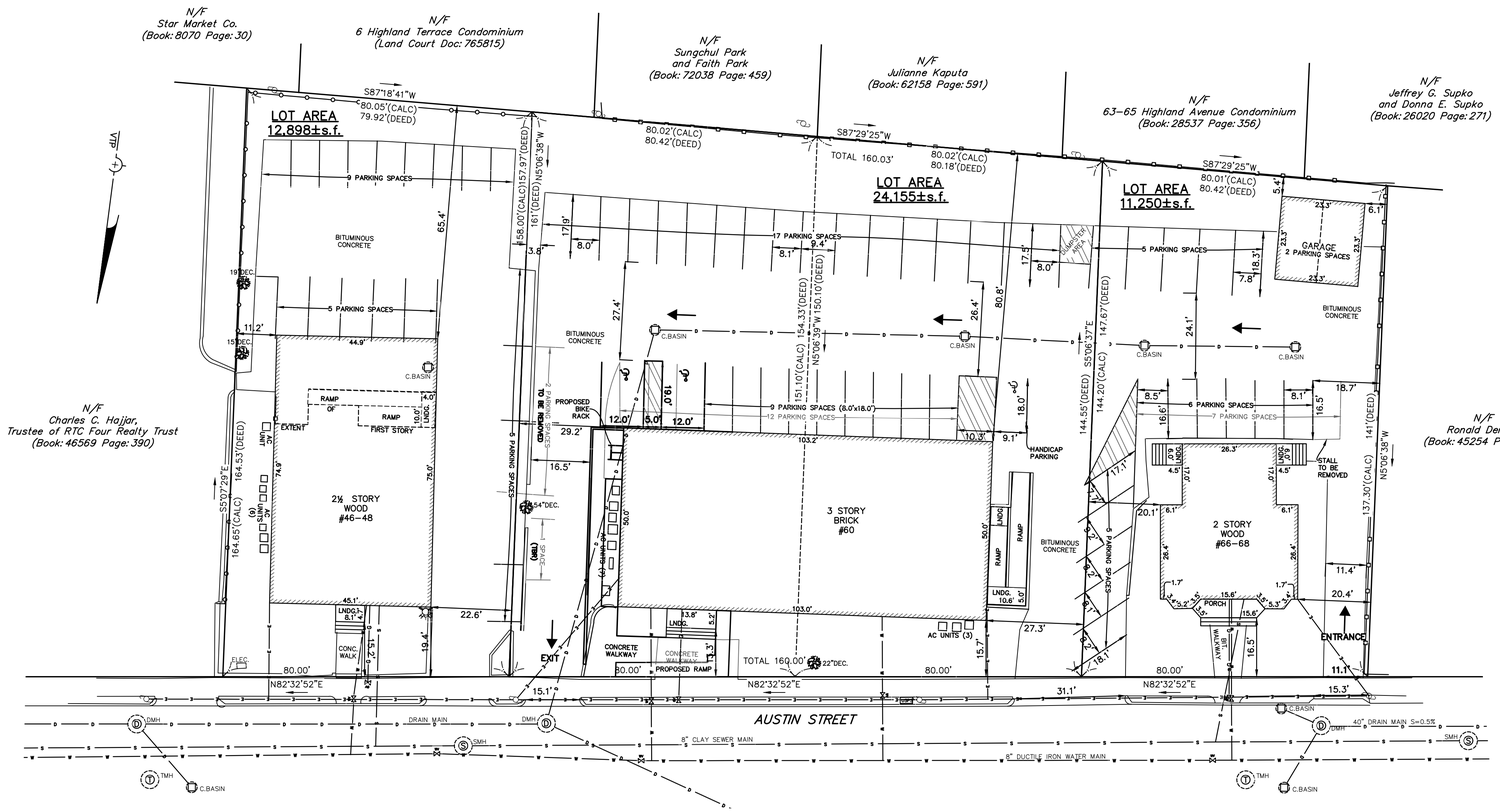
- Site Plan
- Traffic Volume Data
- ITE Trip Generation – Existing Land Uses
- Seasonal Adjustment Data
- Public Transportation
- Vehicular Crash Data
- Sight Distance Analysis
- Walnut Street Conceptual Plans
- Site-Generated Traffic Volume Networks
- Intersection Capacity Analyses
- Anticipated Class Schedule & Vehicles On-Site

220210bp.dwg (2.2020)

LEGEND

- BUILDING
- PROPERTY LINE W/ BEARING DISTANCE — S81°56'34"E 116.23'
- CONTOUR — 70 —
- STOCKADE FENCE
- CHAINLINK FENCE
- PICKET FENCE
- SEWER LINE — S —
- DRAIN LINE — D —
- WATER LINE — W —
- GAS LINE — G —
- GAS VALVE
- WATER VALVE
- DRAIN MANHOLE
- SEWER MANHOLE
- CATCH BASIN
- UTILITY POLE
- LIGHT POLE
- DECIDUOUS TREE — DEC. 22"
- CONIFEROUS TREE — CON. 12"
- FIRE HYDRANT

PARKING COUNT		
	EXISTING	PROPOSED
#60 AUSTIN STREET	32	26
#66-68 AUSTIN STREET	19	18
HANDICAP STALL	1	3
TOTAL	52	47



ZONING CHART (#60)		
NEWTON, MASSACHUSETTS		
ZONE: BU-5	SUBMISSION: EXISTING	
REGULATION	REQUIRED	EXISTING
LOT AREA	0s.f.	24,155±s.f.
LOT FRONTAGE	N/A	160.0'
FRONT SETBACK	15.0'	13.3'*
SIDE SETBACK	10.0'	27.3'
REAR SETBACK	20.0'	80.8'
LOT COVERAGE	25.0%	21.4%
*NON-CONFORMING		

ZONING CHART (#66-68)		
NEWTON, MASSACHUSETTS		
ZONE: BU-5	SUBMISSION: EXISTING	
REGULATION	REQUIRED	EXISTING
LOT AREA	0s.f.	11,250±s.f.
LOT FRONTAGE	N/A	80.0'
FRONT SETBACK	15.0'	16.5'
SIDE SETBACK	10.0'	20.1'
REAR SETBACK	20.0'	N/A
LOT COVERAGE	25.0%	19.0%
*NON-CONFORMING		

0 20 50 100

SCALE: 1" = 20'

CERTIFIED PLOT PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED CONDITIONS AT
#46-48, 60, & 66-68 AUSTIN STREET

SCALE: 1in.=20ft. DATE: MARCH 19, 2021

PROJECT: 220210

VTP ASSOCIATES INC.

LAND SURVEYORS – CIVIL ENGINEERS. 132
ADAMS STREET 2ND FLOOR SUITE 3
NEWTON, MA 02458
(617) 332-8271

SHEET 1 OF 1

Transportation Data Corporation

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N/S: Lowell Street
E/W: Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557A
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	2	92	14	0	14	9	5	0	12	61	1	0	3	5	7	0	225
07:15 AM	9	140	16	0	10	6	5	0	21	102	4	0	1	14	6	0	334
07:30 AM	7	166	42	0	8	6	9	0	16	156	3	0	6	17	10	0	446
07:45 AM	8	107	25	0	9	21	14	0	28	104	8	0	6	23	8	0	361
Total	26	505	97	0	41	42	33	0	77	423	16	0	16	59	31	0	1366
08:00 AM	6	75	17	0	14	9	8	0	11	65	4	0	6	20	11	0	246
08:15 AM	3	88	18	0	17	11	5	0	18	79	4	0	3	16	13	0	275
08:30 AM	6	84	25	0	12	12	11	0	13	91	5	0	2	16	6	0	283
08:45 AM	6	84	25	0	10	13	5	0	17	82	3	0	1	20	6	0	272
Total	21	331	85	0	53	45	29	0	59	317	16	0	12	72	36	0	1076
Grand Total	47	836	182	0	94	87	62	0	136	740	32	0	28	131	67	0	2442
Apprch %	4.4	78.5	17.1	0	38.7	35.8	25.5	0	15	81.5	3.5	0	12.4	58	29.6	0	
Total %	1.9	34.2	7.5	0	3.8	3.6	2.5	0	5.6	30.3	1.3	0	1.1	5.4	2.7	0	
Cars & Peds	47	811	180	0	86	85	59	0	135	734	32	0	25	131	65	0	2390
% Cars & Peds	100	97	98.9	0	91.5	97.7	95.2	0	99.3	99.2	100	0	89.3	100	97	0	97.9
Trucks & Buses	0	21	2	0	8	0	1	0	1	3	0	0	0	0	2	0	38
% Trucks & Buses	0	2.5	1.1	0	8.5	0	1.6	0	0.7	0.4	0	0	0	0	3	0	1.6
Bikes by Direction	0	4	0	0	0	2	2	0	0	3	0	0	3	0	0	0	14
% Bikes by Direction	0	0.5	0	0	0	2.3	3.2	0	0	0.4	0	0	10.7	0	0	0	0.6

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**9**	140	16	0	165	10	6	5	0	21	21	102	4	0	127	1	14	6	0	21	334
07:30 AM	7	**166**	**42**	0	**215**	8	6	9	0	23	16	**156**	3	0	**175**	**6**	17	10	0	33	**446**
07:45 AM	8	107	25	0	140	9	**21**	**14**	0	**44**	**28**	104	**8**	0	140	6	**23**	8	0	**37**	361
08:00 AM	6	75	17	0	98	**14**	9	8	0	31	11	65	4	0	80	6	20	**11**	0	37	246
Total Volume	30	488	100	0	618	41	42	36	0	119	76	427	19	0	522	19	74	35	0	128	1387
% App. Total	4.9	79	16.2	0		34.5	35.3	30.3	0		14.6	81.8	3.6	0		14.8	57.8	27.3	0		
PHF	.833	.735	.595	.000	.719	.732	.500	.643	.000	.676	.679	.684	.594	.000	.746	.792	.804	.795	.000	.865	.777
Cars & Peds	30	474	99	0	603	39	40	33	0	112	76	424	19	0	519	16	74	33	0	123	1357
% Cars & Peds	100	97.1	99.0	0	97.6	95.1	95.2	91.7	0	94.1	100	99.3	100	0	99.4	84.2	100	94.3	0	96.1	97.8
Trucks & Buses	0	11	1	0	12	2	0	1	0	3	0	2	0	0	2	0	0	2	0	2	19
% Trucks & Buses	0	2.3	1.0	0	1.9	4.9	0	2.8	0	2.5	0	0.5	0	0	0.4	0	0	5.7	0	1.6	1.4
Bikes by Direction	0	3	0	0	3	0	2	2	0	4	0	1	0	0	1	3	0	0	0	3	11
% Bikes by Direction	0	0.6	0	0	0.5	0	4.8	5.6	0	3.4	0	0.2	0	0	0.2	15.8	0	0	0	2.3	0.8

Transportation Data Corporation

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tel (781) 587-0086 cell (781) 439-4999

N/S: Lowell Street
E/W: Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557A
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Cars & Peds

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	2	90	14	0	11	9	5	0	12	61	1	0	3	5	7	0	220
07:15 AM	9	136	16	0	10	6	5	0	21	101	4	0	1	14	4	0	327
07:30 AM	7	164	42	0	8	6	8	0	16	156	3	0	6	17	10	0	443
07:45 AM	8	100	25	0	8	20	13	0	28	104	8	0	5	23	8	0	350
Total	26	490	97	0	37	41	31	0	77	422	16	0	15	59	29	0	1340
08:00 AM	6	74	16	0	13	8	7	0	11	63	4	0	4	20	11	0	237
08:15 AM	3	83	18	0	17	11	5	0	17	77	4	0	3	16	13	0	267
08:30 AM	6	82	24	0	10	12	11	0	13	90	5	0	2	16	6	0	277
08:45 AM	6	82	25	0	9	13	5	0	17	82	3	0	1	20	6	0	269
Total	21	321	83	0	49	44	28	0	58	312	16	0	10	72	36	0	1050
Grand Total	47	811	180	0	86	85	59	0	135	734	32	0	25	131	65	0	2390
Apprch %	4.5	78.1	17.3	0	37.4	37	25.7	0	15	81.5	3.6	0	11.3	59.3	29.4	0	
Total %	2	33.9	7.5	0	3.6	3.6	2.5	0	5.6	30.7	1.3	0	1	5.5	2.7	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**9**	136	16	0	161	10	6	5	0	21	21	101	4	0	126	1	14	4	0	19	327
07:30 AM	7	**164**	**42**	0	**213**	8	6	8	0	22	16	**156**	3	0	**175**	**6**	17	10	0	33	**443**
07:45 AM	8	100	25	0	133	8	**20**	**13**	0	**41**	**28**	104	**8**	0	140	5	**23**	8	0	**36**	350
08:00 AM	6	74	16	0	96	**13**	8	7	0	28	11	63	4	0	78	4	20	**11**	0	35	237
Total Volume	30	474	99	0	603	39	40	33	0	112	76	424	19	0	519	16	74	33	0	123	1357
% App. Total	5	78.6	16.4	0		34.8	35.7	29.5	0		14.6	81.7	3.7	0		13	60.2	26.8	0		
PHF	.833	.723	.589	.000	.708	.750	.500	.635	.000	.683	.679	.679	.594	.000	.741	.667	.804	.750	.000	.854	.766

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N/S: Lowell Street
E/W: Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557A
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Trucks & Buses

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	5
07:15 AM	0	4	0	0	0	0	0	0	0	1	0	0	0	0	2	0	7
07:30 AM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	12	0	0	4	0	1	0	0	1	0	0	0	0	2	0	20
08:00 AM	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	4
08:15 AM	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
08:30 AM	0	2	1	0	2	0	0	0	0	1	0	0	0	0	0	0	6
08:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	9	2	0	4	0	0	0	1	2	0	0	0	0	0	0	18
Grand Total	0	21	2	0	8	0	1	0	1	3	0	0	0	0	2	0	38
Apprch %	0	91.3	8.7	0	88.9	0	11.1	0	25	75	0	0	0	0	100	0	
Total %	0	55.3	5.3	0	21.1	0	2.6	0	2.6	7.9	0	0	0	0	5.3	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 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	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
08:00 AM	0	1	**1**	0	2	1	0	0	0	1	0	**1**	0	0	**1**	0	0	0	0	0	4
08:15 AM	0	**5**	0	0	**5**	0	0	0	0	0	**1**	0	0	0	1	0	0	0	0	0	**6**
08:30 AM	0	2	1	0	3	**2**	0	0	0	**2**	0	1	0	0	1	0	0	0	0	0	6
Total Volume	0	12	2	0	14	4	0	0	0	4	1	2	0	0	3	0	0	0	0	0	21
% App. Total	0	85.7	14.3	0		100	0	0	0		33.3	66.7	0	0		0	0	0	0		
PHF	.000	.600	.500	.000	.700	.500	.000	.000	.000	.500	.250	.500	.000	.000	.750	.000	.000	.000	.000	.000	.875

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557A
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	3	0	0	0	1	1	0	0	0	0	0	1	0	0	0	6
Total	0	3	0	0	0	1	1	0	0	0	0	0	1	0	0	0	6
08:00 AM	0	0	0	0	0	1	1	0	0	1	0	0	2	0	0	0	5
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	1	1	0	0	3	0	0	2	0	0	0	8
Grand Total	0	4	0	0	0	2	2	0	0	3	0	0	3	0	0	0	14
Apprch %	0	100	0	0	0	50	50	0	0	100	0	0	100	0	0	0	
Total %	0	28.6	0	0	0	14.3	14.3	0	0	21.4	0	0	21.4	0	0	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	**3**	0	0	**3**	0	**1**	**1**	0	**2**	0	0	0	0	0	1	0	0	0	1	**6**
08:00 AM	0	0	0	0	0	0	1	1	0	2	0	1	0	0	1	**2**	0	0	0	**2**	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	0	2
Total Volume	0	3	0	0	3	0	2	2	0	4	0	3	0	0	3	3	0	0	0	3	13
% App. Total	0	100	0	0		0	50	50	0		0	100	0	0		100	0	0	0		
PHF	.000	.250	.000	.000	.250	.000	.500	.500	.000	.500	.000	.375	.000	.000	.375	.375	.000	.000	.000	.375	.542

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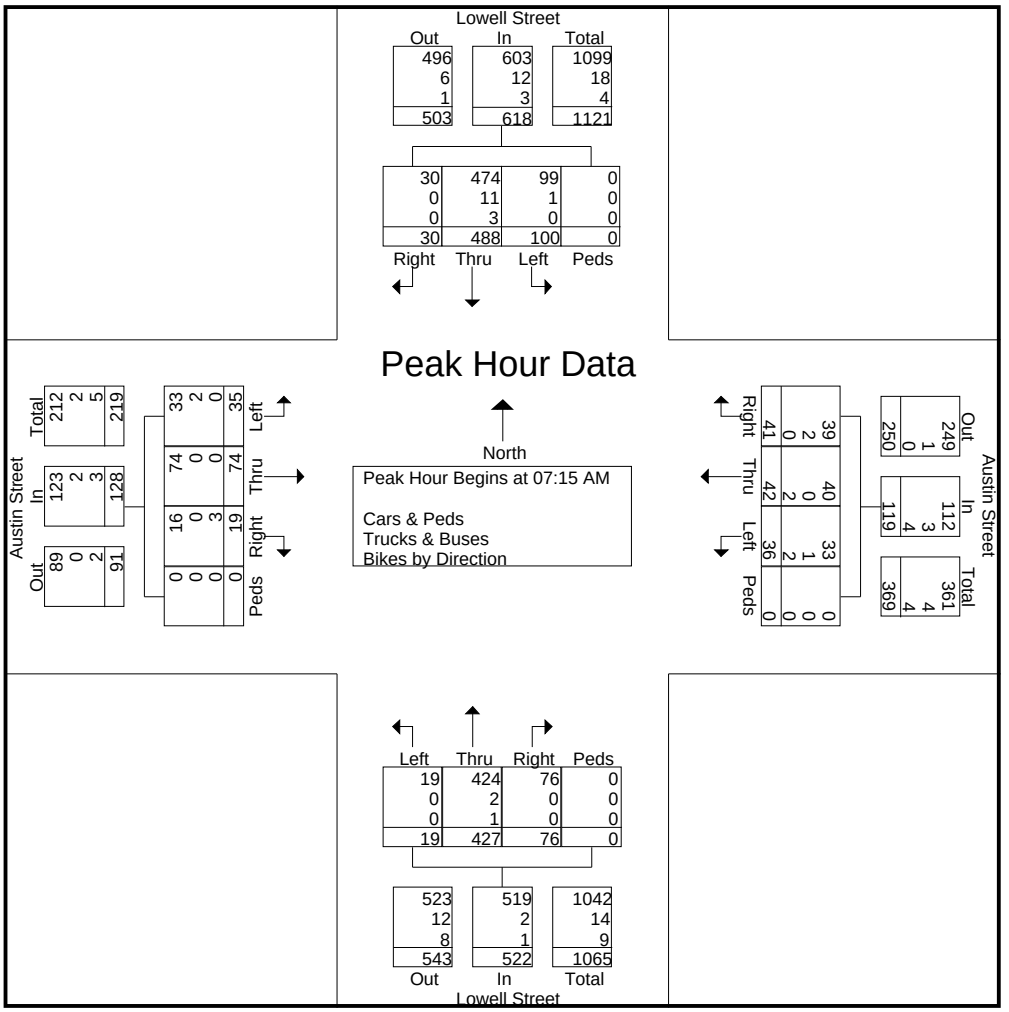
File Name : 04557A
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**9**	140	16	0	165	10	6	5	0	21	21	102	4	0	127	1	14	6	0	21	334
07:30 AM	7	**166**	**42**	0	**215**	8	6	9	0	23	16	**156**	3	0	**175**	**6**	17	10	0	33	**446**
07:45 AM	8	107	25	0	140	9	**21**	**14**	0	**44**	**28**	104	**8**	0	140	6	**23**	8	0	**37**	361
08:00 AM	6	75	17	0	98	**14**	9	8	0	31	11	65	4	0	80	6	20	**11**	0	37	246
Total Volume	30	488	100	0	618	41	42	36	0	119	76	427	19	0	522	19	74	35	0	128	1387
% App. Total	4.9	79	16.2	0		34.5	35.3	30.3	0		14.6	81.8	3.6	0		14.8	57.8	27.3	0		
PHF	.833	.735	.595	.000	.719	.732	.500	.643	.000	.676	.679	.684	.594	.000	.746	.792	.804	.795	.000	.865	.777
Cars & Peds	30	474	99	0	603	39	40	33	0	112	76	424	19	0	519	16	74	33	0	123	1357
% Cars & Peds	100	97.1	99.0	0	97.6	95.1	95.2	91.7	0	94.1	100	99.3	100	0	99.4	84.2	100	94.3	0	96.1	97.8
Trucks & Buses	0	11	1	0	12	2	0	1	0	3	0	2	0	0	2	0	0	2	0	2	19
% Trucks & Buses	0	2.3	1.0	0	1.9	4.9	0	2.8	0	2.5	0	0.5	0	0	0.4	0	0	5.7	0	1.6	1.4
Bikes by Direction	0	3	0	0	3	0	2	2	0	4	0	1	0	0	1	3	0	0	0	3	11
% Bikes by Direction	0	0.6	0	0	0.5	0	4.8	5.6	0	3.4	0	0.2	0	0	0.2	15.8	0	0	0	2.3	0.8



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File Name : 04557AA
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	24	121	12	0	20	15	10	0	8	76	6	0	4	9	9	0	314
04:15 PM	13	95	20	0	14	13	9	0	12	64	5	0	4	10	4	0	263
04:30 PM	12	92	13	0	19	13	9	0	12	61	4	0	4	5	7	0	251
04:45 PM	20	113	18	0	9	30	23	0	11	61	6	0	2	13	1	0	307
Total	69	421	63	0	62	71	51	0	43	262	21	0	14	37	21	0	1135
05:00 PM	20	110	17	0	16	23	14	0	11	86	3	0	1	5	2	0	308
05:15 PM	19	112	21	0	19	14	12	0	10	84	7	0	3	15	6	0	322
05:30 PM	12	113	26	0	18	20	16	0	10	98	5	0	5	13	6	0	342
05:45 PM	19	114	20	0	22	14	7	0	16	99	8	0	3	14	5	0	341
Total	70	449	84	0	75	71	49	0	47	367	23	0	12	47	19	0	1313
Grand Total	139	870	147	0	137	142	100	0	90	629	44	0	26	84	40	0	2448
Apprch %	12	75.3	12.7	0	36.1	37.5	26.4	0	11.8	82.4	5.8	0	17.3	56	26.7	0	
Total %	5.7	35.5	6	0	5.6	5.8	4.1	0	3.7	25.7	1.8	0	1.1	3.4	1.6	0	
Cars & Peds	138	864	144	0	133	142	100	0	90	625	44	0	26	84	40	0	2430
% Cars & Peds	99.3	99.3	98	0	97.1	100	100	0	100	99.4	100	0	100	100	100	0	99.3
Trucks & Buses	0	3	1	0	1	0	0	0	0	1	0	0	0	0	0	0	6
% Trucks & Buses	0	0.3	0.7	0	0.7	0	0	0	0	0.2	0	0	0	0	0	0	0.2
Bikes by Direction	1	3	2	0	3	0	0	0	0	3	0	0	0	0	0	0	12
% Bikes by Direction	0.7	0.3	1.4	0	2.2	0	0	0	0	0.5	0	0	0	0	0	0	0.5

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**20**	110	17	0	147	16	**23**	14	0	53	11	86	3	0	100	1	5	2	0	8	308
05:15 PM	19	112	21	0	152	19	14	12	0	45	10	84	7	0	101	3	**15**	**6**	0	**24**	322
05:30 PM	12	113	**26**	0	151	18	20	**16**	0	**54**	10	98	5	0	113	**5**	13	6	0	24	**342**
05:45 PM	19	**114**	20	0	**153**	**22**	14	7	0	43	**16**	**99**	**8**	0	**123**	3	14	5	0	22	341
Total Volume	70	449	84	0	603	75	71	49	0	195	47	367	23	0	437	12	47	19	0	78	1313
% App. Total	11.6	74.5	13.9	0		38.5	36.4	25.1	0		10.8	84	5.3	0		15.4	60.3	24.4	0		
PHF	.875	.985	.808	.000	.985	.852	.772	.766	.000	.903	.734	.927	.719	.000	.888	.600	.783	.792	.000	.813	.960
Cars & Peds	70	449	81	0	600	74	71	49	0	194	47	366	23	0	436	12	47	19	0	78	1308
% Cars & Peds	100	100	96.4	0	99.5	98.7	100	100	0	99.5	100	99.7	100	0	99.8	100	100	100	0	100	99.6
Trucks & Buses	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Trucks & Buses	0	0	1.2	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Bikes by Direction	0	0	2	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
% Bikes by Direction	0	0	2.4	0	0.3	1.3	0	0	0	0.5	0	0.3	0	0	0.2	0	0	0	0	0	0.3

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AA
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Cars & Peds

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	23	118	12	0	18	15	10	0	8	75	6	0	4	9	9	0	307
04:15 PM	13	95	20	0	14	13	9	0	12	64	5	0	4	10	4	0	263
04:30 PM	12	92	13	0	18	13	9	0	12	61	4	0	4	5	7	0	250
04:45 PM	20	110	18	0	9	30	23	0	11	59	6	0	2	13	1	0	302
Total	68	415	63	0	59	71	51	0	43	259	21	0	14	37	21	0	1122
05:00 PM	20	110	15	0	15	23	14	0	11	85	3	0	1	5	2	0	304
05:15 PM	19	112	21	0	19	14	12	0	10	84	7	0	3	15	6	0	322
05:30 PM	12	113	25	0	18	20	16	0	10	98	5	0	5	13	6	0	341
05:45 PM	19	114	20	0	22	14	7	0	16	99	8	0	3	14	5	0	341
Total	70	449	81	0	74	71	49	0	47	366	23	0	12	47	19	0	1308
Grand Total	138	864	144	0	133	142	100	0	90	625	44	0	26	84	40	0	2430
Apprch %	12	75.4	12.6	0	35.5	37.9	26.7	0	11.9	82.3	5.8	0	17.3	56	26.7	0	
Total %	5.7	35.6	5.9	0	5.5	5.8	4.1	0	3.7	25.7	1.8	0	1.1	3.5	1.6	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**20**	110	15	0	145	15	**23**	14	0	52	11	85	3	0	99	1	5	2	0	8	304
05:15 PM	19	112	21	0	152	19	14	12	0	45	10	84	7	0	101	3	**15**	**6**	0	**24**	322
05:30 PM	12	113	**25**	0	150	18	20	**16**	0	**54**	10	98	5	0	113	**5**	13	6	0	24	**341**
05:45 PM	19	**114**	20	0	**153**	**22**	14	7	0	43	**16**	**99**	**8**	0	**123**	3	14	5	0	22	341
Total Volume	70	449	81	0	600	74	71	49	0	194	47	366	23	0	436	12	47	19	0	78	1308
% App. Total	11.7	74.8	13.5	0		38.1	36.6	25.3	0		10.8	83.9	5.3	0		15.4	60.3	24.4	0		
PHF	.875	.985	.810	.000	.980	.841	.772	.766	.000	.898	.734	.924	.719	.000	.886	.600	.783	.792	.000	.813	.959

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File Name : 04557AA
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Trucks & Buses

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	3	1	0	1	0	0	0	0	1	0	0	0	0	0	0	6
Apprch %	0	75	25	0	100	0	0	0	0	100	0	0	0	0	0	0	
Total %	0	50	16.7	0	16.7	0	0	0	0	16.7	0	0	0	0	0	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	**1**	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	2
Total Volume	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
% App. Total	0	100	0	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.375	.000	.000	.375	.250	.000	.000	.000	.250	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.625

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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AA
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	1	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	5
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Total	1	3	0	0	2	0	0	0	0	2	0	0	0	0	0	0	8
05:00 PM	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	4
Grand Total	1	3	2	0	3	0	0	0	0	3	0	0	0	0	0	0	12
Apprch %	16.7	50	33.3	0	100	0	0	0	0	100	0	0	0	0	0	0	
Total %	8.3	25	16.7	0	25	0	0	0	0	25	0	0	0	0	0	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**1**	1	0	0	**2**	**2**	0	0	0	**2**	0	**1**	0	0	**1**	0	0	0	0	0	**5**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	**2**	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total Volume	1	3	0	0	4	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	8
% App. Total	25	75	0	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.250	.375	.000	.000	.500	.250	.000	.000	.000	.250	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.400

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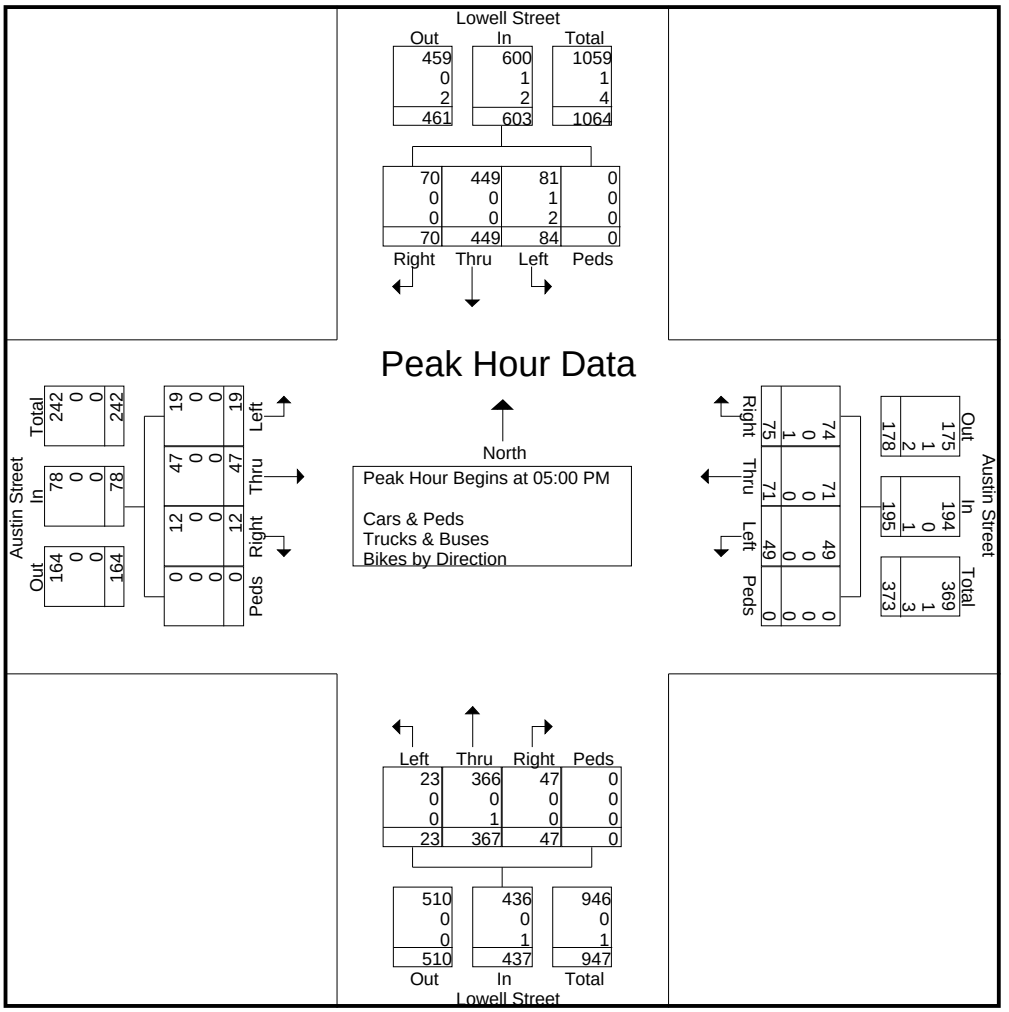
File Name : 04557AA
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**20**	110	17	0	147	16	**23**	14	0	53	11	86	3	0	100	1	5	2	0	8	308
05:15 PM	19	112	21	0	152	19	14	12	0	45	10	84	7	0	101	3	**15**	**6**	0	**24**	322
05:30 PM	12	113	**26**	0	151	18	20	**16**	0	**54**	10	98	5	0	113	**5**	13	6	0	24	**342**
05:45 PM	19	**114**	20	0	**153**	**22**	14	7	0	43	**16**	**99**	**8**	0	**123**	3	14	5	0	22	341
Total Volume	70	449	84	0	603	75	71	49	0	195	47	367	23	0	437	12	47	19	0	78	1313
% App. Total	11.6	74.5	13.9	0		38.5	36.4	25.1	0		10.8	84	5.3	0		15.4	60.3	24.4	0		
PHF	.875	.985	.808	.000	.985	.852	.772	.766	.000	.903	.734	.927	.719	.000	.888	.600	.783	.792	.000	.813	.960
Cars & Peds	70	449	81	0	600	74	71	49	0	194	47	366	23	0	436	12	47	19	0	78	1308
% Cars & Peds	100	100	96.4	0	99.5	98.7	100	100	0	99.5	100	99.7	100	0	99.8	100	100	100	0	100	99.6
Trucks & Buses	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Trucks & Buses	0	0	1.2	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Bikes by Direction	0	0	2	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
% Bikes by Direction	0	0	2.4	0	0.3	1.3	0	0	0	0.5	0	0.3	0	0	0.2	0	0	0	0	0	0.3



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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AAA
Site Code : 20150479
Start Date : 5/2/2015

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	7	61	30	1	21	9	20	6	6	47	1	0	0	6	2	5	222
11:15 AM	8	56	28	0	22	11	10	0	9	54	1	2	2	10	2	0	215
11:30 AM	5	55	28	1	22	10	10	3	9	51	2	0	2	7	6	0	211
11:45 AM	8	60	20	0	26	9	16	8	11	61	2	2	4	11	3	0	241
Total	28	232	106	2	91	39	56	17	35	213	6	4	8	34	13	5	889
12:00 PM	3	78	21	0	26	13	8	0	3	56	3	0	1	7	7	8	234
12:15 PM	13	84	19	1	18	14	16	1	9	49	4	0	2	5	5	1	241
12:30 PM	7	54	12	0	18	11	14	2	11	56	2	0	0	12	4	1	204
12:45 PM	12	80	27	1	26	15	9	3	15	59	3	4	3	7	1	6	271
Total	35	296	79	2	88	53	47	6	38	220	12	4	6	31	17	16	950
01:00 PM	5	73	22	1	19	8	10	2	10	63	5	0	5	6	3	0	232
01:15 PM	9	70	10	0	20	11	8	1	9	66	5	1	4	6	5	1	226
01:30 PM	4	70	13	1	24	13	11	0	9	57	2	1	0	13	11	1	230
01:45 PM	9	48	16	1	17	8	12	0	12	48	0	2	3	10	9	0	195
Total	27	261	61	3	80	40	41	3	40	234	12	4	12	35	28	2	883
Grand Total	90	789	246	7	259	132	144	26	113	667	30	12	26	100	58	23	2722
Apprch %	8	69.7	21.7	0.6	46.2	23.5	25.7	4.6	13.7	81.1	3.6	1.5	12.6	48.3	28	11.1	
Total %	3.3	29	9	0.3	9.5	4.8	5.3	1	4.2	24.5	1.1	0.4	1	3.7	2.1	0.8	
Cars & Peds	87	779	244	7	256	130	144	26	111	660	30	12	26	98	58	23	2691
% Cars & Peds	96.7	98.7	99.2	100	98.8	98.5	100	100	98.2	99	100	100	100	98	100	100	98.9
Trucks & Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	0	0.3	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0.1
Bikes by Direction	3	8	2	0	1	2	0	0	2	7	0	0	0	2	0	0	27
% Bikes by Direction	3.3	1	0.8	0	0.4	1.5	0	0	1.8	1	0	0	0	2	0	0	1

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	**12**	**80**	**27**	**1**	**120**	**26**	**15**	9	**3**	**53**	**15**	59	3	**4**	**81**	3	7	1	**6**	17	**271**
01:00 PM	5	73	22	1	101	19	8	10	2	39	10	63	**5**	0	78	**5**	6	3	0	14	232
01:15 PM	9	70	10	0	89	20	11	8	1	40	9	**66**	5	1	81	4	6	5	1	16	226
01:30 PM	4	70	13	1	88	24	13	**11**	0	48	9	57	2	1	69	0	**13**	**11**	1	**25**	230
Total Volume	30	293	72	3	398	89	47	38	6	180	43	245	15	6	309	12	32	20	8	72	959
% App. Total	7.5	73.6	18.1	0.8		49.4	26.1	21.1	3.3		13.9	79.3	4.9	1.9		16.7	44.4	27.8	11.1		
PHF	.625	.916	.667	.750	.829	.856	.783	.864	.500	.849	.717	.928	.750	.375	.954	.600	.615	.455	.333	.720	.885
Cars & Peds	30	287	70	3	390	88	45	38	6	177	41	242	15	6	304	12	31	20	8	71	942
% Cars & Peds	100	98.0	97.2	100	98.0	98.9	95.7	100	100	98.3	95.3	98.8	100	100	98.4	100	96.9	100	100	98.6	98.2
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	6	2	0	8	1	2	0	0	3	2	3	0	0	5	0	1	0	0	1	17
% Bikes by Direction	0	2.0	2.8	0	2.0	1.1	4.3	0	0	1.7	4.7	1.2	0	0	1.6	0	3.1	0	0	1.4	1.8

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AAA
Site Code : 20150479
Start Date : 5/2/2015

Groups Printed- Cars & Peds

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	7	61	30	1	20	9	20	6	6	46	1	0	0	6	2	5	220
11:15 AM	8	54	28	0	22	11	10	0	9	54	1	2	2	10	2	0	213
11:30 AM	5	55	28	1	21	10	10	3	9	51	2	0	2	7	6	0	210
11:45 AM	8	60	20	0	26	9	16	8	11	61	2	2	4	11	3	0	241
Total	28	230	106	2	89	39	56	17	35	212	6	4	8	34	13	5	884
12:00 PM	3	78	21	0	26	13	8	0	3	53	3	0	1	7	7	8	231
12:15 PM	12	84	19	1	18	14	16	1	9	49	4	0	2	5	5	1	240
12:30 PM	5	54	12	0	18	11	14	2	11	56	2	0	0	12	4	1	202
12:45 PM	12	79	25	1	26	15	9	3	15	59	3	4	3	6	1	6	267
Total	32	295	77	2	88	53	47	6	38	217	12	4	6	30	17	16	940
01:00 PM	5	73	22	1	18	6	10	2	8	62	5	0	5	6	3	0	226
01:15 PM	9	67	10	0	20	11	8	1	9	64	5	1	4	6	5	1	221
01:30 PM	4	68	13	1	24	13	11	0	9	57	2	1	0	13	11	1	228
01:45 PM	9	46	16	1	17	8	12	0	12	48	0	2	3	9	9	0	192
Total	27	254	61	3	79	38	41	3	38	231	12	4	12	34	28	2	867
Grand Total	87	779	244	7	256	130	144	26	111	660	30	12	26	98	58	23	2691
Apprch %	7.8	69.7	21.8	0.6	46	23.4	25.9	4.7	13.7	81.2	3.7	1.5	12.7	47.8	28.3	11.2	
Total %	3.2	28.9	9.1	0.3	9.5	4.8	5.4	1	4.1	24.5	1.1	0.4	1	3.6	2.2	0.9	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	**12**	**79**	**25**	**1**	**117**	**26**	**15**	9	**3**	**53**	**15**	59	3	**4**	**81**	3	6	1	**6**	16	**267**
01:00 PM	5	73	22	1	101	18	6	10	2	36	8	62	**5**	0	75	**5**	6	3	0	14	226
01:15 PM	9	67	10	0	86	20	11	8	1	40	9	**64**	5	1	79	4	6	5	1	16	221
01:30 PM	4	68	13	1	86	24	13	**11**	0	48	9	57	2	1	69	0	**13**	**11**	1	**25**	228
Total Volume	30	287	70	3	390	88	45	38	6	177	41	242	15	6	304	12	31	20	8	71	942
% App. Total	7.7	73.6	17.9	0.8		49.7	25.4	21.5	3.4		13.5	79.6	4.9	2		16.9	43.7	28.2	11.3		
PHF	.625	.908	.700	.750	.833	.846	.750	.864	.500	.835	.683	.945	.750	.375	.938	.600	.596	.455	.333	.710	.882

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AAA
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

Groups Printed- Trucks & Buses

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
Apprch %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	50	0	0	50	0	0	0	0	0	0	0	0	0	0	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	**1**	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0	0		100	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AAA
Site Code : 20150479
Start Date : 5/2/2015

Groups Printed- Bikes by Direction

	Lowell Street From North				Austin Street From East				Lowell Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
11:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
12:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	4
Total	3	1	2	0	0	0	0	0	0	3	0	0	0	1	0	0	10
01:00 PM	0	0	0	0	1	2	0	0	2	1	0	0	0	0	0	0	6
01:15 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
01:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	5	0	0	1	2	0	0	2	3	0	0	0	1	0	0	14
Grand Total	3	8	2	0	1	2	0	0	2	7	0	0	0	2	0	0	27
Apprch %	23.1	61.5	15.4	0	33.3	66.7	0	0	22.2	77.8	0	0	0	100	0	0	
Total %	11.1	29.6	7.4	0	3.7	7.4	0	0	7.4	25.9	0	0	0	7.4	0	0	

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	**2**	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	1	**2**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	4
01:00 PM	0	0	0	0	0	**1**	**2**	0	0	**3**	**2**	1	0	0	**3**	0	0	0	0	0	**6**
01:15 PM	0	**3**	0	0	3	0	0	0	0	0	0	**2**	0	0	2	0	0	0	0	0	5
Total Volume	2	4	2	0	8	1	2	0	0	3	2	3	0	0	5	0	1	0	0	1	17
% App. Total	25	50	25	0		33.3	66.7	0	0		40	60	0	0		0	100	0	0		
PHF	.250	.333	.250	.000	.667	.250	.250	.000	.000	.250	.250	.375	.000	.000	.417	.000	.250	.000	.000	.250	.708

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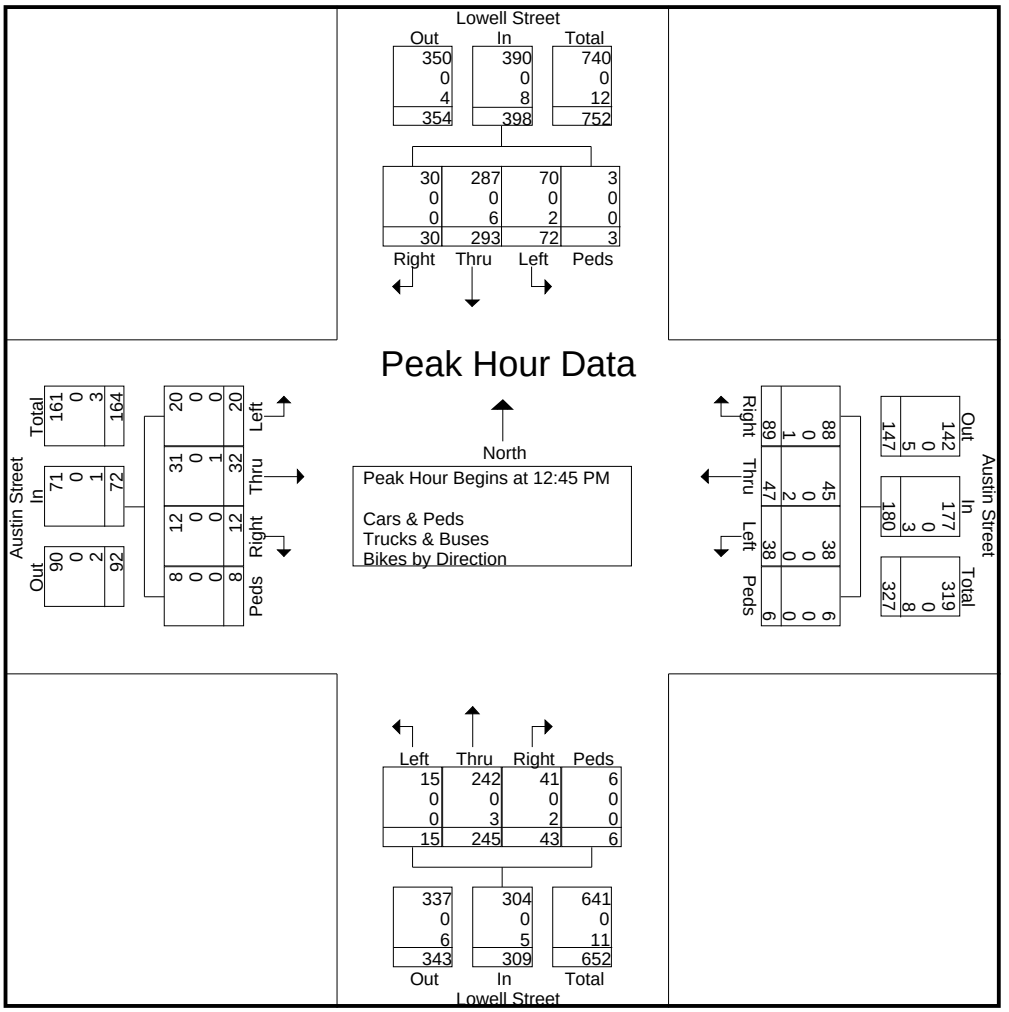
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557AAA
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

	Lowell Street From North					Austin Street From East					Lowell Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	**12**	**80**	**27**	**1**	**120**	**26**	**15**	9	**3**	**53**	**15**	59	3	**4**	**81**	3	7	1	**6**	17	**271**
01:00 PM	5	73	22	1	101	19	8	10	2	39	10	63	**5**	0	78	**5**	6	3	0	14	232
01:15 PM	9	70	10	0	89	20	11	8	1	40	9	**66**	5	1	81	4	6	5	1	16	226
01:30 PM	4	70	13	1	88	24	13	**11**	0	48	9	57	2	1	69	0	**13**	**11**	1	**25**	230
Total Volume	30	293	72	3	398	89	47	38	6	180	43	245	15	6	309	12	32	20	8	72	959
% App. Total	7.5	73.6	18.1	0.8		49.4	26.1	21.1	3.3		13.9	79.3	4.9	1.9		16.7	44.4	27.8	11.1		
PHF	.625	.916	.667	.750	.829	.856	.783	.864	.500	.849	.717	.928	.750	.375	.954	.600	.615	.455	.333	.720	.885
Cars & Peds	30	287	70	3	390	88	45	38	6	177	41	242	15	6	304	12	31	20	8	71	942
% Cars & Peds	100	98.0	97.2	100	98.0	98.9	95.7	100	100	98.3	95.3	98.8	100	100	98.4	100	96.9	100	100	98.6	98.2
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	6	2	0	8	1	2	0	0	3	2	3	0	0	5	0	1	0	0	1	17
% Bikes by Direction	0	2.0	2.8	0	2.0	1.1	4.3	0	0	1.7	4.7	1.2	0	0	1.6	0	3.1	0	0	1.4	1.8



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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557B
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	15	103	3	4	7	3	2	15	11	108	8	6	5	7	16	4	317
07:15 AM	14	136	8	4	11	6	1	24	9	130	7	12	13	8	18	11	412
07:30 AM	18	133	13	8	12	6	3	33	12	140	13	2	11	13	17	42	476
07:45 AM	27	95	14	13	9	10	2	29	19	137	14	8	12	11	16	16	432
Total	74	467	38	29	39	25	8	101	51	515	42	28	41	39	67	73	1637
08:00 AM	21	122	19	1	10	7	1	15	13	127	15	14	7	22	18	6	418
08:15 AM	15	124	27	12	15	10	2	19	13	136	10	11	9	17	15	10	445
08:30 AM	28	117	17	5	9	10	5	20	12	149	16	12	6	13	23	5	447
08:45 AM	15	140	16	4	11	8	3	20	13	154	13	17	10	13	17	6	460
Total	79	503	79	22	45	35	11	74	51	566	54	54	32	65	73	27	1770
Grand Total	153	970	117	51	84	60	19	175	102	1081	96	82	73	104	140	100	3407
Apprch %	11.9	75.1	9.1	4	24.9	17.8	5.6	51.8	7.5	79.4	7.1	6	17.5	24.9	33.6	24	
Total %	4.5	28.5	3.4	1.5	2.5	1.8	0.6	5.1	3	31.7	2.8	2.4	2.1	3.1	4.1	2.9	
Cars & Peds	144	931	117	51	82	59	19	175	99	1035	94	82	72	104	139	100	3303
% Cars & Peds	94.1	96	100	100	97.6	98.3	100	100	97.1	95.7	97.9	100	98.6	100	99.3	100	96.9
Trucks & Buses	7	29	0	0	0	0	0	0	2	33	2	0	0	0	1	0	74
% Trucks & Buses	4.6	3	0	0	0	0	0	0	2	3.1	2.1	0	0	0	0.7	0	2.2
Bikes by Direction	2	10	0	0	2	1	0	0	1	13	0	0	1	0	0	0	30
% Bikes by Direction	1.3	1	0	0	2.4	1.7	0	0	1	1.2	0	0	1.4	0	0	0	0.9

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	18	**133**	13	8	172	12	6	**3**	**33**	**54**	12	**140**	13	2	167	11	13	17	**42**	**83**	**476**
07:45 AM	**27**	95	14	**13**	149	9	**10**	2	29	50	**19**	137	14	8	**178**	**12**	11	16	16	55	432
08:00 AM	21	122	19	1	163	10	7	1	15	33	13	127	**15**	**14**	169	7	**22**	**18**	6	53	418
08:15 AM	15	124	**27**	12	**178**	**15**	10	2	19	46	13	136	10	11	170	9	17	15	10	51	445
Total Volume	81	474	73	34	662	46	33	8	96	183	57	540	52	35	684	39	63	66	74	242	1771
% App. Total	12.2	71.6	11	5.1		25.1	18	4.4	52.5		8.3	78.9	7.6	5.1		16.1	26	27.3	30.6		
PHF	.750	.891	.676	.654	.930	.767	.825	.667	.727	.847	.750	.964	.867	.625	.961	.813	.716	.917	.440	.729	.930
Cars & Peds	75	455	73	34	637	44	32	8	96	180	56	525	50	35	666	38	63	66	74	241	1724
% Cars & Peds	92.6	96.0	100	100	96.2	95.7	97.0	100	100	98.4	98.2	97.2	96.2	100	97.4	97.4	100	100	100	99.6	97.3
Trucks & Buses	4	12	0	0	16	0	0	0	0	0	1	12	2	0	15	0	0	0	0	0	31
% Trucks & Buses	4.9	2.5	0	0	2.4	0	0	0	0	0	1.8	2.2	3.8	0	2.2	0	0	0	0	0	1.8
Bikes by Direction	2	7	0	0	9	2	1	0	0	3	0	3	0	0	3	1	0	0	0	1	16
% Bikes by Direction	2.5	1.5	0	0	1.4	4.3	3.0	0	0	1.6	0	0.6	0	0	0.4	2.6	0	0	0	0.4	0.9

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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557B
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Cars & Peds

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	15	100	3	4	7	3	2	15	11	101	8	6	5	7	16	4	307
07:15 AM	13	128	8	4	11	6	1	24	7	120	7	12	13	8	18	11	391
07:30 AM	16	128	13	8	10	6	3	33	12	136	13	2	11	13	17	42	463
07:45 AM	25	87	14	13	9	10	2	29	18	134	13	8	11	11	16	16	416
Total	69	443	38	29	37	25	8	101	48	491	41	28	40	39	67	73	1577
08:00 AM	19	117	19	1	10	7	1	15	13	125	14	14	7	22	18	6	408
08:15 AM	15	123	27	12	15	9	2	19	13	130	10	11	9	17	15	10	437
08:30 AM	26	112	17	5	9	10	5	20	12	139	16	12	6	13	22	5	429
08:45 AM	15	136	16	4	11	8	3	20	13	150	13	17	10	13	17	6	452
Total	75	488	79	22	45	34	11	74	51	544	53	54	32	65	72	27	1726
Grand Total	144	931	117	51	82	59	19	175	99	1035	94	82	72	104	139	100	3303
Apprch %	11.6	74.9	9.4	4.1	24.5	17.6	5.7	52.2	7.6	79	7.2	6.3	17.3	25.1	33.5	24.1	
Total %	4.4	28.2	3.5	1.5	2.5	1.8	0.6	5.3	3	31.3	2.8	2.5	2.2	3.1	4.2	3	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	19	117	19	1	156	10	7	1	15	33	**13**	125	14	14	166	7	**22**	18	6	**53**	408
08:15 AM	15	123	**27**	**12**	**177**	**15**	9	2	19	**45**	13	130	10	11	164	9	17	15	**10**	51	437
08:30 AM	**26**	112	17	5	160	9	**10**	**5**	**20**	44	12	139	**16**	12	179	6	13	**22**	5	46	429
08:45 AM	15	**136**	16	4	171	11	8	3	20	42	13	**150**	13	**17**	**193**	**10**	13	17	6	46	**452**
Total Volume	75	488	79	22	664	45	34	11	74	164	51	544	53	54	702	32	65	72	27	196	1726
% App. Total	11.3	73.5	11.9	3.3		27.4	20.7	6.7	45.1		7.3	77.5	7.5	7.7		16.3	33.2	36.7	13.8		
PHF	.721	.897	.731	.458	.938	.750	.850	.550	.925	.911	.981	.907	.828	.794	.909	.800	.739	.818	.675	.925	.955

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557B
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Trucks & Buses

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
07:15 AM	1	8	0	0	0	0	0	0	1	8	0	0	0	0	0	0	18
07:30 AM	1	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	6
07:45 AM	1	5	0	0	0	0	0	0	1	3	1	0	0	0	0	0	11
Total	3	18	0	0	0	0	0	0	2	18	1	0	0	0	0	0	42
08:00 AM	2	3	0	0	0	0	0	0	0	2	1	0	0	0	0	0	8
08:15 AM	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	0	6
08:30 AM	2	4	0	0	0	0	0	0	0	7	0	0	0	0	1	0	14
08:45 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
Total	4	11	0	0	0	0	0	0	0	15	1	0	0	0	1	0	32
Grand Total	7	29	0	0	0	0	0	0	2	33	2	0	0	0	1	0	74
Apprch %	19.4	80.6	0	0	0	0	0	0	5.4	89.2	5.4	0	0	0	100	0	
Total %	9.5	39.2	0	0	0	0	0	0	2.7	44.6	2.7	0	0	0	1.4	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 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	**8**	0	0	**9**	0	0	0	0	0	**1**	**8**	0	0	**9**	0	0	0	0	0	**18**
07:30 AM	1	3	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
07:45 AM	1	5	0	0	6	0	0	0	0	0	1	3	**1**	0	5	0	0	0	0	0	11
08:00 AM	**2**	3	0	0	5	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	8
Total Volume	5	19	0	0	24	0	0	0	0	0	2	15	2	0	19	0	0	0	0	0	43
% App. Total	20.8	79.2	0	0		0	0	0	0		10.5	78.9	10.5	0		0	0	0	0		
PHF	.625	.594	.000	.000	.667	.000	.000	.000	.000	.000	.500	.469	.500	.000	.528	.000	.000	.000	.000	.000	.597

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557B
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
07:30 AM	1	2	0	0	2	0	0	0	0	2	0	0	0	0	0	0	7
07:45 AM	1	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5
Total	2	6	0	0	2	0	0	0	1	6	0	0	1	0	0	0	18
08:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
08:30 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
08:45 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
Total	0	4	0	0	0	1	0	0	0	7	0	0	0	0	0	0	12
Grand Total	2	10	0	0	2	1	0	0	1	13	0	0	1	0	0	0	30
Apprch %	16.7	83.3	0	0	66.7	33.3	0	0	7.1	92.9	0	0	100	0	0	0	
Total %	6.7	33.3	0	0	6.7	3.3	0	0	3.3	43.3	0	0	3.3	0	0	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 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	0	0	0	0	0	**2**	0	0	2	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	**1**	2	0	0	**3**	0	0	0	0	0	3
07:30 AM	**1**	2	0	0	3	**2**	0	0	0	**2**	0	2	0	0	2	0	0	0	0	0	**7**
07:45 AM	1	**3**	0	0	**4**	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	**1**	5
Total Volume	2	6	0	0	8	2	0	0	0	2	1	6	0	0	7	1	0	0	0	1	18
% App. Total	25	75	0	0		100	0	0	0		14.3	85.7	0	0		100	0	0	0		
PHF	.500	.500	.000	.000	.500	.250	.000	.000	.000	.250	.250	.750	.000	.000	.583	.250	.000	.000	.000	.250	.643

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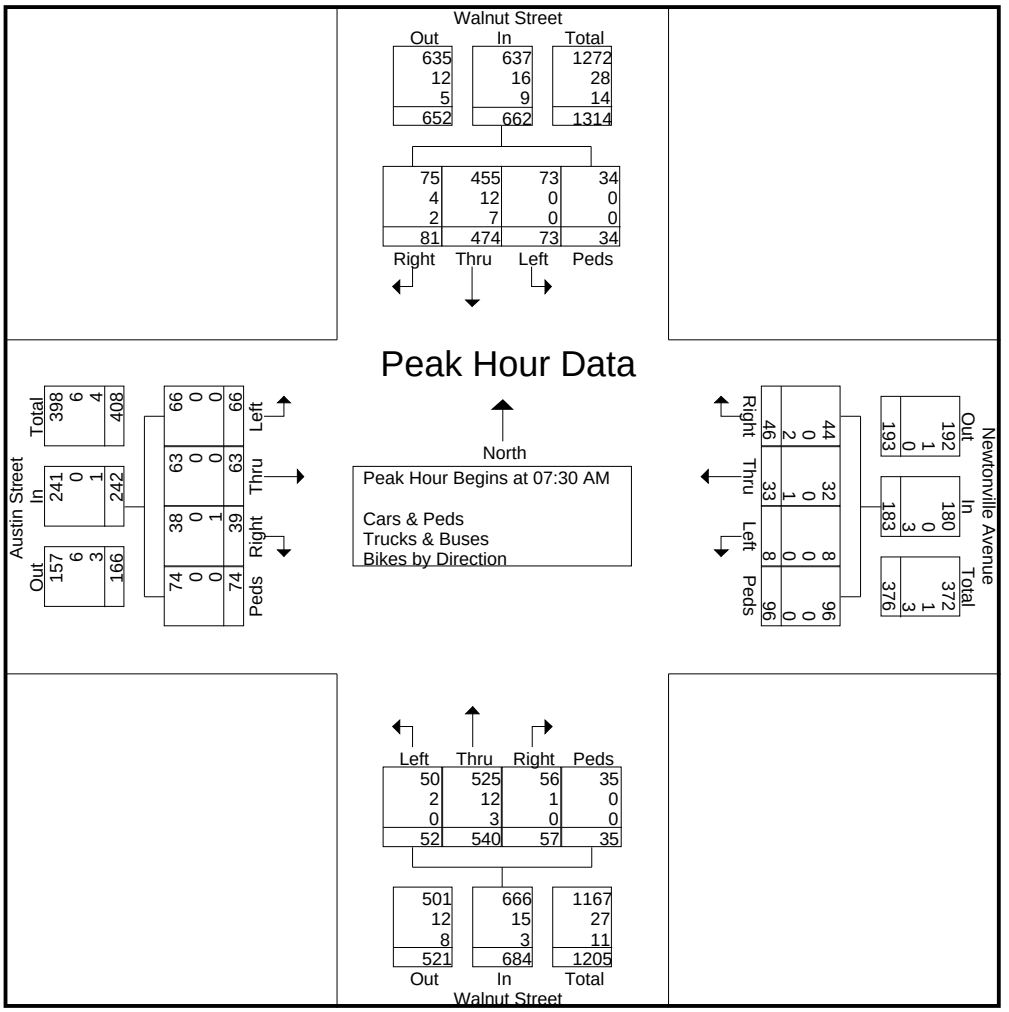
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557B
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	18	**133**	13	8	172	12	6	**3**	**33**	**54**	12	**140**	13	2	167	11	13	17	**42**	**83**	**476**
07:45 AM	**27**	95	14	**13**	149	9	**10**	2	29	50	**19**	137	14	8	**178**	**12**	11	16	16	55	432
08:00 AM	21	122	19	1	163	10	7	1	15	33	13	127	**15**	**14**	169	7	**22**	**18**	6	53	418
08:15 AM	15	124	**27**	12	**178**	**15**	10	2	19	46	13	136	10	11	170	9	17	15	10	51	445
Total Volume	81	474	73	34	662	46	33	8	96	183	57	540	52	35	684	39	63	66	74	242	1771
% App. Total	12.2	71.6	11	5.1		25.1	18	4.4	52.5		8.3	78.9	7.6	5.1		16.1	26	27.3	30.6		
PHF	.750	.891	.676	.654	.930	.767	.825	.667	.727	.847	.750	.964	.867	.625	.961	.813	.716	.917	.440	.729	.930
Cars & Peds	75	455	73	34	637	44	32	8	96	180	56	525	50	35	666	38	63	66	74	241	1724
% Cars & Peds	92.6	96.0	100	100	96.2	95.7	97.0	100	100	98.4	98.2	97.2	96.2	100	97.4	97.4	100	100	100	99.6	97.3
Trucks & Buses	4	12	0	0	16	0	0	0	0	0	1	12	2	0	15	0	0	0	0	0	31
% Trucks & Buses	4.9	2.5	0	0	2.4	0	0	0	0	0	1.8	2.2	3.8	0	2.2	0	0	0	0	0	1.8
Bikes by Direction	2	7	0	0	9	2	1	0	0	3	0	3	0	0	3	1	0	0	0	1	16
% Bikes by Direction	2.5	1.5	0	0	1.4	4.3	3.0	0	0	1.6	0	0.6	0	0	0.4	2.6	0	0	0	0.4	0.9



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N/S: Walnut Street
E/W: Newtonville Avenue/Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BB
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	16	122	14	19	11	11	8	27	13	124	18	19	17	10	10	23	462
04:15 PM	21	133	8	5	14	11	11	17	8	150	13	30	13	9	11	15	469
04:30 PM	25	109	11	9	11	12	7	16	7	130	10	24	17	9	7	19	423
04:45 PM	25	129	7	16	7	16	6	26	11	123	25	35	21	6	13	27	493
Total	87	493	40	49	43	50	32	86	39	527	66	108	68	34	41	84	1847
05:00 PM	25	151	7	8	6	6	2	8	8	141	17	15	19	8	21	15	457
05:15 PM	24	134	13	9	10	14	7	9	11	146	10	11	16	9	17	12	452
05:30 PM	30	143	15	18	13	17	4	34	11	143	19	25	23	7	21	10	533
05:45 PM	22	137	18	9	9	15	6	10	12	133	17	32	25	11	22	5	483
Total	101	565	53	44	38	52	19	61	42	563	63	83	83	35	81	42	1925
Grand Total	188	1058	93	93	81	102	51	147	81	1090	129	191	151	69	122	126	3772
Apprch %	13.1	73.9	6.5	6.5	21.3	26.8	13.4	38.6	5.4	73.1	8.7	12.8	32.3	14.7	26.1	26.9	
Total %	5	28	2.5	2.5	2.1	2.7	1.4	3.9	2.1	28.9	3.4	5.1	4	1.8	3.2	3.3	
Cars & Peds	186	1036	93	93	81	101	50	147	80	1058	128	191	149	68	120	126	3707
% Cars & Peds	98.9	97.9	100	100	100	99	98	100	98.8	97.1	99.2	100	98.7	98.6	98.4	100	98.3
Trucks & Buses	0	9	0	0	0	0	0	0	1	22	1	0	2	0	1	0	36
% Trucks & Buses	0	0.9	0	0	0	0	0	0	1.2	2	0.8	0	1.3	0	0.8	0	1
Bikes by Direction	2	13	0	0	0	1	1	0	0	10	0	0	0	1	1	0	29
% Bikes by Direction	1.1	1.2	0	0	0	1	2	0	0	0.9	0	0	0	1.4	0.8	0	0.8

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	129	7	16	177	7	16	6	26	55	**11**	123	**25**	**35**	194	21	6	13	**27**	**67**	493
05:00 PM	25	**151**	7	8	191	6	6	2	8	22	8	141	17	15	181	19	8	**21**	15	63	457
05:15 PM	24	134	13	9	180	10	14	**7**	9	40	11	**146**	10	11	178	16	**9**	17	12	54	452
05:30 PM	**30**	143	**15**	**18**	**206**	**13**	**17**	4	**34**	**68**	11	143	19	25	**198**	**23**	7	21	10	61	**533**
Total Volume	104	557	42	51	754	36	53	19	77	185	41	553	71	86	751	79	30	72	64	245	1935
% App. Total	13.8	73.9	5.6	6.8		19.5	28.6	10.3	41.6		5.5	73.6	9.5	11.5		32.2	12.2	29.4	26.1		
PHF	.867	.922	.700	.708	.915	.692	.779	.679	.566	.680	.932	.947	.710	.614	.948	.859	.833	.857	.593	.914	.908
Cars & Peds	104	545	42	51	742	36	53	19	77	185	40	538	71	86	735	78	30	71	64	243	1905
% Cars & Peds	100	97.8	100	100	98.4	100	100	100	100	100	97.6	97.3	100	100	97.9	98.7	100	98.6	100	99.2	98.4
Trucks & Buses	0	4	0	0	4	0	0	0	0	0	1	9	0	0	10	1	0	1	0	2	16
% Trucks & Buses	0	0.7	0	0	0.5	0	0	0	0	0	2.4	1.6	0	0	1.3	1.3	0	1.4	0	0.8	0.8
Bikes by Direction	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
% Bikes by Direction	0	1.4	0	0	1.1	0	0	0	0	0	0	1.1	0	0	0.8	0	0	0	0	0	0.7

Transportation Data Corporation

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N/S: Walnut Street
E/W: Newtonville Avenue/Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BB
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Cars & Peds

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	16	121	14	19	11	11	8	27	13	120	18	19	16	10	10	23	456
04:15 PM	20	131	8	5	14	11	10	17	8	145	12	30	13	9	11	15	459
04:30 PM	25	105	11	9	11	11	7	16	7	124	10	24	17	8	7	19	411
04:45 PM	25	126	7	16	7	16	6	26	10	122	25	35	21	6	13	27	488
Total	86	483	40	49	43	49	31	86	38	511	65	108	67	33	41	84	1814
05:00 PM	25	151	7	8	6	6	2	8	8	137	17	15	19	8	21	15	453
05:15 PM	24	132	13	9	10	14	7	9	11	143	10	11	16	9	16	12	446
05:30 PM	30	136	15	18	13	17	4	34	11	136	19	25	22	7	21	10	518
05:45 PM	21	134	18	9	9	15	6	10	12	131	17	32	25	11	21	5	476
Total	100	553	53	44	38	52	19	61	42	547	63	83	82	35	79	42	1893
Grand Total	186	1036	93	93	81	101	50	147	80	1058	128	191	149	68	120	126	3707
Apprch %	13.2	73.6	6.6	6.6	21.4	26.6	13.2	38.8	5.5	72.6	8.8	13.1	32.2	14.7	25.9	27.2	
Total %	5	27.9	2.5	2.5	2.2	2.7	1.3	4	2.2	28.5	3.5	5.2	4	1.8	3.2	3.4	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	126	7	16	174	7	16	6	26	55	10	122	**25**	**35**	**192**	21	6	13	**27**	**67**	488
05:00 PM	25	**151**	7	8	191	6	6	2	8	22	8	137	17	15	177	19	8	**21**	15	63	453
05:15 PM	24	132	13	9	178	10	14	**7**	9	40	**11**	**143**	10	11	175	16	**9**	16	12	53	446
05:30 PM	**30**	136	**15**	**18**	**199**	**13**	**17**	4	**34**	**68**	11	136	19	25	191	**22**	7	21	10	60	**518**
Total Volume	104	545	42	51	742	36	53	19	77	185	40	538	71	86	735	78	30	71	64	243	1905
% App. Total	14	73.5	5.7	6.9		19.5	28.6	10.3	41.6		5.4	73.2	9.7	11.7		32.1	12.3	29.2	26.3		
PHF	.867	.902	.700	.708	.932	.692	.779	.679	.566	.680	.909	.941	.710	.614	.957	.886	.833	.845	.593	.907	.919

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Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BB
Site Code : 20150479
Start Date : 4/16/2015
Page No : 1

Groups Printed- Trucks & Buses

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	4
04:15 PM	0	2	0	0	0	0	0	0	0	3	1	0	0	0	0	0	6
04:30 PM	0	2	0	0	0	0	0	0	0	6	0	0	0	0	0	0	8
04:45 PM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
Total	0	5	0	0	0	0	0	0	1	13	1	0	1	0	0	0	21
05:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
05:15 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	4
05:30 PM	0	2	0	0	0	0	0	0	0	3	0	0	1	0	0	0	6
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	4	0	0	0	0	0	0	0	9	0	0	1	0	1	0	15
Grand Total	0	9	0	0	0	0	0	0	1	22	1	0	2	0	1	0	36
Apprch %	0	100	0	0	0	0	0	0	4.2	91.7	4.2	0	66.7	0	33.3	0	
Total %	0	25	0	0	0	0	0	0	2.8	61.1	2.8	0	5.6	0	2.8	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	**1**	0	0	0	**1**	4
04:15 PM	0	**2**	0	0	**2**	0	0	0	0	0	0	3	**1**	0	4	0	0	0	0	0	6
04:30 PM	0	2	0	0	2	0	0	0	0	0	0	**6**	0	0	**6**	0	0	0	0	0	**8**
04:45 PM	0	1	0	0	1	0	0	0	0	0	**1**	1	0	0	2	0	0	0	0	0	3
Total Volume	0	5	0	0	5	0	0	0	0	0	1	13	1	0	15	1	0	0	0	1	21
% App. Total	0	100	0	0		0	0	0	0		6.7	86.7	6.7	0		100	0	0	0		
PHF	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.250	.542	.250	.000	.625	.250	.000	.000	.000	.250	.656

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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BB
Site Code : 20150479
Start Date : 4/16/2015

Groups Printed- Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
04:15 PM	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	4
04:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	5	0	0	0	1	1	0	0	3	0	0	0	1	0	0	12
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
05:30 PM	0	5	0	0	0	0	0	0	0	4	0	0	0	0	0	0	9
05:45 PM	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
Total	1	8	0	0	0	0	0	0	0	7	0	0	0	0	1	0	17
Grand Total	2	13	0	0	0	1	1	0	0	10	0	0	0	1	1	0	29
Apprch %	13.3	86.7	0	0	0	50	50	0	0	100	0	0	0	50	50	0	
Total %	6.9	44.8	0	0	0	3.4	3.4	0	0	34.5	0	0	0	3.4	3.4	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:30 PM	0	**5**	0	0	**5**	0	0	0	0	0	0	**4**	0	0	**4**	0	0	0	0	0	**9**
05:45 PM	**1**	2	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	**1**	0	**1**	5
Total Volume	1	8	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	1	0	1	17
% App. Total	11.1	88.9	0	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.250	.400	.000	.000	.450	.000	.000	.000	.000	.000	.000	.438	.000	.000	.438	.000	.000	.250	.000	.250	.472

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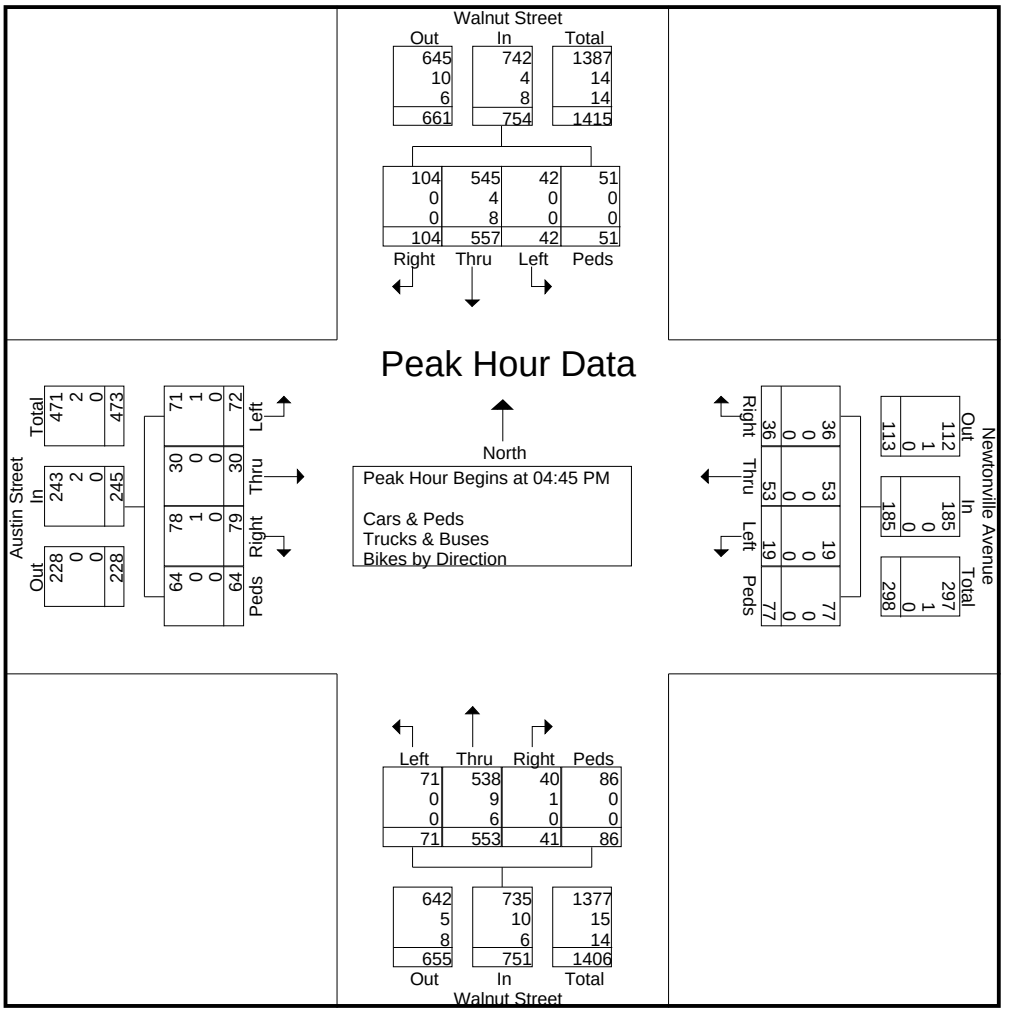
File Name : 04557BB
Site Code : 20150479
Start Date : 4/16/2015

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	129	7	16	177	7	16	6	26	55	**11**	123	**25**	**35**	194	21	6	13	**27**	**67**	493
05:00 PM	25	**151**	7	8	191	6	6	2	8	22	8	141	17	15	181	19	8	**21**	15	63	457
05:15 PM	24	134	13	9	180	10	14	**7**	9	40	11	**146**	10	11	178	16	**9**	17	12	54	452
05:30 PM	**30**	143	**15**	**18**	**206**	**13**	**17**	4	**34**	**68**	11	143	19	25	**198**	**23**	7	21	10	61	**533**
Total Volume	104	557	42	51	754	36	53	19	77	185	41	553	71	86	751	79	30	72	64	245	1935
% App. Total	13.8	73.9	5.6	6.8		19.5	28.6	10.3	41.6		5.5	73.6	9.5	11.5		32.2	12.2	29.4	26.1		
PHF	.867	.922	.700	.708	.915	.692	.779	.679	.566	.680	.932	.947	.710	.614	.948	.859	.833	.857	.593	.914	.908
Cars & Peds	104	545	42	51	742	36	53	19	77	185	40	538	71	86	735	78	30	71	64	243	1905
% Cars & Peds	100	97.8	100	100	98.4	100	100	100	100	100	97.6	97.3	100	100	97.9	98.7	100	98.6	100	99.2	98.4
Trucks & Buses	0	4	0	0	4	0	0	0	0	0	1	9	0	0	10	1	0	1	0	2	16
% Trucks & Buses	0	0.7	0	0	0.5	0	0	0	0	0	2.4	1.6	0	0	1.3	1.3	0	1.4	0	0.8	0.8
Bikes by Direction	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
% Bikes by Direction	0	1.4	0	0	1.1	0	0	0	0	0	0	1.1	0	0	0.8	0	0	0	0	0	0.7



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N/S: Walnut Street
E/W: Newtonville Avenue/Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BBB
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	30	112	6	13	7	5	8	11	8	107	19	26	11	7	9	20	399
11:15 AM	35	121	7	19	10	7	3	9	9	111	22	31	11	9	11	21	436
11:30 AM	33	129	12	10	10	9	4	10	13	122	22	37	15	7	13	26	472
11:45 AM	28	113	10	16	12	9	8	14	11	125	24	36	18	12	18	28	482
Total	126	475	35	58	39	30	23	44	41	465	87	130	55	35	51	95	1789
12:00 PM	27	113	16	20	9	10	7	12	10	120	20	49	14	12	21	22	482
12:15 PM	37	109	8	11	14	9	8	11	9	112	18	24	16	14	23	18	441
12:30 PM	25	119	6	20	11	9	3	16	6	114	14	22	12	9	12	20	418
12:45 PM	29	126	6	18	7	10	7	20	13	128	16	31	12	10	19	32	484
Total	118	467	36	69	41	38	25	59	38	474	68	126	54	45	75	92	1825
01:00 PM	27	129	11	13	8	8	7	14	13	119	20	21	15	13	13	18	449
01:15 PM	27	113	7	11	5	8	6	12	9	114	16	17	12	8	14	12	391
01:30 PM	23	110	8	10	5	7	2	9	9	105	16	19	12	10	10	15	370
01:45 PM	22	111	5	8	5	6	3	9	10	103	13	16	10	7	11	13	352
Total	99	463	31	42	23	29	18	44	41	441	65	73	49	38	48	58	1562
Grand Total	343	1405	102	169	103	97	66	147	120	1380	220	329	158	118	174	245	5176
Apprch %	17	69.6	5.1	8.4	24.9	23.5	16	35.6	5.9	67.3	10.7	16.1	22.7	17	25	35.3	
Total %	6.6	27.1	2	3.3	2	1.9	1.3	2.8	2.3	26.7	4.3	6.4	3.1	2.3	3.4	4.7	
Cars & Peds	342	1384	101	169	100	96	63	147	119	1347	220	329	154	118	172	245	5106
% Cars & Peds	99.7	98.5	99	100	97.1	99	95.5	100	99.2	97.6	100	100	97.5	100	98.9	100	98.6
Trucks & Buses	1	7	0	0	2	0	1	0	0	14	0	0	1	0	0	0	26
% Trucks & Buses	0.3	0.5	0	0	1.9	0	1.5	0	0	1	0	0	0.6	0	0	0	0.5
Bikes by Direction	0	14	1	0	1	1	2	0	1	19	0	0	3	0	2	0	44
% Bikes by Direction	0	1	1	0	1	1	3	0	0.8	1.4	0	0	1.9	0	1.1	0	0.9

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	33	**129**	12	10	**184**	10	9	4	10	33	**13**	122	22	37	194	15	7	13	26	61	472
11:45 AM	28	113	10	16	167	12	9	**8**	**14**	**43**	11	**125**	**24**	36	196	**18**	12	18	**28**	**76**	**482**
12:00 PM	27	113	**16**	**20**	176	9	**10**	7	12	38	10	120	20	**49**	**199**	14	12	21	22	69	482
12:15 PM	**37**	109	8	11	165	**14**	9	8	11	42	9	112	18	24	163	16	**14**	**23**	18	71	441
Total Volume	125	464	46	57	692	45	37	27	47	156	43	479	84	146	752	63	45	75	94	277	1877
% App. Total	18.1	67.1	6.6	8.2		28.8	23.7	17.3	30.1		5.7	63.7	11.2	19.4		22.7	16.2	27.1	33.9		
PHF	.845	.899	.719	.713	.940	.804	.925	.844	.839	.907	.827	.958	.875	.745	.945	.875	.804	.815	.839	.911	.974
Cars & Peds	124	456	45	57	682	44	36	27	47	154	43	464	84	146	737	61	45	75	94	275	1848
% Cars & Peds	99.2	98.3	97.8	100	98.6	97.8	97.3	100	100	98.7	100	96.9	100	100	98.0	96.8	100	100	100	99.3	98.5
Trucks & Buses	1	2	0	0	3	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	10
% Trucks & Buses	0.8	0.4	0	0	0.4	0	0	0	0	0	0	1.3	0	0	0.8	1.6	0	0	0	0.4	0.5
Bikes by Direction	0	6	1	0	7	1	1	0	0	2	0	9	0	0	9	1	0	0	0	1	19
% Bikes by Direction	0	1.3	2.2	0	1.0	2.2	2.7	0	0	1.3	0	1.9	0	0	1.2	1.6	0	0	0	0.4	1.0

Transportation Data Corporation

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N/S: Walnut Street
E/W: Newtonville Avenue/Austin Street
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BBB
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

Groups Printed- Cars & Peds

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	30	110	6	13	6	5	6	11	8	103	19	26	11	7	9	20	390
11:15 AM	35	121	7	19	9	7	3	9	9	109	22	31	11	9	10	21	432
11:30 AM	32	126	12	10	10	8	4	10	13	116	22	37	14	7	13	26	460
11:45 AM	28	112	10	16	12	9	8	14	11	120	24	36	17	12	18	28	475
Total	125	469	35	58	37	29	21	44	41	448	87	130	53	35	50	95	1757
12:00 PM	27	110	15	20	9	10	7	12	10	117	20	49	14	12	21	22	475
12:15 PM	37	108	8	11	13	9	8	11	9	111	18	24	16	14	23	18	438
12:30 PM	25	116	6	20	11	9	3	16	6	113	14	22	12	9	12	20	414
12:45 PM	29	125	6	18	7	10	7	20	12	126	16	31	12	10	18	32	479
Total	118	459	35	69	40	38	25	59	37	467	68	126	54	45	74	92	1806
01:00 PM	27	129	11	13	8	8	7	14	13	118	20	21	13	13	13	18	446
01:15 PM	27	107	7	11	5	8	5	12	9	110	16	17	12	8	14	12	380
01:30 PM	23	109	8	10	5	7	2	9	9	105	16	19	12	10	10	15	369
01:45 PM	22	111	5	8	5	6	3	9	10	99	13	16	10	7	11	13	348
Total	99	456	31	42	23	29	17	44	41	432	65	73	47	38	48	58	1543
Grand Total	342	1384	101	169	100	96	63	147	119	1347	220	329	154	118	172	245	5106
Apprch %	17.1	69.3	5.1	8.5	24.6	23.6	15.5	36.2	5.9	66.8	10.9	16.3	22.4	17.1	25	35.6	
Total %	6.7	27.1	2	3.3	2	1.9	1.2	2.9	2.3	26.4	4.3	6.4	3	2.3	3.4	4.8	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	32	**126**	12	10	**180**	10	8	4	10	32	**13**	116	22	37	188	14	7	13	26	60	460
11:45 AM	28	112	10	16	166	12	9	**8**	**14**	**43**	11	**120**	**24**	36	191	**17**	12	18	**28**	**75**	**475**
12:00 PM	27	110	**15**	**20**	172	9	**10**	7	12	38	10	117	20	**49**	**196**	14	12	21	22	69	475
12:15 PM	**37**	108	8	11	164	**13**	9	8	11	41	9	111	18	24	162	16	**14**	**23**	18	71	438
Total Volume	124	456	45	57	682	44	36	27	47	154	43	464	84	146	737	61	45	75	94	275	1848
% App. Total	18.2	66.9	6.6	8.4		28.6	23.4	17.5	30.5		5.8	63	11.4	19.8		22.2	16.4	27.3	34.2		
PHF	.838	.905	.750	.713	.947	.846	.900	.844	.839	.895	.827	.967	.875	.745	.940	.897	.804	.815	.839	.917	.973

Transportation Data Corporation

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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BBB
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

Groups Printed- Trucks & Buses

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	0	2	0	0	1	0	0	0	0	2	0	0	0	0	0	0	5
11:15 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
11:30 AM	1	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
11:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	3
Total	1	3	0	0	2	0	0	0	0	9	0	0	1	0	0	0	16
12:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Total	0	3	0	0	0	0	1	0	0	3	0	0	0	0	0	0	7
Grand Total	1	7	0	0	2	0	1	0	0	14	0	0	1	0	0	0	26
Apprch %	12.5	87.5	0	0	66.7	0	33.3	0	0	100	0	0	100	0	0	0	
Total %	3.8	26.9	0	0	7.7	0	3.8	0	0	53.8	0	0	3.8	0	0	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	**2**	0	0	**2**	**1**	0	0	0	**1**	0	2	0	0	2	0	0	0	0	0	**5**
11:15 AM	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	3
11:30 AM	**1**	1	0	0	2	0	0	0	0	0	0	**3**	0	0	**3**	0	0	0	0	0	5
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	**1**	0	0	0	**1**	3
Total Volume	1	3	0	0	4	2	0	0	0	2	0	9	0	0	9	1	0	0	0	1	16
% App. Total	25	75	0	0		100	0	0	0		0	100	0	0		100	0	0	0		
PHF	.250	.375	.000	.000	.500	.500	.000	.000	.000	.500	.000	.750	.000	.000	.750	.250	.000	.000	.000	.250	.800

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City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BBB
Site Code : 20150479
Start Date : 5/2/2015

Groups Printed- Bikes by Direction

	Walnut Street From North				Newtonville Avenue From East				Walnut Street From South				Austin Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
11:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11:30 AM	0	2	0	0	0	1	0	0	0	3	0	0	1	0	0	0	7
11:45 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
Total	0	3	0	0	0	1	2	0	0	8	0	0	1	0	1	0	16
12:00 PM	0	2	1	0	0	0	0	0	0	2	0	0	0	0	0	0	5
12:15 PM	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3
12:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:45 PM	0	1	0	0	0	0	0	0	1	2	0	0	0	0	1	0	5
Total	0	7	1	0	1	0	0	0	1	5	0	0	0	0	1	0	16
01:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3
01:15 PM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
01:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Total	0	4	0	0	0	0	0	0	0	6	0	0	2	0	0	0	12
Grand Total	0	14	1	0	1	1	2	0	1	19	0	0	3	0	2	0	44
Apprch %	0	93.3	6.7	0	25	25	50	0	5	95	0	0	60	0	40	0	
Total %	0	31.8	2.3	0	2.3	2.3	4.5	0	2.3	43.2	0	0	6.8	0	4.5	0	

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	0	**2**	0	0	2	0	**1**	0	0	**1**	0	**3**	0	0	**3**	**1**	0	0	0	**1**	**7**
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:00 PM	0	2	**1**	0	**3**	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
12:15 PM	0	1	0	0	1	**1**	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
Total Volume	0	6	1	0	7	1	1	0	0	2	0	9	0	0	9	1	0	0	0	1	19
% App. Total	0	85.7	14.3	0		50	50	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.750	.250	.000	.583	.250	.250	.000	.000	.500	.000	.750	.000	.000	.750	.250	.000	.000	.000	.250	.679

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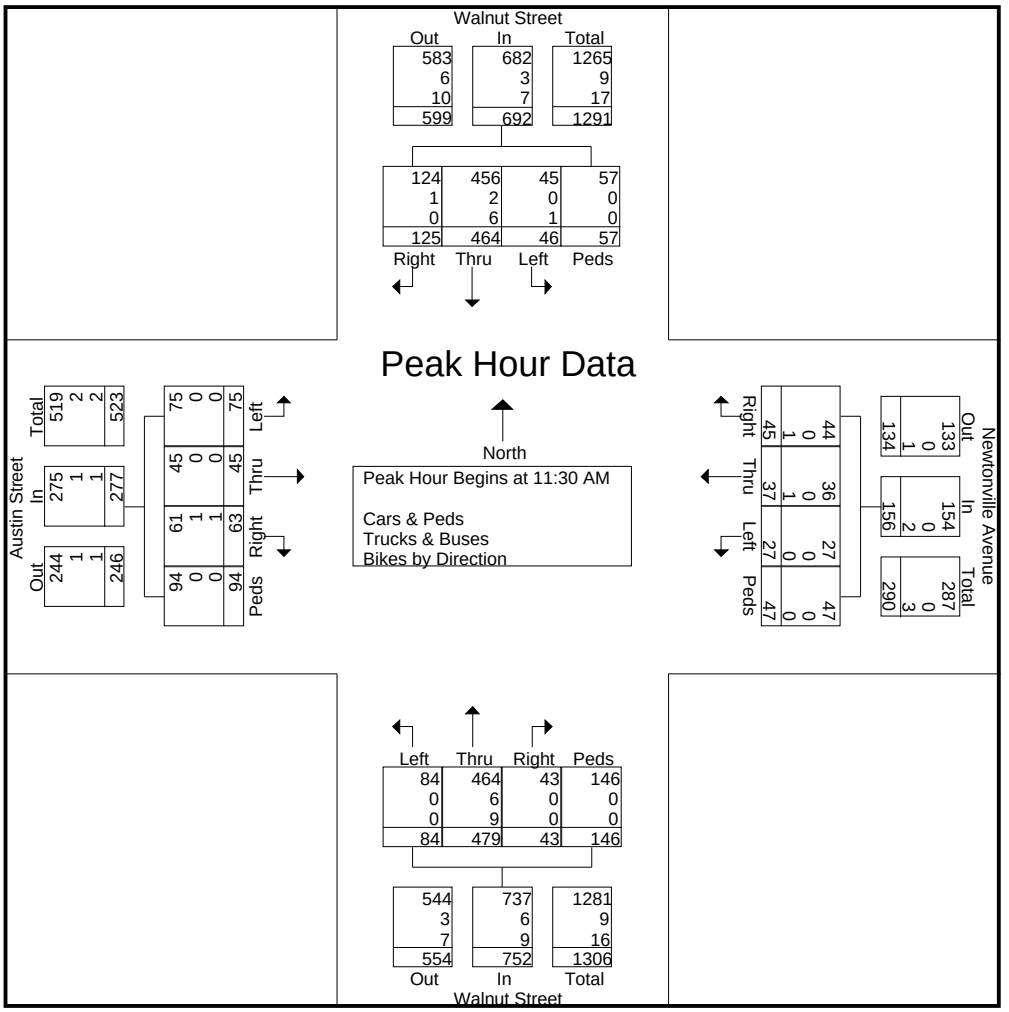
City, State: Newtonville, MA
Client: Nelson-Nygaard/A. Fletcher

File Name : 04557BBB
Site Code : 20150479
Start Date : 5/2/2015
Page No : 1

	Walnut Street From North					Newtonville Avenue From East					Walnut Street From South					Austin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	33	**129**	12	10	**184**	10	9	4	10	33	**13**	122	22	37	194	15	7	13	26	61	472
11:45 AM	28	113	10	16	167	12	9	**8**	**14**	**43**	11	**125**	**24**	36	196	**18**	12	18	**28**	**76**	**482**
12:00 PM	27	113	**16**	**20**	176	9	**10**	7	12	38	10	120	20	**49**	**199**	14	12	21	22	69	482
12:15 PM	**37**	109	8	11	165	**14**	9	8	11	42	9	112	18	24	163	16	**14**	**23**	18	71	441
Total Volume	125	464	46	57	692	45	37	27	47	156	43	479	84	146	752	63	45	75	94	277	1877
% App. Total	18.1	67.1	6.6	8.2		28.8	23.7	17.3	30.1		5.7	63.7	11.2	19.4		22.7	16.2	27.1	33.9		
PHF	.845	.899	.719	.713	.940	.804	.925	.844	.839	.907	.827	.958	.875	.745	.945	.875	.804	.815	.839	.911	.974
Cars & Peds	124	456	45	57	682	44	36	27	47	154	43	464	84	146	737	61	45	75	94	275	1848
% Cars & Peds	99.2	98.3	97.8	100	98.6	97.8	97.3	100	100	98.7	100	96.9	100	100	98.0	96.8	100	100	100	99.3	98.5
Trucks & Buses	1	2	0	0	3	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	10
% Trucks & Buses	0.8	0.4	0	0	0.4	0	0	0	0	0	0	1.3	0	0	0.8	1.6	0	0	0	0.4	0.5
Bikes by Direction	0	6	1	0	7	1	1	0	0	2	0	9	0	0	9	1	0	0	0	1	19
% Bikes by Direction	0	1.3	2.2	0	1.0	2.2	2.7	0	0	1.3	0	1.9	0	0	1.2	1.6	0	0	0	0.4	1.0



TRIP GENERATION SUMMARY - EXISTING

	Existing			
LUC SIZE	Office [1] 710 4,804	MOB [2] 720 20,254	Residential [3] 2	Total Existing Land Use Veh Trips
Weekday Daily				
Enter	28	345	7	380
Exit	28	345	7	380
Total	56	690	14	760
Weekday Evening Peak Hour				
Enter	1	20	1	22
Exit	5	51	1	57
Total	6	71	2	79
Saturday Daily				
Enter	5	87	8	100
Exit	5	87	8	100
Total	10	174	16	200
Saturday Midday Peak Hour				
Enter	1	36	-	37
Exit	1	27	1	29
Total	2	63	1	66

1 Trip generation estimate based on ITE LUC 710 (Office), using regression equation for weekday values and average rate for Saturday values.

2 Trip generation estimate based on ITE LUC 720 (Medical-Dental Office), using regression equation for weekday values and average rate for Saturday values.

3 Trip generation estimate based on ITE LUC 220 (Low-Rise Residential), using avg equation for weekday daily and Saturday values and regression equation for Saturday midday.

ITE TRIP GENERATION WORKSHEET - EXISTING
(10th Edition, Updated 2017)

LANDUSE: General Office Building
LANDUSE CODE: 710
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable ---
FLOOR AREA (KSF): 4.804

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	66	0.83	9.74	2.71	27.56	171	6	1,300	50%	50%
AM PEAK (ADJACENT ST)	35	0.85	1.16	0.37	4.23	117	5	511	86%	14%
PM PEAK (ADJACENT ST)	32	0.88	1.15	0.47	3.23	114	6	511	16%	84%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	47	23	23	56	28	28
AM PEAK (ADJACENT ST)	6	5	1	31	27	4
PM PEAK (ADJACENT ST)	6	1	5	6	1	5

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	5	--	2.21	1.24	7.46	94	28	183	50%	50%
PEAK OF GENERATOR	3	--	0.53	0.30	1.57	82	28	183	54%	46%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	11	5	5	N/A	N/A	N/A
PEAK OF GENERATOR	3	1	1	N/A	N/A	N/A

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	5	--	0.70	0.19	3.05	94	28	183	50%	50%
PEAK OF GENERATOR	3	--	0.21	0.11	0.68	82	28	183	58%	42%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	3	2	2	N/A	N/A	N/A
PEAK OF GENERATOR	1	1	0	N/A	N/A	N/A

ITE TRIP GENERATION WORKSHEET
(10th Edition, Updated 2017)

LANDUSE: Medical-Dental Office Building
LANDUSE CODE: 720
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

FLOOR AREA (KSF): 20.254

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	28	0.95	34.80	9.14	100.75	24	2	111	50%	50%
AM PEAK OF GENERATOR	36	0.90	3.53	1.21	19.28	27	0	175	62%	38%
PM PEAK OF GENERATOR	42	0.91	4.10	1.49	15.55	26	0	175	39%	61%
AM PEAK (ADJACENT ST)	44	0.80	2.78	0.85	14.30	32	2	112	78%	22%
PM PEAK (ADJACENT ST)	65	0.73	3.46	0.25	8.86	28	2	112	28%	72%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	705	352	352	691	345	345
AM PEAK OF GENERATOR	71	44	27	72	45	27
PM PEAK OF GENERATOR	83	32	51	82	32	50
AM PEAK (ADJACENT ST)	56	44	12	54	42	12
PM PEAK (ADJACENT ST)	70	20	50	71	20	51

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	--	8.57	1.10	21.93	41	18	111	50%	50%
PEAK OF GENERATOR	4	0.78	3.10	1.33	4.02	28	18	43	57%	43%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	174	87	87	N/A	N/A	N/A
PEAK OF GENERATOR	63	36	27	49	28	21

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	--	1.42	0.39	5.11	44	18	111	50%	50%
PEAK OF GENERATOR	3	--	0.32	0.12	0.63	31	24	43	52%	48%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	29	14	14	N/A	N/A	N/A
PEAK OF GENERATOR	6	3	3	N/A	N/A	N/A

ITE TRIP GENERATION WORKSHEET
(10th Edition, Updated 2017)

LANDUSE: Multi-Family Housing (Low-Rise - 1-2 Story)
LANDUSE CODE: 220 Independent Variable --- Number of Units
SETTING/LOCATION: General Urban/Suburban
JOB NAME: 2 units
JOB NUMBER:

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	29	0.96	7.32	4.45	10.97	168	5	590	50%	50%
AM PEAK OF GENERATOR	36	0.91	0.56	0.34	0.97	161	5	495	28%	72%
PM PEAK OF GENERATOR	35	0.94	0.67	0.41	1.25	146	5	495	59%	41%
AM PEAK (ADJACENT ST)	42	0.90	0.46	0.18	0.74	199	5	650	23%	77%
PM PEAK (ADJACENT ST)	50	0.86	0.56	0.18	1.25	187	5	650	63%	37%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	15	7	7	-26	-13	-13
AM PEAK (ADJACENT ST)	1	0	1	1	0	1
PM PEAK (ADJACENT ST)	1	1	0	2	1	1

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	0.93	8.14	3.36	11.40	89	48	148	50%	50%
PEAK OF GENERATOR	5	0.92	0.70	0.41	0.93	89	48	148	N/A	N/A

TRIPS:

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	
DAILY	16	8	8	-494	-247	-247	*Caution - Small*
PEAK OF GENERATOR	1	N/A	N/A	-31	N/A	N/A	*Caution - Small*

SUNDAY

RATES:

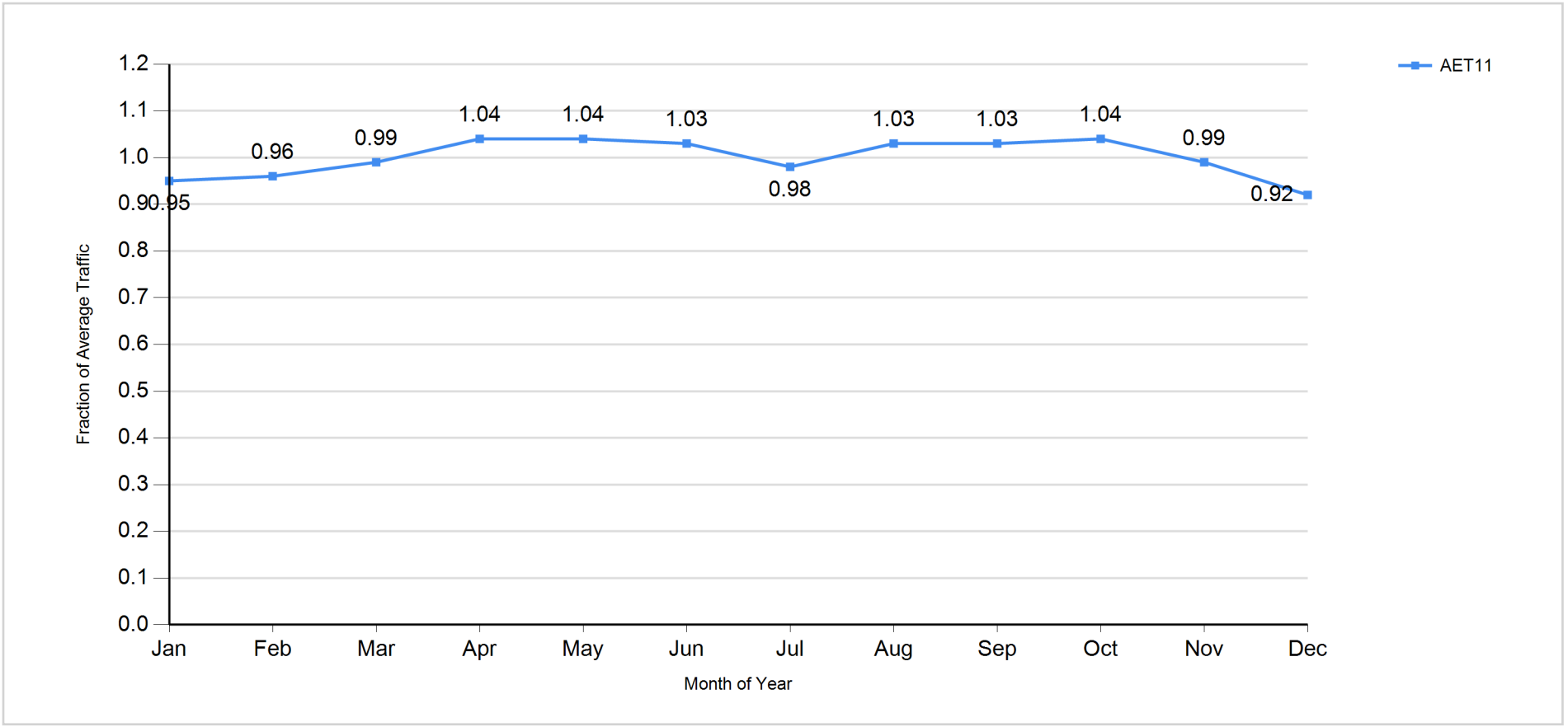
	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	0.96	6.28	2.61	8.22	89	48	148	50%	50%
PEAK OF GENERATOR	5	0.93	0.67	0.36	0.93	89	48	148	N/A	N/A

TRIPS:

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	
DAILY	13	6	6	-322	-161	-161	*Caution - Small*
PEAK OF GENERATOR	1	N/A	N/A	-38	N/A	N/A	*Caution - Small*

Massachusetts Highway Department

Traffic Pattern by Month for 1/1/2019 - 12/31/2019



Traffic Pattern by Month for 1/1/2019 - 12/31/2019

Factor Group	Station	Weight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
U1-Boston	AET11	0	0.945	0.959	0.994	1.036	1.040	1.030	0.979	1.030	1.029	1.044	0.990	0.922
	Average of Weighted Factors		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Fares

PER TRIP	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$1.70	$1.70	$2.40	$4.10*
Cash-on-Board	$1.70	$3.40	$2.40	$4.10
Student/Youth**	$0.85	$0.85	$1.10	$1.10
Senior/TAP***	$0.85	$0.85	$1.10	$1.10
UNLIMITED TRIP PASSES				
1-Day	$12.75	$12.75	$12.75	$12.75
7-Day	$22.50	$22.50	$22.50	$22.50
Monthly	$55.00	$55.00	$90.00	$90.00

FREE FARES: Children 11 and under ride free when accompanied by a paying customer; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

*** Transfers Subway to Silver Line SL4 or SL5 pay $2.40**
**** Requires Student CharlieCard or Youth CharlieCard.**

Student CharlieCards available to students through participating middle and high schools. Youth CharlieCards available through community partners across Greater Boston.

***** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+ and persons with disabilities.**

TRANSFERS
If paying with a CharlieTicket or CharlieCard, discounted transfers that are available are automatic — use the same ticket or card throughout your trip. If paying with cash onboard a vehicle, free transfers are only allowed between subway lines and inside paid platform areas at gated stations.

SCHEDULES
Schedules are available at the subway stations that a route serves.
All schedulesavailable at: South Staion, Park Street and Airport.

For real-time subway and bus tracking, download the Transit app on any smartphone.

Schedule Change

Rapid Transit

Effective December 20, 2020

Massachusetts Bay Transportation Authority
massDOT Massachusetts Department of Transportation

Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

Rapid Transit Line	Weekday				Saturday			Sunday		
	First Trip	Peak	Off Peak	Last Trip	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip
Red Line										
Alewife	5:24 AM	9	12-16	12:23 AM	5:24 AM	12-16	12:20 AM	6:08AM	12-16	12:20 AM
Braintree	5:08 AM	mins	mins	12:17 AM	5:09 AM	mins	12:17 AM	5:56AM	mins	12:17 AM
Alewife	5:16 AM	9	12-16	w 12:30 AM	5:16 AM	12-16	w 12:27 AM	6:00AM	12-16	w 12:27 AM
Ashmont	5:16 AM	mins	mins	w 12:30 AM	5:16 AM	mins	w 12:30 AM	6:00AM	mins	w 12:30 AM
"M" Ashmont	5:17 AM	5	8-12 Day	w 1:05 AM	5:15 AM	8-12 Day	w 1:05 AM	6:03AM	8-12 Day	w 1:05 AM
Mattapan	5:05 AM	mins	26 Late	12:53 AM	5:05 AM	26 Early/Late	12:53 AM	5:51AM	26 Early/Late	12:55 AM
Blue Line										
Wonderland	5:13 AM	5	9-13	12:28 AM	5:25 AM	9-13	12:28 AM	5:58AM	9-13	12:28 AM
Orient Heights	5:14 AM	mins	mins	12:33 AM	5:13 AM	mins	12:33 AM	6:03AM	mins	12:33 AM
Bowdoin	5:30 AM			w 1:00 AM	5:29 AM		w 1:00 AM	6:21AM		w 1:00 AM
Orange Line										
Oak Grove	5:16 AM	7	9-11	w 12:30 AM	5:16 AM	9-11	w 12:30 AM	6:00AM	9-11	w 12:30 AM
Forest Hills	5:16 AM	mins	mins	w 12:28 AM	5:16 AM	mins	w 12:28 AM	6:00AM	mins	w 12:28 AM
Green Line*										
B Boston College	5:01 AM	6	7-10	12:10 AM	4:45 AM [2]	7-8	12:09 AM	5:20AM [2]	9	12:10 AM
Park Street	5:45 AM	mins	mins	w 12:52 AM	5:41 AM	mins	w 12:52 AM	6:15AM	mins	w 12:52 AM
C Cleveland Circle	4:57 AM [1]	6-8	9-11	12:07 AM	4:50 AM [2]	9-10	12:10 AM	5:30AM [2]	10	12:10 AM
North Station	5:48 AM	mins	mins	w 12:46 AM	5:30 AM	mins	w 12:46 AM	6:06AM	mins	w 12:46 AM
D Riverside	4:56 AM	6-7	8-11	12:02 AM	4:55 AM	8-9	12:02 AM	5:25AM	11-12	12:05 AM
Government Ctr.	5:45 AM	mins	mins	w 12:49 AM	5:41 AM	mins	w 12:49 AM	6:12AM	mins	w 12:49 AM
E Lechmere *	5:00 AM [4]	6-7	8-10	12:35 AM	5:00 AM	10	12:34 AM	5:36AM	12	12:34 AM
Heath Street	5:44 AM	mins	mins	12:47 AM [3]	5:40 AM	mins	12:47 AM [3]	6:16AM	mins	12:47 AM [3]
Silver Line										
SL1 Logan Airport	5:38 AM	7-12	10-12	f 1:06 AM	5:48 AM	10-12	1:15 AM	5:50AM	10-12	f 1:12 AM
South Station	5:37 AM	mins	mins	w 12:49 AM	5:45 AM	mins	w 12:59 AM	6:12AM	mins	w 1:00 AM
SL2 Design Center	6:18 AM	6	14-16	12:37 AM	6:03 AM	14-16	12:35 AM	6:51AM	14-16	12:51 AM
South Station	5:54 AM	mins	mins	12:51 AM	5:47 AM	mins	12:45 AM	6:35AM	mins	12:36 AM
	4:55 AM	6-11	8-13	f 1:05 AM	5:30 AM	8-13	1:22 AM	6:26AM	8-13	f 1:25 AM
SL3 Chelsea Station	4:20 AM	mins	mins	w 12:35 AM	4:56 AM	mins	w 12:55 AM	5:53AM	mins	w 12:55 AM
South Station										
SL4 Nubian Station	5:20 AM	6-11	6-11	12:20 AM	5:23 AM	13-20	12:20 AM	6:02AM	13-20	12:20 AM
South Station	5:38 AM	mins	mins	12:37 AM	5:40 AM	mins	12:40 AM	6:20AM	mins	12:40 AM
SL5 Nubian Station	5:15 AM	11-14	13-20	12:51 AM	5:19 AM	6-11	12:43 AM	6:00AM	6-11	12:25 AM
Downtown Xing	5:32 AM	mins	mins	w 1:07 AM	5:34 AM	mins	w 1:00 AM	6:16AM	mins	w 12:47 AM

Peak Service:
Weekdays 7 AM - 9 AM, 4 PM - 6:30 PM

Green Line Notes:

New and ongoing infrastucture projects may result in diversions on some branches at various times.

See GL service changes at mbta.com/GLwork

View service alerts at mbta.com/alerts

* E trains start/end at North Station for Green Line Extension work – shuttles provided between North Station and Lechmere.

More: mbta.com/GLEwork

1 - The first two C train AM northbound trips run through to Lechmere Station on weekdays.

2 - The first B and second C train AM northbound trips run through to Lechmere Station on weekends.

3 - On weekdays the 12:27 AM trip (weekends the 12:32 AM trip) from Heath St is the last connecting train to other lines downtown. The 12:37AM and 12:47AM trips (weekends the 12:47AM trip) from Heath St. runs in service to Lechmere with no guaranteed connections.

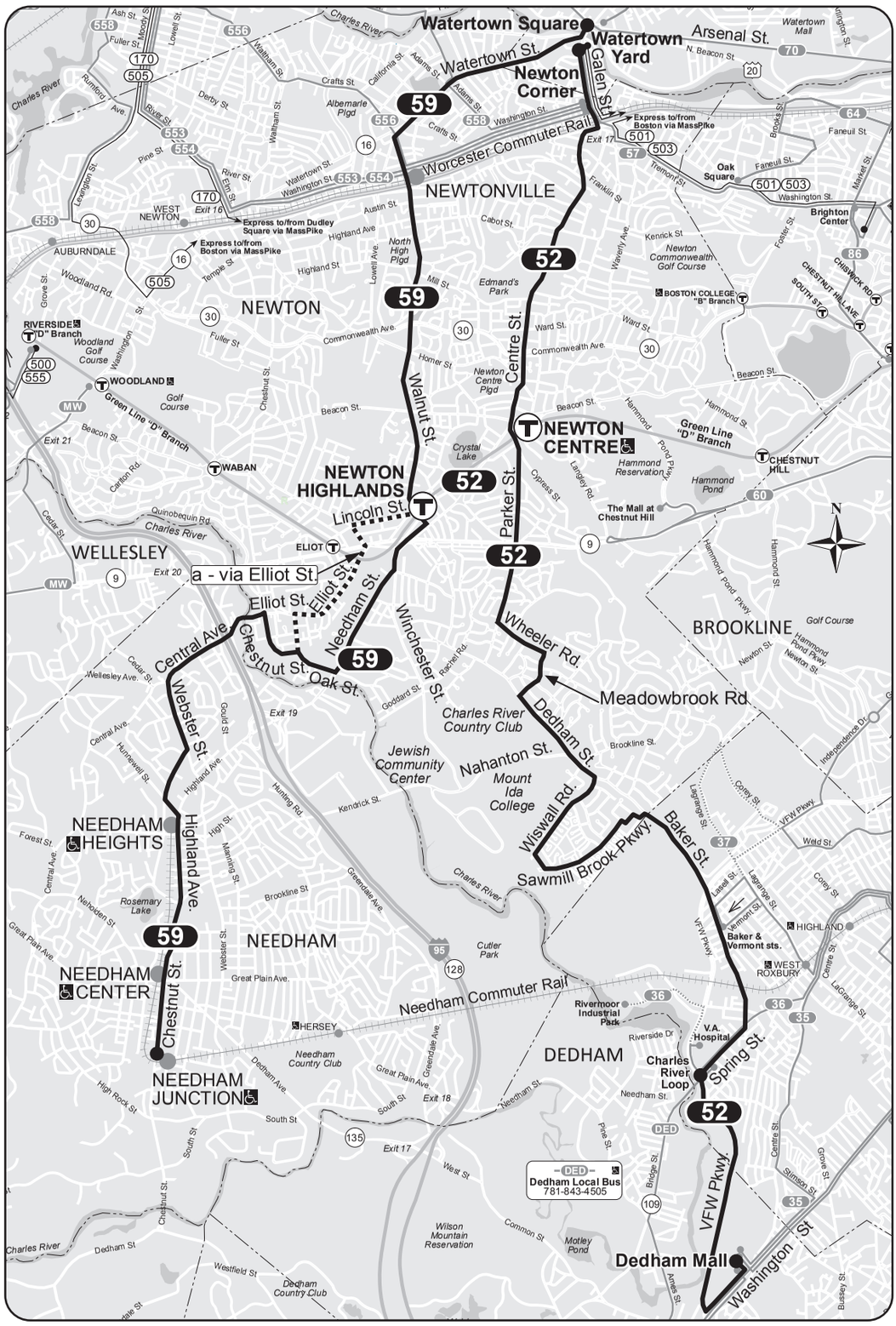
4 - Early morning service from Lechmere to Riverside departs Lechmere at 5:00 AM.

f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops.

w - Last trips wait at some stations, primarily in the Downtown area, for connecting service. Departure times are approximate.

Winter 2021 Holidays
12/25/20 & 1/1/21 Sun; 1/18/21 & 2/15/21: Sat

Route 52 Dedham Mall - Watertown Yard
Route 59 Needham Junction - Watertown Square



52 Weekday

Inbound				Outbound			
Leave Dedham Mall	Lv/Arrive Charles River	Arrive Newton Center	Arrive Watertown Yard	Leave Watertown Yard	Arrive Newton Center	Arrive Charles River	Arrive Dedham Mall
.....	6:08A	6:25A	6:35A	6:38A	6:47A	7:05A	.....
.....	6:42	6:59	7:10	7:33	7:42	8:00	.....
.....	7:12	7:31	7:42	8:40	8:48	9:06	9:14A
.....	8:05	8:24	8:35				
				s 3:00P	**3:09P**	**3:29P**	**3:38P**
.....	**2:36P**	**2:55P**	**3:06P**	**4:48**	**4:57**	**5:17**	**5:26**
4:00P	**4:02**	**4:20**	**4:32**	**6:35**	**6:44**	**7:04**	**.....**
5:50	**5:52**	**6:09**	**6:21**				

s - Does NOT run during school vacation

No Route 52 service on Saturday or Sunday

Route 52 Dedham Mall - Watertown Yard

59 Weekday

Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
6:20A	6:38A	6:55A	6:05A	6:18A	6:37A
6:50	7:09	7:30	6:35	6:48	7:07
a7:20	7:41	8:02	7:05	7:25	7:44
7:55	8:17	8:39	7:35	7:55	8:15
a 8:25	8:51	9:10	8:10	8:30	8:50
9:00	9:19	9:36	8:45	9:04	9:24
9:35	9:54	10:11	9:25	9:44	10:04
10:10	10:29	10:46	10:05	10:22	10:42
10:55	11:14	11:31	10:55	11:12	11:33
11:45	**12:04P**	**12:21P**	11:45	**12:02P**	**12:23P**
12:35P	**12:54**	**1:11**	**12:35P**	**12:52**	**1:13**
1:25	**1:44**	**2:01**	**1:25**	**1:42**	**2:03**
2:15	**2:34**	**2:51**	**2:10**	**2:27**	**2:52**
3:10	**3:33**	**3:56**	**3:00**	**3:20**	**3:45**
4:00	**4:22**	**4:44**	**3:50**	**4:10**	**4:35**
4:50	**5:13**	**5:33**	**a 4:30**	**4:50**	**5:14**
5:25	**5:48**	**6:08**	**5:05**	**5:28**	**5:53**
6:05	**6:28**	**6:46**	**a 5:45**	**6:08**	**6:32**
6:40	**6:58**	**7:16**	**6:25**	**6:42**	**7:05**
7:15	**7:31**	**7:46**	**7:00**	**7:16**	**7:39**
7:50	**8:07**	**8:22**			

a - Via Elliot St.

Route 59 Needham Junction- Watertown Square

59 Saturday

Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
7:05A	7:23A	7:36A	6:20A	6:35A	6:49A
8:35	8:55	9:10	7:50	8:05	8:22
10:05	10:28	10:45	9:20	9:35	9:56
11:36	**12:01P**	**12:18P**	10:50	11:05	11:30
1:10P	**1:35P**	**1:50P**	**12:22P**	**12:37P**	**1:02P**
2:40	**3:02**	**3:17**	**1:55**	**2:10**	**2:31**
4:10	**4:31**	**4:46**	**3:25**	**3:40**	**3:59**
5:40	**6:01**	**6:15**	**4:55**	**5:10**	**5:29**
7:05	**7:25**	**7:39**	**6:25**	**6:40**	**6:57**

59 Sunday

Inbound			Outbound		
Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square	Arrive Newton Highlands	Arrive Needham Junction
7:50A	8:07A	8:20A	7:05A	7:17A	7:33A
9:20	9:39	9:53	8:35	8:47	9:05
10:50	11:09	11:23	10:05	10:18	10:38
			11:35	11:48	12:08
12:20P	**12:40P**	**12:56P**			
1:50	**2:08**	**2:24**	**1:05P**	**1:18P**	**1:38P**
3:20	**3:39**	**3:56**	**2:35**	**2:48**	**3:08**
4:50	**5:09**	**5:25**	**4:05**	**4:18**	**4:38**
6:20	**6:39**	**6:55**	**5:35**	**5:49**	**6:09**

All buses are accessible to persons with disabilities

Fare	Local Bus	Bus + Bus	Subway	Bus + Subway
CharlieCard	$1.70	$1.70	$2.40	$2.40
CharlieTicket	$1.70	$1.70	$2.40	$4.10*
Cash-on-Board	$1.70	$3.40	$2.40	$4.10
Student/Youth**	$0.85	$0.85	$1.10	$1.10
Senior/TAP***	$0.85	$0.85	$1.10	$1.10

FREE FARES: Children 11 and under ride free when accompanied by a paying customer; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Transfers Subway to Silver Line SL4 or SL5 pay $2.40

** Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards available to students through participating middle and high schools. Youth CharlieCards available through community partners across Greater Boston.

*** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Winter 2021 Holidays
12/25/20 & 1/1/21 Sun; 1/18/21 & 2/15/21: Sat

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton | COUNT DATE : April 2015

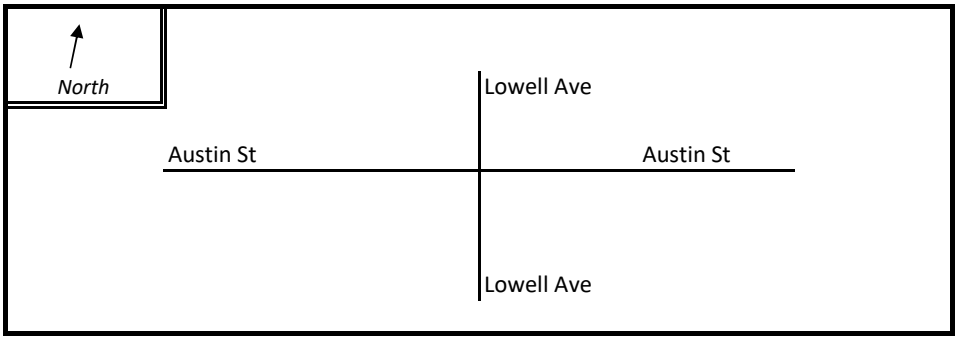
DISTRICT : 6 | UNSIGNALIZED : X (0.52) | SIGNALIZED : (0.71)

~ INTERSECTION DATA ~

MAJOR STREET : Lowell Avenue

MINOR STREET(S) : Austin Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (SAT/**PM**) :	475	655	85	215		**1,430**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **15,889**

TOTAL # OF CRASHES : 18 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **3.60**

CRASH RATE CALCULATION : **0.62**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : MassDOT Accident Data (2014-2018)

Project Title & Date: 15148.00 Russian School of Mathematics (*January 2021*)

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton | COUNT DATE : N/A

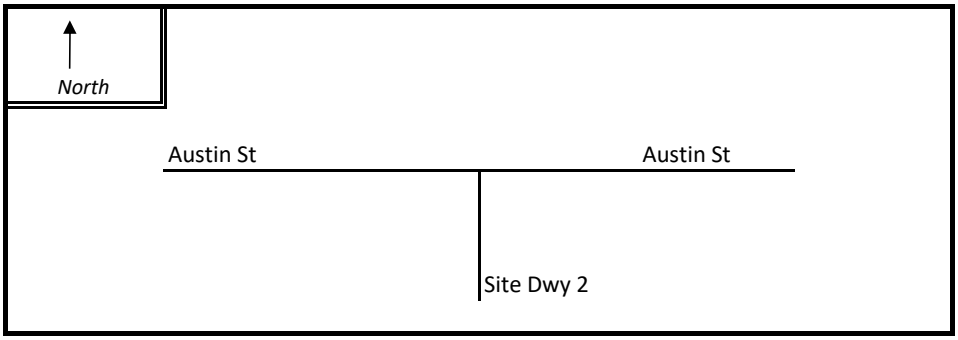
DISTRICT : 6 | UNSIGNALIZED : X (0.52) | SIGNALIZED : (0.71)

~ INTERSECTION DATA ~

MAJOR STREET : Austin Street

MINOR STREET(S) : Site Driveway 2

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB		EB	WB		
PEAK HOURLY VOLUMES (SAT/**PM**) :	20		190	195		**405**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **4,500**

TOTAL # OF CRASHES : 1 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **0.20**

CRASH RATE CALCULATION : **0.12**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : MassDOT Accident Data (2014-2018)

Project Title & Date: 15148.00 Russian School of Mathematics (*January 2021*)

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton | COUNT DATE : N/A

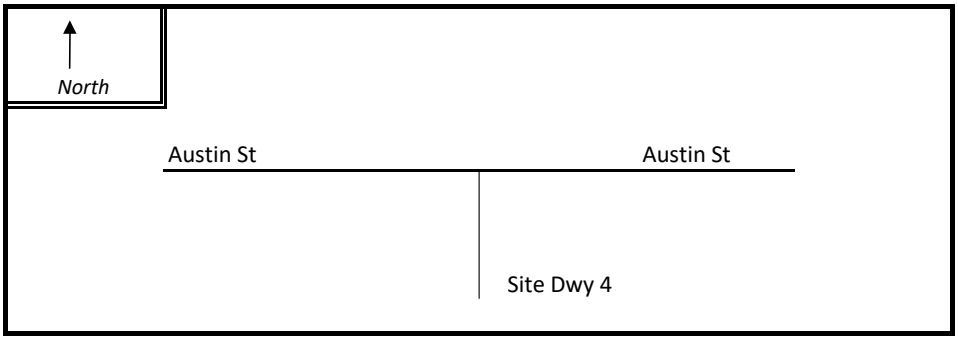
DISTRICT : 6 | UNSIGNALIZED : X (0.52) | SIGNALIZED : (0.71)

~ INTERSECTION DATA ~

MAJOR STREET : Austin Street

MINOR STREET(S) : Site Driveway 4

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB		EB	WB		
PEAK HOURLY VOLUMES (SAT/**PM**) :	20		205	200		**425**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **4,722**

TOTAL # OF CRASHES : 1 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **0.20**

CRASH RATE CALCULATION : **0.12**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : MassDOT Accident Data (2014-2018)

Project Title & Date: 15148.00 Russian School of Mathematics (*January 2021*)

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton | COUNT DATE : April 2015

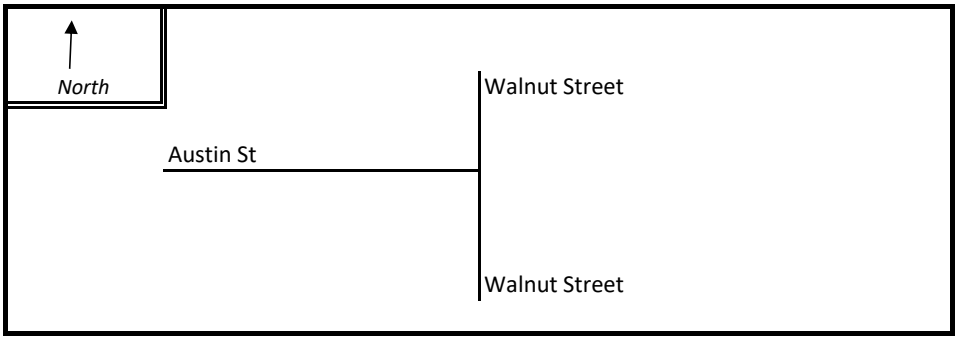
DISTRICT : 6 | UNSIGNALIZED : X (0.52) | SIGNALIZED : (0.71)

~ INTERSECTION DATA ~

MAJOR STREET : Walnut Street

MINOR STREET(S) : Austin Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB			
PEAK HOURLY VOLUMES (SAT/**PM**) :	730	805	215			**1,750**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **19,444**

TOTAL # OF CRASHES : 12 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **2.40**

CRASH RATE CALCULATION : **0.34**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : MassDOT Accident Data (2014-2018)

Project Title & Date: 15148.00 Russian School of Mathematics (*January 2021*)

Lowell Ave at Austin Street

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Police Agency Type	sptroop	Age of Driver - Youngest Known	Age of Driver - Oldest Known	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	MassDOT District
3910029	NEWTON	08/07/2014	Property damage only (none injured)	12:46 PM	No injury	2	Local police		25-34	45-54	D1: (No improper driving) / D2: (Inattention),(Followed too closely)	Daylight	Rear-end	6
3919824	NEWTON	08/12/2014	Property damage only (none injured)	5:05 PM	No injury	2	Local police		25-34	75-84	D1: (No improper driving) / D2: (Disregarded traffic signs, signals, road markings)	Daylight	Angle	6
4033707	NEWTON	04/09/2015	Property damage only (none injured)	3:01 PM	No injury	2	Local police		45-54	65-74	D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	6
4045292	NEWTON	05/13/2015	Non-fatal injury	6:05 PM	Non-fatal injury - Possible	2	Local police		45-54	65-74	D1: (Failed to yield right of way) / D2: (No improper driving)	Daylight	Angle	6
4072441	NEWTON	07/09/2015	Non-fatal injury	7:57 PM	Non-fatal injury - Non-incapacitating	2	Local police		35-44	65-74	D1: (No improper driving) / D2: (Inattention)	Dark - lighted roadway	Sideswipe, opposite direction	6
4080514	NEWTON	08/25/2015	Property damage only (none injured)	2:17 PM	No injury	2	Local police		55-64	55-64	D1: (No improper driving) / D2: (Disregarded traffic signs, signals, road markings),(Failed to yield right of way)	Daylight	Angle	6
4107026	NEWTON	10/20/2015	Not Reported	12:24 PM	Not reported	2	Local police		35-44	75-84	D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	6
4129821	NEWTON	12/21/2015	Property damage only (none injured)	12:58 PM	No injury	2	Local police		25-34	55-64	D1: (No improper driving) / D2: (No improper driving)	Daylight	Angle	6
4292029	NEWTON	10/17/2016	Property damage only (none injured)	5:29 PM	No injury	2	Local police		18-20	65-74	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	6
4408755	NEWTON	07/18/2017	Property damage only (none injured)	5:44 PM	No injury	2	Local police		18-20	25-34		Daylight	Angle	6
4409299	NEWTON	03/15/2017	Non-fatal injury	12:56 PM	Non-fatal injury - Non-incapacitating	2	Local police		16-17	35-44	D1: (Disregarded traffic signs, signals, road markings),(Inattention) / D2: (No improper driving)	Daylight	Angle	6
4521864	NEWTON	03/28/2018	Property damage only (none injured)	5:58 PM	No injury	2	Local police		55-64	65-74	D1: (No improper driving) / D2: (Disregarded traffic signs, signals, road markings)	Daylight	Angle	6
4555888	NEWTON	06/12/2018	Property damage only (none injured)	9:34 AM	No injury	2	Local police		16-17	65-74	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	6
4568074	NEWTON	06/26/2018	Property damage only (none injured)	3:06 PM	No injury	2	Local police		55-64	75-84	D1: (Inattention) / D2: (No improper driving)	Daylight	Angle	6
4621019	NEWTON	10/13/2018	Property damage only (none injured)	12:20 PM	No injury	2	Local police		21-24	65-74	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	6
4621090	NEWTON	10/25/2018	Property damage only (none injured)	3:32 PM	No injury	2	Local police		55-64	75-84	D1: (No improper driving) / D2: (Inattention)	Daylight	Rear-end	6
4628413	NEWTON	08/30/2018	Property damage only (none injured)	4:19 PM	No injury	2	Local police		25-34	45-54		Daylight	Angle	6
4645587	NEWTON	12/05/2018	Non-fatal injury	2:54 PM	Non-fatal injury - Non-incapacitating	2	Local police		25-34	55-64	D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	6

Crash Number	Non-Motorist Type (All Persons)	RMV Document Numbers	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Crash Report IDs	Most Harmful Event (All Vehicles)	Street Number	Roadway	Near Intersection Roadway
3910029		PW201423101207	Dry	0	0	V1: Slowing or stopped in traffic / V2: Turning right	V1:(Passenger car) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: W / V2: W	Cloudy/Clear	1400000856	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
3919824		PW201423802312	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: N / V2: E	Clear	1400000869	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4033707		PW201511101105	Wet	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Passenger car)	V1: S / V2: E	Rain/Cloudy	1500000453	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4045292		PW201514701308	Dry	0	1	V1: Turning left / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: E / V2: S	Clear	1500000576	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4072441		PW201522501126	Dry	0	2	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: N / V2: W	Clear	1500000782	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4080514		PW201524601717	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Passenger car)	V1: N / V2: Not Reported	Clear	1500000933	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4107026		PW201531000447	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Bus (seats for 16 or more, including driver)) / V2:(Passenger car)	V1: S / V2: W	Clear	1500001147	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN STREET / LOWELL AVENUE	
4129821		PW201600500949	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: S / V2: W	Clear	1500001368	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4292029		PW201633601324 / PW201800306316	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: S / V2: W	Clear	1600001077 / 1600001077	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4408755		PW201722805704 / PW201826307607	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: S / V2: W	Clear	1700000822 / 1700000822	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4409299		PW201722802528	Dry	0	1	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Single-unit truck (3-or-more axles))	V1: E / V2: S	Clear	1700000305	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN STREET / LOWELL AVENUE	
4521864		PW201809301416	Dry	0	0	V1: Travelling straight ahead / V2: Turning left	V1:(Passenger car) / V2:(Passenger car)	V1: S / V2: N	Clear	1800000361	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		LOWELL AVE / AUSTIN ST	
4555888		PW201817301917	Dry	0	0	V1: Travelling straight ahead / V2: Entering traffic lane	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: S / V2: W	Clear	1800000665	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4568074		PW201820000650	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: E / V2: S	Clear	1800000719	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4621019		PW201831801239	Wet	0	0	V1: Travelling straight ahead / V2: Entering traffic lane	V1:(Passenger car) / V2:(Passenger car)	V1: N / V2: E	Rain	1800001158	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4621090		PW201831801425	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Bus (seats for 16 or more, including driver))	V1: E / V2: S	Clear	1800001220	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4628413		PW201833201012	Dry	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: N / V2: E	Cloudy	1800000973	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	
4645587		PW201900402711	Dry	0	1	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: S / V2: W	Clear	1800001398	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / LOWELL AVE	

Data Level: CRASH
Query Type: Spatial
Criteria: If you conducted an Advanced Query your SQL statement will be listed here

Austin Street at Site Driveway 2

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Police Agency Type	Age of Driver - Youngest Known	Age of Driver - Oldest Known	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	MassDOT District	Non-Motorist Type (All Persons)	RMV Document Numbers	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Crash Report IDs	Most Harmful Event (All Vehicles)	Street Number	Roadway	Near Intersection Roadway
4413847	NEWTON	08/17/2017	Not Reported	8:34 AM	Not reported	1	Local police				Daylight	Unknown	6		PW02172420613	Dry	0	0	V1: Unknown	V1 (Unknown heavy truck, cannot classify)	V1: U	Clear	1700002943	V1 (Collision with unknown fixed object)	66	AUSTIN STREET	

Data Level: CRASH
Query Type: Spatial
Criteria: If you conducted an Advanced Query your SQL statement will be listed here

Austin Street at Site Driveways 3 & 4

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Police Agency Type	Age of Driver - Youngest Known	Age of Driver - Oldest Known	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	MassDOT District	Non-Motorist Type (All Persons)	RMV Document Numbers	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Crash Report IDs	Most Harmful Event (All Vehicles)	Street Number	Roadway	Near Intersection Roadway
4175454	NEWTON	03/21/2016	Property damage only (none injured)	1:27 PM	No injury	2	Local police	25-34	65-74		Daylight	Not reported	6		PW20161040041 7 / PW201803026 76	Dry	0	0	V1: Parked / V2: Turning right	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Passenger car)	V2: N	Cloudy	1600000257 / 1600000257	V2:(Collision with parked motor vehicle)	46	AUSTIN ST	

Data Level: CRASH
Query Type: Spatial
Criteria: If you conducted an Advanced Query your SQL statement will be listed here

Walnut Street at Austin Street

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Number of Vehicles	Police Agency Type	Age of Driver - Youngest Known	Age of Driver - Oldest Known	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	MassDOT District	Non-Motorist Type (All Persons)	RMV Document Numbers	Road Surface Condition	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Crash Report IDs	Most Harmful Event (All Vehicles)	Street Number	Roadway	Near Intersection Roadway
3725736	NEWTON	01/02/2014	Property damage only (none injured)	7:23 PM	No injury	2	Local police	55-64	55-64	D1: (No improper driving) / D2: (Followed too closely)	Dark - lighted roadway	Single vehicle crash	6		PW201402902014	Snow	0	0	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1: S / V2: S	Snow	1400000014	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	
3735905	NEWTON	02/14/2014	Property damage only (none injured)	1:04 PM	No injury	1	Local police	65-74	65-74	D1: (No improper driving)	Daylight	Angle	6		PW201405002107	Wet	0	0	V1: Travelling straight ahead	V1:(Passenger car)	V1: N	Clear	1400000205	V1:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	
4111033	NEWTON	10/30/2015	Property damage only (none injured)	7:41 PM	No injury	2	Local police	16-17	55-64	D1: (No improper driving) / D2: (Inattention)	Dark - lighted roadway	Sideswipe, same direction	6		PW201532100836	Dry	0	0	V1: Parked / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: N / V2: N	Clear	1500001179	V1:(Collision with motor vehicle in traffic) / V2:(Collision with parked motor vehicle)	304	WALNUT ST	
4150224	NEWTON	02/02/2016	Not Reported	3:19 PM	Unknown	1	Local police				Daylight	Single vehicle crash	6		PW201604701931 / PW201800302936	Dry	0	0	V1: Unknown	V1:(Passenger car)	V1: N	Clear	1600000093 / 1600000093	V1:(Collision with light pole or other post/support)		WALNUT ST / AUSTIN ST	
4215240	NEWTON	05/10/2016	Property damage only (none injured)	2:58 PM	No injury	2	Local police	18-20	18-20	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	6		PW201619500862 / PW201800304608	Dry	0	0	V1: Travelling straight ahead / V2: Turning left	V1:(Passenger car) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: S / V2: E	Clear	1600000440 / 1600000440	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	
4521868	NEWTON	03/30/2018	Property damage only (none injured)	1:46 AM	No injury	2	Local police	18-20	75-84	D1: (No improper driving) / D2: (Failure to keep in proper lane or running off road),(Operating vehicle in erratic, reckless, careless, negligent or aggressive manner)	Dark - lighted roadway	Single vehicle crash	6		PW201809301420	Wet	0	0	V1: Travelling straight ahead / V2: Overtaking/passing	V1:(Passenger car) / V2:(Passenger car)	V1: N / V2: N	Sleet, hail (freezing rain or drizzle)	1800000366	V1:(Other non-collision) / V2:(Collision with curb)	304	WALNUT ST	
4524685	NEWTON	04/02/2018	Property damage only (none injured)	7:09 PM	No injury	2	Local police	55-64	75-84	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	6		PW201810001039	Dry	0	0	V1: Parked / V2: Backing	V1:(Passenger car) / V2:(Passenger car)	V1: N / V2: N	Clear	1800000375	V1:(Collision with parked motor vehicle) / V2:(Collision with parked motor vehicle)	304	WALNUT ST	
4527539	NEWTON	04/06/2018	Property damage only (none injured)	9:54 PM	No injury	1	Local police	75-84	75-84	D1: (Visibility obstructed)	Dark - lighted roadway	Single vehicle crash	6		PW201810800723	Wet	0	0	V1: Turning left	V1:(Passenger car)	V1: N	Rain	1800000393	V1:(Collision with median barrier)		AUSTIN ST / WALNUT ST	
4548266	NEWTON	05/08/2018	Non-fatal injury	6:14 PM	Non-fatal injury - Possible	3	Local police	16-17	35-44	D1: (Inattention) / D2: (No improper driving)	Daylight	Rear-end	6		PW201815701824	Dry	0	1	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Slowing or stopped in traffic	V1:(Passenger car) / V2:(Passenger car) / V3:(Passenger car)	V1: S / V2: S / V3: S	Clear	1800000510	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic) / V3:(Collision with motor vehicle in traffic)	294	WALNUT ST	
4568173	NEWTON	06/25/2018	Non-fatal injury	10:14 AM	Non-fatal injury - Possible	2	Local police	35-44	35-44	D1: (No improper driving)	Daylight	Rear-end	6		PW201820000750	Dry	0	1	V1: Travelling straight ahead / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Light truck(van, mini-van, pickup, sport utility))	V1: N / V2: N	Clear	1800000715	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	
4605304	NEWTON	09/04/2018	Property damage only (none injured)	1:12 PM	No injury	2	Local police	35-44	35-44	D1: (Unknown)	Daylight	Sideswipe, same direction	6		PW201828101304	Dry	0	0	V1: Travelling straight ahead / V2: Parked	V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Passenger car)	V1: E / V2: E	Clear	1800000990	V1:(Collision with parked motor vehicle) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	
4634511	NEWTON	11/23/2018	Property damage only (none injured)	1:38 PM	No injury	2	Local police	75-84	>84	D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	6		PW201834401603	Dry	0	0	V1: Travelling straight ahead / V2: Turning left	V1:(Passenger car) / V2:(Passenger car)	V1: N / V2: E	Clear	1800001347	V1:(Collision with motor vehicle in traffic) / V2:(Collision with motor vehicle in traffic)		AUSTIN ST / WALNUT ST	

Data Level: CRASH
Query Type: Spatial
Criteria: If you conducted an Advanced Query your SQL statement will be listed here

Stopping Sight Distance and Intersection Sight Distance Calculator [v0.97]
Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004

Section I

Project Information

Project Number:	15148.00	**Analyst:**	VHB
City/Town, State:	Newton, MA		
Location:	Austin Street	**Client:**	
	Site Driveway 1 (westmost)		

Street Names and Directions

Major Street name:	Austin Street	EB/WB
Minor Street name:	Site Driveway 1	NB/SB
Minor Street intersects *from* the:	south	
The minor street *predominantly* serves...	Passenger Cars	
Sight distance location intersection is...	Existing	
Total number of lanes on Major Street is...	2	

Street Notes

Grade Information [enter down slope as a negative number]

Major Street Approach Grade:	-2.00%	EB
	0.00%	WB
Minor Street Approach Grade:	0.00%	SB
	0.00%	NB

Major Street Speed Information

Posted		*Observed **
30	EB	30
30	WB	30

** note:* off-peak *85th percentile speeds*

Section II

ISD and SSD *Observations*

Instructions on how to observe and measure ISD and SSD are included on subsequent pages.

ISD - Intersection sight distance is the distance that is based on the time required for perception, reaction and completion of the desired critical exiting maneuver [typically, a left turn] once the driver on a minor street approach [or a site drive] decides to execute the maneuver. Calculation for the critical ISD includes the time to [1] turn left, and to clear the near half of the intersection without conflicting with the vehicles approaching from the left; and [2] upon turning left, to accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. In this context, ISD can be considered as a *desirable* visibility criterion for the safe operation of an unsignalized intersection.

SSD - Stopping sight distance is the distance required for a vehicle approaching an intersection from either direction to perceive, react, and come to a complete stop before colliding with the exiting vehicle from a driveway. In this respect, SSD can be considered as the *minimum* visibility criterion for the safe operation of an unsignalized intersection.

			Limiting Factors:
***Observed* ISD:**	246	looking left [west]	Can see past int to the west (telephone poles slightly obstruct)
(rounded to nearest 5 feet)	723	looking right [east]	To parked car which obstructed int east (telephone poles slightly obstruct)
***Observed* SSD:**	222	traveling EB	From int, as if stopped at EB stop sign
(rounded to nearest 5 feet)	783	traveling WB	From int with Walnut St

Section III

ISD and SSD *Calculations* (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]

Cases are described in detail on subsequent pages. In summary...

B1: left turn from minor road, from stop control
B2: right turn from minor road, from stop control
B3: crossing maneuver from minor road, from stop control, assuming left- and right turns are not permitted *[otherwise, case B1 or B2 would supercede]*

***Desirable* Calculated...**		**Condition Met?**
... ISD, case B1:	335	**No**
... ISD, case B2:	290	**Yes**
... ISD, case B3:	290	**No**

[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]

***Minimum* Calculated ...**		**Condition Met?**
... ISD, case B1:	205	**Yes**
... ISD, case B2:	205	**Yes**
... ISD, case B3:	205	**Yes**

[note: minimum *ISD is equal to required SSD]*

Calculated ...			**Condition Met?**
... SSD:	205	traveling EB	**Yes**
	200	traveling WB	**Yes**

Section IV

AASHTO Guidance

Refer to AASHTO for specific guidance on SSD and ISD if presented with an unusual/atypical case.
Adequate ISD is not needed at signalized intersections, assuming traffic signal heads are visible on all approaches.
Any object that would obstruct the driver's view should be removed or lowered, if practical. Such objects include buildings, parked cars, highway structures, hedges/vegetation/trees/bushes/unmowed lawn, walls, fences, and terrain.
For ISD, an object should be considered an obstruction if it obstructs the vision of a driver whose eye height is 3.5 feet above the roadway surface and the object to be seen is 3.5 feet above the surface of the intersecting road.
Where horizontal sight restrictions occur on downgrades, particularly at the ends of long downgrades, it is desirable to provide SSD that exceeds those values indicated above (refer to page 114 of AASHTO).

Stopping Sight Distance and Intersection Sight Distance Calculator [v0.97]
Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004

Section I

Project Information

Project Number:	15148.00	**Analyst:**	VHB
City/Town, State:	Newton, MA		
Location:	Austin Street	**Client:**	
	Site Driveway 2 (from west)		

Street Names and Directions

Major Street name:	Austin Street	EB/WB
Minor Street name:	Site Driveway 2	NB/SB
Minor Street intersects *from* the:	south	
The minor street *predominantly* serves...	Passenger Cars	
Sight distance location intersection is...	Existing	
Total number of lanes on Major Street is...	2	

Street Notes

Grade Information [enter down slope as a negative number]

Major Street Approach Grade:	0.00%	EB
	0.00%	WB
Minor Street Approach Grade:	0.00%	SB
	0.00%	NB

Major Street Speed Information

Posted		*Observed **
30	EB	30
30	WB	30

** note:* off-peak *85th percentile speeds*

Section II

ISD and SSD *Observations*

Instructions on how to observe and measure ISD and SSD are included on subsequent pages.

ISD - Intersection sight distance is the distance that is based on the time required for perception, reaction and completion of the desired critical exiting maneuver [typically, a left turn] once the driver on a minor street approach [or a site drive] decides to execute the maneuver. Calculation for the critical ISD includes the time to [1] turn left, and to clear the near half of the intersection without conflicting with the vehicles approaching from the left; and [2] upon turning left, to accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. In this context, ISD can be considered as a *desirable* visibility criterion for the safe operation of an unsignalized intersection.

SSD - Stopping sight distance is the distance required for a vehicle approaching an intersection from either direction to perceive, react, and come to a complete stop before colliding with the exiting vehicle from a driveway. In this respect, SSD can be considered as the *minimum* visibility criterion for the safe operation of an unsignalized intersection.

			Limiting Factors:
***Observed* ISD:**	309	looking left [west]	To int west (telephone poles slightly obstruct)
(rounded to nearest 5 feet)	633	looking right [east]	To int east (telephone poles slightly obstruct)
***Observed* SSD:**	315	traveling EB	From int
(rounded to nearest 5 feet)	654	traveling WB	From int

Section III

ISD and SSD *Calculations* (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]

Cases are described in detail on subsequent pages. In summary...

B1: left turn from minor road, from stop control
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B3: crossing maneuver from minor road, from stop control, assuming left- and right turns are not permitted *[otherwise, case B1 or B2 would supercede]*

***Desirable* Calculated...**		**Condition Met?**
... ISD, case B1:	335	**No**
... ISD, case B2:	290	**Yes**
... ISD, case B3:	290	**Yes**

[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]

***Minimum* Calculated ...**		**Condition Met?**
... ISD, case B1:	200	**Yes**
... ISD, case B2:	200	**Yes**
... ISD, case B3:	200	**Yes**

[note: minimum *ISD is equal to required SSD]*

Calculated ...			**Condition Met?**
... SSD:	200	traveling EB	**Yes**
	200	traveling WB	**Yes**

Section IV

AASHTO Guidance

Refer to AASHTO for specific guidance on SSD and ISD if presented with an unusual/atypical case.
Adequate ISD is not needed at signalized intersections, assuming traffic signal heads are visible on all approaches.
Any object that would obstruct the driver's view should be removed or lowered, if practical. Such objects include buildings, parked cars, highway structures, hedges/vegetation/trees/bushes/unmowed lawn, walls, fences, and terrain.
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Stopping Sight Distance and Intersection Sight Distance Calculator [v0.97]
Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004

Section I

Project Information

Project Number:	15148.00	**Analyst:**	VHB
City/Town, State:	Newton, MA		
Location:	Austin Street	**Client:**	
	Site Driveway 3 (from west)		

Street Names and Directions

Major Street name:	Austin Street	EB/WB
Minor Street name:	Site Driveway 3	NB/SB
Minor Street intersects *from* the:		south
The minor street *predominantly* serves...		Passenger Cars
Sight distance location intersection is...		Existing
Total number of lanes on Major Street is...		2

Street Notes

Grade Information [enter down slope as a negative number]

Major Street Approach Grade:	0.00%	EB
	0.00%	WB
Minor Street Approach Grade:	0.00%	SB
	0.00%	NB

Major Street Speed Information

Posted		*Observed **
25	EB	25
25	WB	25

** note:* off-peak *85th percentile speeds*

Section II

ISD and SSD *Observations*

Instructions on how to observe and measure ISD and SSD are included on subsequent pages.

ISD - Intersection sight distance is the distance that is based on the time required for perception, reaction and completion of the desired critical exiting maneuver [typically, a left turn] once the driver on a minor street approach [or a site drive] decides to execute the maneuver. Calculation for the critical ISD includes the time to [1] turn left, and to clear the near half of the intersection without conflicting with the vehicles approaching from the left; and [2] upon turning left, to accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. In this context, ISD can be considered as a *desirable* visibility criterion for the safe operation of an unsignalized intersection.

SSD - Stopping sight distance is the distance required for a vehicle approaching an intersection from either direction to perceive, react, and come to a complete stop before colliding with the exiting vehicle from a driveway. In this respect, SSD can be considered as the *minimum* visibility criterion for the safe operation of an unsignalized intersection.

			Limiting Factors:
***Observed* ISD:**	462	looking left [west]	To int west (telephone poles slightly obstruct)
(rounded to nearest 5 feet)	357	looking right [east]	To int east (telephone poles slightly obstruct)
***Observed* SSD:**	444	traveling EB	From int
(rounded to nearest 5 feet)	441	traveling WB	From int

Section III

ISD and SSD *Calculations* (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]

Cases are described in detail on subsequent pages. In summary...

B1: left turn from minor road, from stop control
B2: right turn from minor road, from stop control
B3: crossing maneuver from minor road, from stop control, assuming left- and right turns are not permitted *[otherwise, case B1 or B2 would supercede]*

***Desirable* Calculated...**		**Condition Met?**
... ISD, case B1:	280	**Yes**
... ISD, case B2:	240	**Yes**
... ISD, case B3:	240	**Yes**

[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]

***Minimum* Calculated ...**		**Condition Met?**
... ISD, case B1:	155	**Yes**
... ISD, case B2:	155	**Yes**
... ISD, case B3:	155	**Yes**

[note: minimum *ISD is equal to required SSD]*

Calculated ...			**Condition Met?**
... SSD:	155	traveling EB	**Yes**
	155	traveling WB	**Yes**

Section IV

AASHTO Guidance

Refer to AASHTO for specific guidance on SSD and ISD if presented with an unusual/atypical case.
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Stopping Sight Distance and Intersection Sight Distance Calculator [v0.97]
Based on 'A Policy on Geometric Design of Highways and Streets', AASHTO, 2004

Section I

Project Information

Project Number:	15148.00	**Analyst:**	VHB
City/Town, State:	Newton, MA		
Location:	Austin Street	**Client:**	
	Site Driveway 4 (eastmost)		

Street Names and Directions

Major Street name:	Austin Street	EB/WB
Minor Street name:	Site Driveway 4	NB/SB
Minor Street intersects *from* the:		south
The minor street *predominantly* serves...		Passenger Cars
Sight distance location intersection is...		Existing
Total number of lanes on Major Street is...		2

Street Notes

Grade Information [enter down slope as a negative number]

Major Street Approach Grade:	0.00%	EB
	0.00%	WB
Minor Street Approach Grade:	0.00%	SB
	0.00%	NB

Major Street Speed Information

Posted		*Observed **
30	EB	30
30	WB	30

** note:* off-peak *85th percentile speeds*

Section II

ISD and SSD *Observations*

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			Limiting Factors:
***Observed* ISD:**	492	looking left [west]	To int west (telephone poles slightly obstruct)
(rounded to nearest 5 feet)	357	looking right [east]	To parked car obstructing int east (telephone poles slightly obstruct)
***Observed* SSD:**	468	traveling EB	From int
(rounded to nearest 5 feet)	441	traveling WB	From int

Section III

ISD and SSD *Calculations* (rounded up to the next highest 5 feet) [sources: SSD - AASHTO, pp.110-117; ISD - AASHTO, pp. 650 - 664]

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***Desirable* Calculated...**		**Condition Met?**
... ISD, case B1:	335	**Yes**
... ISD, case B2:	290	**Yes**
... ISD, case B3:	290	**Yes**

[note: if number of lanes crossed exceeds 6, or if grades are steep, consult the manual]

***Minimum* Calculated ...**		**Condition Met?**
... ISD, case B1:	200	**Yes**
... ISD, case B2:	200	**Yes**
... ISD, case B3:	200	**Yes**

[note: minimum *ISD is equal to required SSD]*

Calculated ...			**Condition Met?**
... SSD:	200	traveling EB	**Yes**
	200	traveling WB	**Yes**

Section IV

AASHTO Guidance

Refer to AASHTO for specific guidance on SSD and ISD if presented with an unusual/atypical case.
Adequate ISD is not needed at signalized intersections, assuming traffic signal heads are visible on all approaches.
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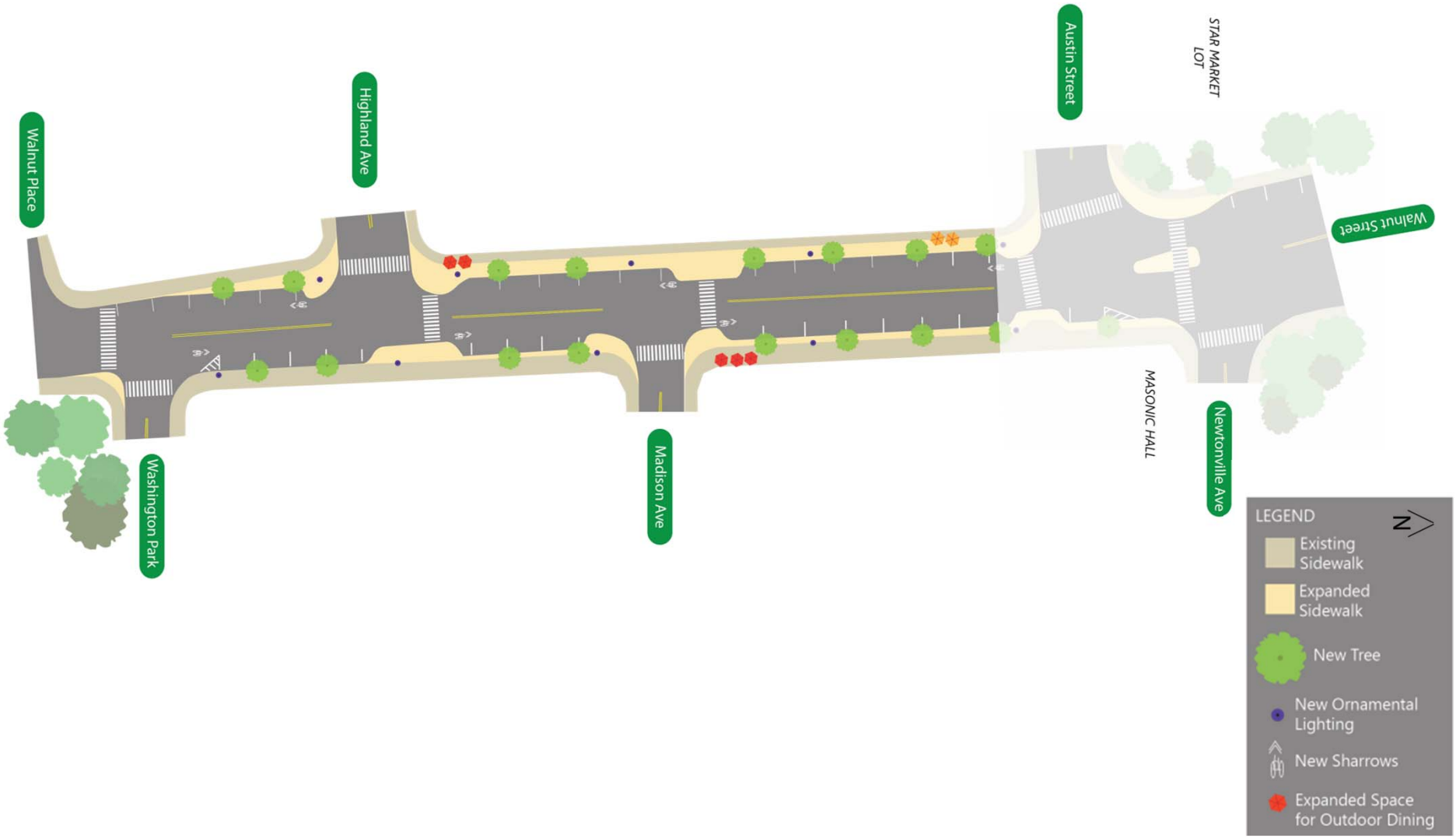
Walnut Street Conceptual Plans

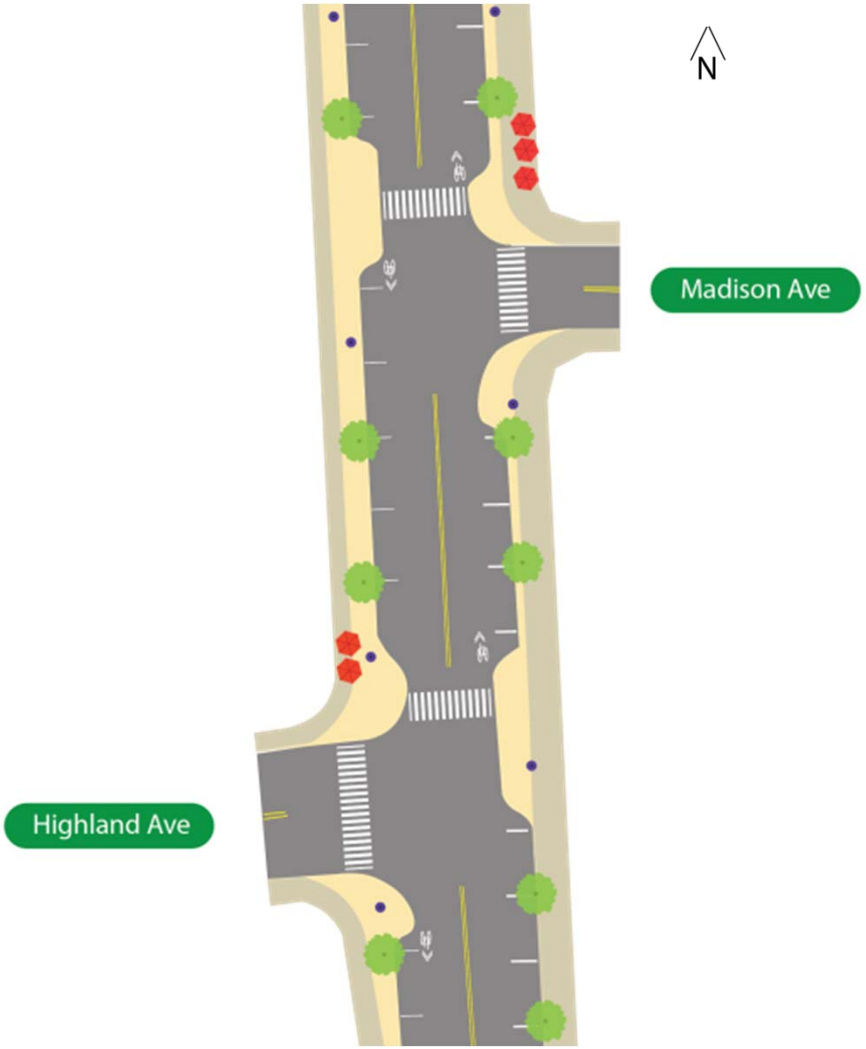
City of Newton

11.10.2015

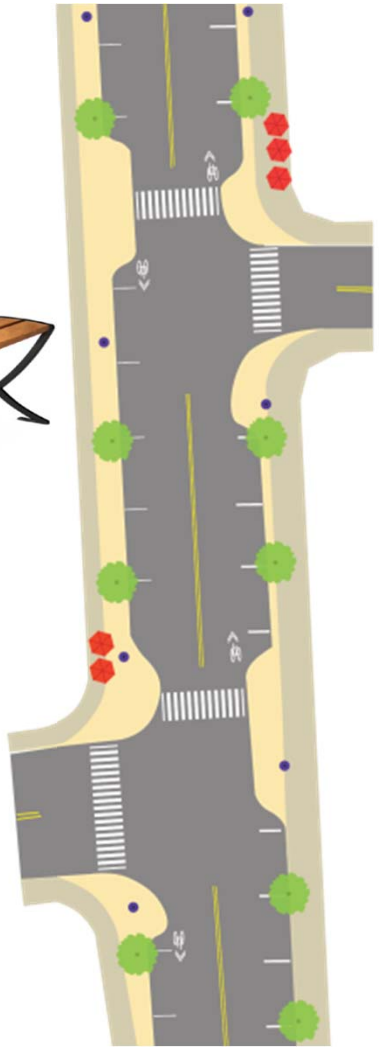
Walnut Street Corridor Concept



Walnut Street Corridor Concept



Walnut Street Corridor Concept



N

Madison Ave

LEGEND

N

Existing Sidewalk

Expanded Sidewalk

New Tree

New Ornamental Lighting

New Sharrows

Expanded Space for Outdoor Dining

Walnut Street Corridor Concept

Walnut Street Corridor Concept

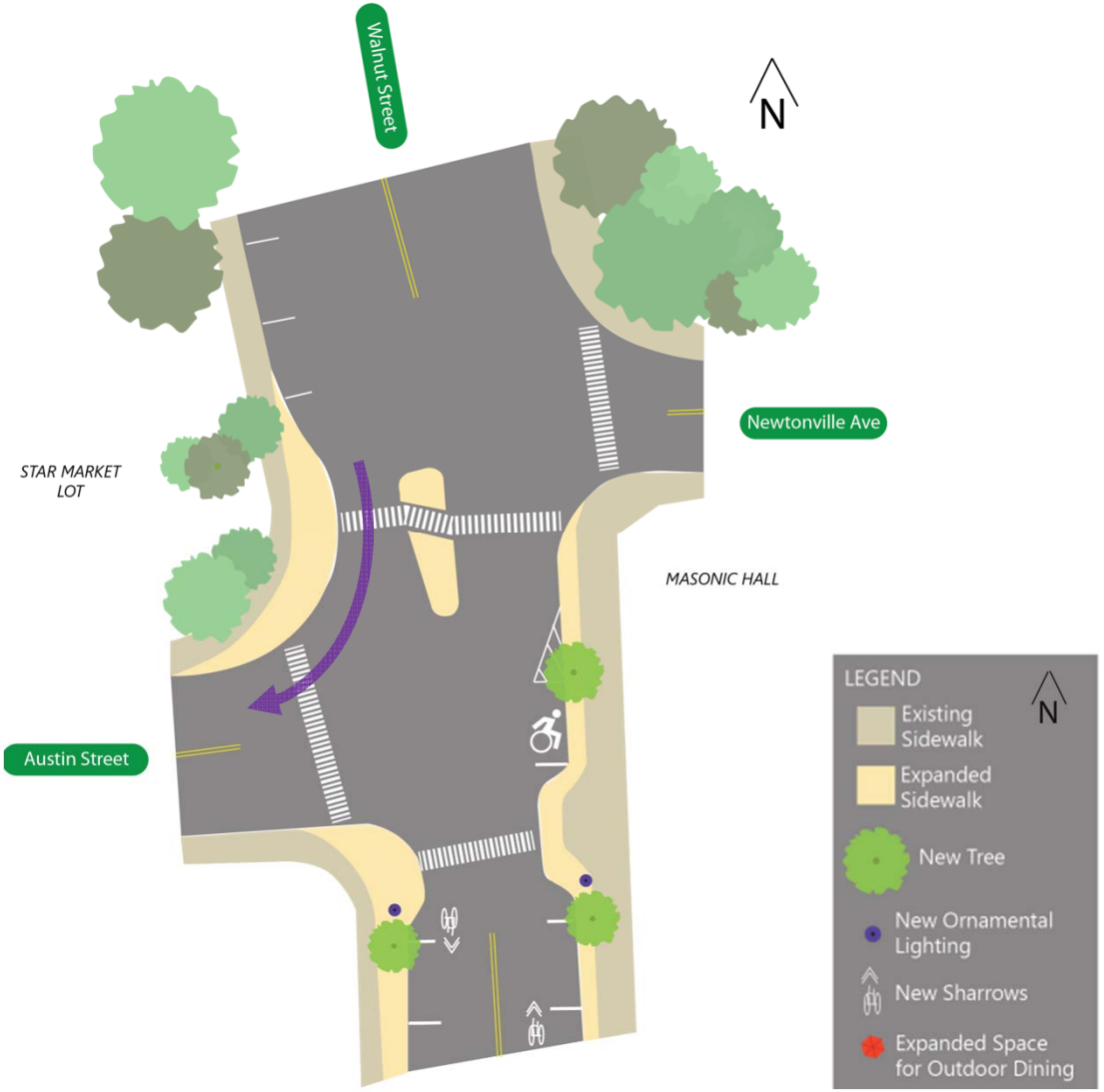
Walnut Street Corridor Concept

- Expanded Sidewalk w/ distinct zones
- LED Lighting on Ornamental Lamps with option of Hanging Planters or Banners
- New Trash Cans and Benches
- Planter Boxes

Walnut St/Austin St Intersection Concept

Bike Racks w/ similar form to benches

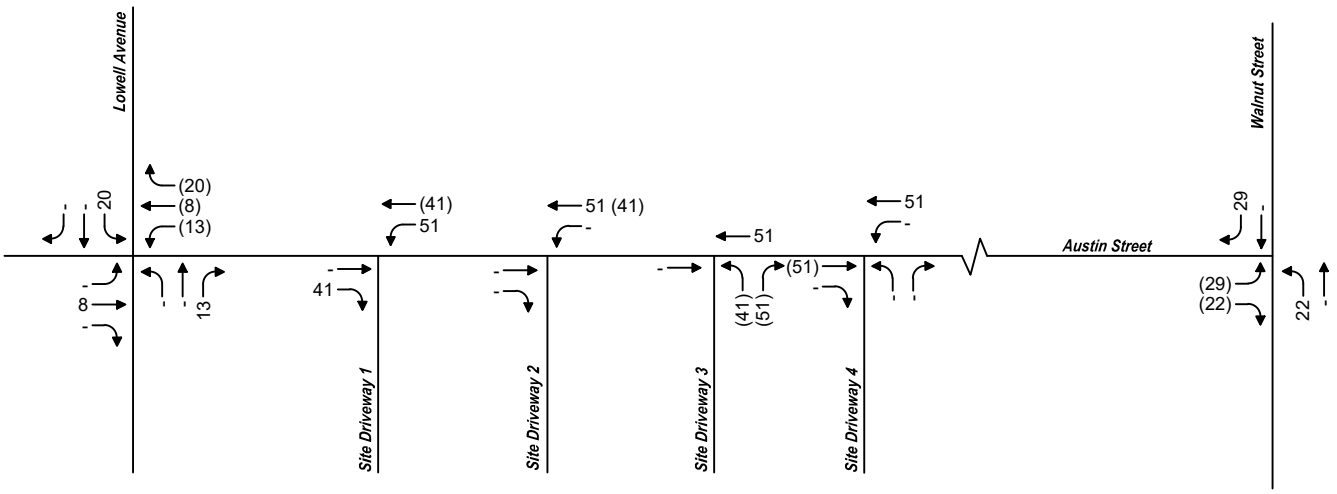
Angled Walkway across island places cars in pedestrian's line of sight



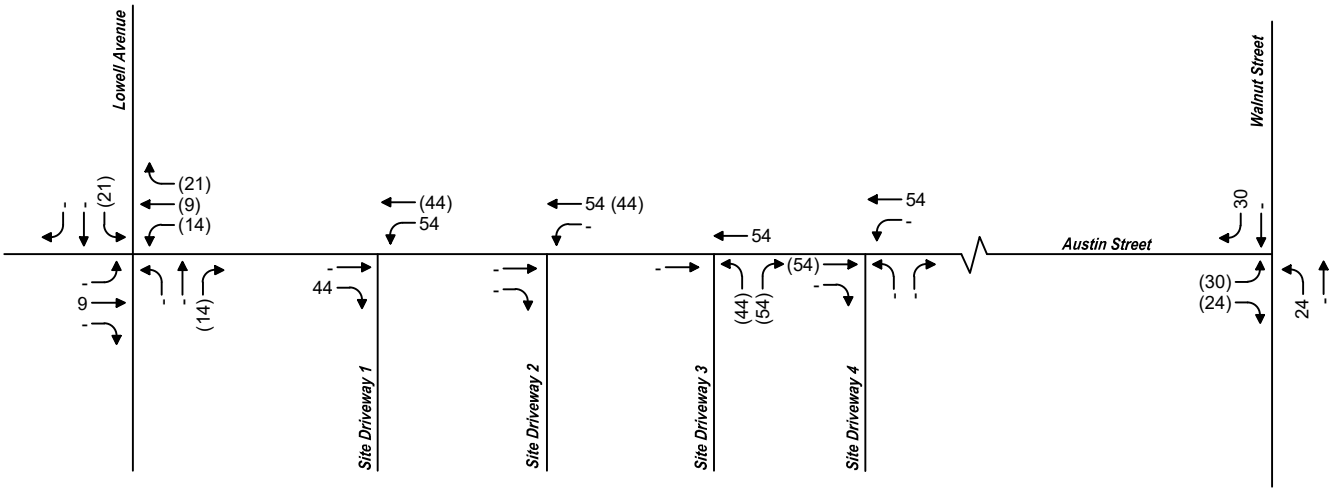
Walnut St/Austin St Intersection Concept

Wayfinding to local businesses and to the Austin Street Lot

Weekday Evening Peak Period



Saturday Midday Peak Period



Not to Scale

Site-Generated Vehicle Trips

Russian School of Mathematics
Newton, Massachusetts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	50	15	55	80	80	25	400	50	90	490	75
Future Volume (vph)	20	50	15	55	80	80	25	400	50	90	490	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1832	0	0	1782	0	0	1868	0	0	1856	0
Flt Permitted		0.988			0.987			0.997			0.993	
Satd. Flow (perm)	0	1832	0	0	1782	0	0	1868	0	0	1856	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.81	0.81	0.81	0.90	0.90	0.90	0.89	0.89	0.89	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	239	0	0	533	0	0	662	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	62.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	50	15	55	80	80	25	400	50	90	490	75
Future Vol, veh/h	20	50	15	55	80	80	25	400	50	90	490	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	89	89	89	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	0	0
Mvmt Flow	25	62	19	61	89	89	28	449	56	91	495	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1337	1276	533	1289	1286	477	571	0	0	505	0	0
Stage 1	715	715	-	533	533	-	-	-	-	-	-	-
Stage 2	622	561	-	756	753	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	132	168	551	142	166	592	1012	-	-	1065	-	-
Stage 1	425	438	-	534	528	-	-	-	-	-	-	-
Stage 2	478	513	-	403	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	141	551	80	139	592	1012	-	-	1065	-	-
Mov Cap-2 Maneuver	49	141	-	80	139	-	-	-	-	-	-	-
Stage 1	408	382	-	513	507	-	-	-	-	-	-	-
Stage 2	322	493	-	285	367	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	152.8	$ 330.4	0.5	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1012	-	-	108	154	1065	-	-
HCM Lane V/C Ratio	0.028	-	-	0.972	1.551	0.085	-	-
HCM Control Delay (s)	8.7	0	-	152.8	$ 330.4	8.7	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	6.1	16.2	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	190	1	0	215	1	0
Future Volume (vph)	190	1	0	215	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1861	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1861	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	208	0	0	234	1	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	190	1	0	215	1	0
Future Vol, veh/h	190	1	0	215	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	1	0	234	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	208	0	442	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1363	-	573	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1363	-	573	832
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	573	-	-	1363	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	11.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	185	5	0	195	20	0
Future Volume (vph)	185	5	0	195	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1857	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	206	0	0	212	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	185	5	0	195	20	0
Future Vol, veh/h	185	5	0	195	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	5	0	212	22	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	206	0	416	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1365	-	593	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1365	-	593	837
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	1365	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	11.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	185	0	10	195	0	20
Future Volume (vph)	185	0	10	195	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1859	1611	0
Flt Permitted				0.998		
Satd. Flow (perm)	1863	0	0	1859	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	0	0	223	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	185	0	10	195	0	20
Future Vol, veh/h	185	0	10	195	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	0	11	212	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	201	0	435	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1371	-	578	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1371	-	573	840
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	-	-	1371	-
HCM Lane V/C Ratio	0.026	-	-	0.008	-
HCM Control Delay (s)	9.4	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	200	5	5	195	10	10
Future Volume (vph)	200	5	5	195	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1857	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	0	0	217	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	5	5	195	10	10
Future Vol, veh/h	200	5	5	195	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	5	5	212	11	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	442	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	573	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	571	820
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	1347	-
HCM Lane V/C Ratio	0.032	-	-	0.004	-
HCM Control Delay (s)	10.5	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	90	70	660	640	165
Future Volume (vph)	125	90	70	660	640	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1724	0	1805	1881	1881	1615
Flt Permitted	0.972		0.950			
Satd. Flow (perm)	1724	0	1805	1881	1881	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	44	83	42			42
Confl. Bikes (#/hr)						8
Peak Hour Factor	0.86	0.86	0.97	0.97	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	250	0	72	680	667	172
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	56.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	90	70	660	640	165
Future Vol, veh/h	125	90	70	660	640	165
Conflicting Peds, #/hr	44	83	42	0	0	42
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	97	97	96	96
Heavy Vehicles, %	1	1	0	1	1	0
Mvmt Flow	145	105	72	680	667	172

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1577	792	881	0	-	0
Stage 1	709	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	~ 121	391	776	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 101	346	745	-	-	-
Mov Cap-2 Maneuver	~ 101	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	396	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 412.3	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	745	-	144	-	-
HCM Lane V/C Ratio	0.097	-	1.736	-	-
HCM Control Delay (s)	10.3	-	$ 412.3	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	18.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	35	10	55	50	100	10	235	35	95	305	30
Future Volume (vph)	25	35	10	55	50	100	10	235	35	95	305	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1830	0	0	1743	0	0	1864	0	0	1862	0
Flt Permitted		0.982			0.987			0.998			0.989	
Satd. Flow (perm)	0	1830	0	0	1743	0	0	1864	0	0	1862	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Peds. (#/hr)	2		2	2		2	9		12	12		9
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	223	0	0	318	0	0	506	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	35	10	55	50	100	10	235	35	95	305	30
Future Vol, veh/h	25	35	10	55	50	100	10	235	35	95	305	30
Conflicting Peds, #/hr	2	0	2	2	0	2	9	0	12	12	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	92	92	92	88	88	88	85	85	85
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	30	42	12	60	54	109	11	267	40	112	359	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1003	951	388	951	948	301	403	0	0	319	0	0
Stage 1	610	610	-	321	321	-	-	-	-	-	-	-
Stage 2	393	341	-	630	627	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	223	262	665	242	263	741	1167	-	-	1252	-	-
Stage 1	485	488	-	695	655	-	-	-	-	-	-	-
Stage 2	636	642	-	473	479	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	139	224	658	182	225	731	1157	-	-	1238	-	-
Mov Cap-2 Maneuver	139	224	-	182	225	-	-	-	-	-	-	-
Stage 1	475	427	-	679	640	-	-	-	-	-	-	-
Stage 2	489	627	-	369	420	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.8	41.4	0.3	1.8
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1157	-	-	199	310	1238	-	-
HCM Lane V/C Ratio	0.01	-	-	0.424	0.719	0.09	-	-
HCM Control Delay (s)	8.1	0	-	35.8	41.4	8.2	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	5.2	0.3	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	5	5	200	5	5
Future Volume (vph)	160	5	5	200	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1855	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1855	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	0	0	222	10	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	5	5	200	5	5
Future Vol, veh/h	160	5	5	200	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	5	5	217	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	179	0	404	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1397	-	603	866
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	601	866
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1397	-
HCM Lane V/C Ratio	0.015	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	15	0	195	10	0
Future Volume (vph)	150	15	0	195	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1840	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1840	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	0	0	212	11	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	150	15	0	195	10	0
Future Vol, veh/h	150	15	0	195	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	16	0	212	11	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	179	0	383	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1397	-	620	873
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	620	873
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	620	-	-	1397	-
HCM Lane V/C Ratio	0.018	-	-	-	-
HCM Control Delay (s)	10.9	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	0	15	195	0	10
Future Volume (vph)	150	0	15	195	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1857	1611	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1857	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	0	228	11	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	150	0	15	195	0	10
Future Vol, veh/h	150	0	15	195	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	0	16	212	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	163	0	407	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	244	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1416	-	600	882
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1416	-	592	882
Mov Cap-2 Maneuver	-	-	-	-	592	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	787	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	882	-	-	1416	-
HCM Lane V/C Ratio	0.012	-	-	0.012	-
HCM Control Delay (s)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	155	5	5	205	5	5
Future Volume (vph)	155	5	5	205	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1855	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1855	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	0	228	10	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	5	5	205	5	5
Future Vol, veh/h	155	5	5	205	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	5	5	223	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	173	0	404	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	233	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1404	-	603	873
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	806	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1404	-	601	873
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	803	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	712	-	-	1404	-
HCM Lane V/C Ratio	0.015	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	130	70	90	570	535	175
Future Volume (vph)	130	70	90	570	535	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1741	0	1805	1881	1900	1599
Flt Permitted	0.968		0.950			
Satd. Flow (perm)	1741	0	1805	1881	1900	1599
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	57	146	94			94
Confl. Bikes (#/hr)						6
Peak Hour Factor	0.86	0.86	0.95	0.95	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	1%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	0	95	600	588	192
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	68.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	130	70	90	570	535	175
Future Vol, veh/h	130	70	90	570	535	175
Conflicting Peds, #/hr	57	146	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	95	95	91	91
Heavy Vehicles, %	0	2	0	1	0	1
Mvmt Flow	151	81	95	600	588	192

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1529	828	874	0	-	0
Stage 1	682	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	~ 130	371	781	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 93	291	711	-	-	-
Mov Cap-2 Maneuver	~ 93	-	-	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 497	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	711	-	122	-	-
HCM Lane V/C Ratio	0.133	-	1.906	-	-
HCM Control Delay (s)	10.8	-	$ 497	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	18.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	50	15	60	85	85	25	440	55	95	530	80
Future Volume (vph)	20	50	15	60	85	85	25	440	55	95	530	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1834	0	0	1782	0	0	1870	0	0	1856	0
Flt Permitted		0.988			0.987			0.998			0.993	
Satd. Flow (perm)	0	1834	0	0	1782	0	0	1870	0	0	1856	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	249	0	0	565	0	0	766	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	111.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	50	15	60	85	85	25	440	55	95	530	80
Future Vol, veh/h	20	50	15	60	85	85	25	440	55	95	530	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	0	0
Mvmt Flow	22	54	16	65	92	92	27	478	60	103	576	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1480	1418	620	1423	1431	508	663	0	0	538	0	0
Stage 1	826	826	-	562	562	-	-	-	-	-	-	-
Stage 2	654	592	-	861	869	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	105	138	492	115	136	569	935	-	-	1035	-	-
Stage 1	369	389	-	515	513	-	-	-	-	-	-	-
Stage 2	459	497	-	353	372	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	111	492	~ 59	109	569	935	-	-	1035	-	-
Mov Cap-2 Maneuver	22	111	-	~ 59	109	-	-	-	-	-	-	-
Stage 1	354	327	-	493	491	-	-	-	-	-	-	-
Stage 2	299	476	-	239	312	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 411.4	$ 591.2	0.4	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	61	118	1035	-	-
HCM Lane V/C Ratio	0.029	-	-	1.515	2.119	0.1	-	-
HCM Control Delay (s)	9	0	-	$ 411.4	$ 591.2	8.9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.2	21	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	200	1	0	230	1	0
Future Volume (vph)	200	1	0	230	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1861	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1861	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	218	0	0	250	1	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	1	0	230	1	0
Future Vol, veh/h	200	1	0	230	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	1	0	250	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	468	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	250	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1352	-	553	822
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1352	-	553	822
Mov Cap-2 Maneuver	-	-	-	-	553	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	553	-	-	1352	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	195	5	0	210	20	0
Future Volume (vph)	195	5	0	210	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1857	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	0	0	228	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	5	0	210	20	0
Future Vol, veh/h	195	5	0	210	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	5	0	228	22	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	217	0	443	215
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	228	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1353	-	572	825
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	810	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1353	-	572	825
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	572	-	-	1353	-
HCM Lane V/C Ratio	0.038	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	195	0	10	210	0	20
Future Volume (vph)	195	0	10	210	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1859	1611	0
Flt Permitted				0.998		
Satd. Flow (perm)	1863	0	0	1859	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	0	239	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	0	10	210	0	20
Future Vol, veh/h	195	0	10	210	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	0	11	228	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	462	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	250	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1358	-	558	828
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	553	828
Mov Cap-2 Maneuver	-	-	-	-	553	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	828	-	-	1358	-
HCM Lane V/C Ratio	0.026	-	-	0.008	-
HCM Control Delay (s)	9.5	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	210	5	5	210	10	10
Future Volume (vph)	210	5	5	210	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1857	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	233	0	0	233	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	5	5	210	10	10
Future Vol, veh/h	210	5	5	210	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	5	5	228	11	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	233	0	469	231
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1335	-	553	808
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1335	-	551	808
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1335	-
HCM Lane V/C Ratio	0.033	-	-	0.004	-
HCM Control Delay (s)	10.7	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	140	95	70	705	685	185
Future Volume (vph)	140	95	70	705	685	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1726	0	1805	1881	1881	1615
Flt Permitted	0.971		0.950			
Satd. Flow (perm)	1726	0	1805	1881	1881	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	44	83	42			42
Confl. Bikes (#/hr)						8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	255	0	76	766	745	201
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	83.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	95	70	705	685	185
Future Vol, veh/h	140	95	70	705	685	185
Conflicting Peds, #/hr	44	83	42	0	0	42
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	0	1	1	0
Mvmt Flow	152	103	76	766	745	201

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1749	870	988	0	-	0
Stage 1	787	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	~ 95	352	708	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 78	311	680	-	-	-
Mov Cap-2 Maneuver	~ 78	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	357	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 665.9	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	680	-	112	-	-
HCM Lane V/C Ratio	0.112	-	2.281	-	-
HCM Control Delay (s)	11	-	$ 665.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	22.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	35	10	60	50	105	10	280	35	105	350	30
Future Volume (vph)	25	35	10	60	50	105	10	280	35	105	350	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1830	0	0	1741	0	0	1868	0	0	1864	0
Flt Permitted		0.983			0.986			0.998			0.989	
Satd. Flow (perm)	0	1830	0	0	1741	0	0	1868	0	0	1864	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Peds. (#/hr)	2		2	2		2	9		12	12		9
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	233	0	0	353	0	0	527	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	14.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	35	10	60	50	105	10	280	35	105	350	30
Future Vol, veh/h	25	35	10	60	50	105	10	280	35	105	350	30
Conflicting Peds, #/hr	2	0	2	2	0	2	9	0	12	12	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	27	38	11	65	54	114	11	304	38	114	380	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1065	1010	408	1008	1007	337	422	0	0	354	0	0
Stage 1	634	634	-	357	357	-	-	-	-	-	-	-
Stage 2	431	376	-	651	650	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	202	242	648	221	243	707	1148	-	-	1216	-	-
Stage 1	471	476	-	665	632	-	-	-	-	-	-	-
Stage 2	607	620	-	461	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	120	205	641	165	206	698	1138	-	-	1202	-	-
Mov Cap-2 Maneuver	120	205	-	165	206	-	-	-	-	-	-	-
Stage 1	462	413	-	650	617	-	-	-	-	-	-	-
Stage 2	457	606	-	360	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.9	57.1	0.3	1.8
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	177	284	1202	-	-
HCM Lane V/C Ratio	0.01	-	-	0.43	0.823	0.095	-	-
HCM Control Delay (s)	8.2	0	-	39.9	57.1	8.3	0	-
HCM Lane LOS	A	A	-	E	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	6.7	0.3	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	170	5	5	210	5	5
Future Volume (vph)	170	5	5	210	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1855	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1855	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	0	0	233	10	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	5	5	210	5	5
Future Vol, veh/h	170	5	5	210	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	5	5	228	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	190	0	426	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1384	-	585	854
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1384	-	583	854
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	693	-	-	1384	-
HCM Lane V/C Ratio	0.016	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	15	0	205	10	0
Future Volume (vph)	160	15	0	205	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1842	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1842	0	0	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	0	0	223	11	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	15	0	205	10	0
Future Vol, veh/h	160	15	0	205	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	16	0	223	11	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	190	0	405	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1384	-	602	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1384	-	602	861
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	602	-	-	1384	-
HCM Lane V/C Ratio	0.018	-	-	-	-
HCM Control Delay (s)	11.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	0	15	205	0	10
Future Volume (vph)	160	0	15	205	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1857	1611	0
Flt Permitted				0.997		
Satd. Flow (perm)	1863	0	0	1857	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	0	0	239	11	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	0	15	205	0	10
Future Vol, veh/h	160	0	15	205	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	0	16	223	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	174	0	429	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1403	-	583	869
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1403	-	575	869
Mov Cap-2 Maneuver	-	-	-	-	575	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	778	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	1403	-
HCM Lane V/C Ratio	0.013	-	-	0.012	-
HCM Control Delay (s)	9.2	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	165	5	5	215	5	5
Future Volume (vph)	165	5	5	215	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1855	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1855	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	0	0	239	10	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	165	5	5	215	5	5
Future Vol, veh/h	165	5	5	215	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	5	5	234	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	184	0	426	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	244	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1391	-	585	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	583	861
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	794	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	695	-	-	1391	-
HCM Lane V/C Ratio	0.016	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	145	75	95	630	595	195
Future Volume (vph)	145	75	95	630	595	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1743	0	1805	1881	1900	1599
Flt Permitted	0.968		0.950			
Satd. Flow (perm)	1743	0	1805	1881	1900	1599
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	57	146	94			94
Confl. Bikes (#/hr)						6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	1%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	0	103	685	647	212
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	96.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	145	75	95	630	595	195
Future Vol, veh/h	145	75	95	630	595	195
Conflicting Peds, #/hr	57	146	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	1	0	1
Mvmt Flow	158	82	103	685	647	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1689	887	953	0	-	0
Stage 1	741	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	~ 104	343	729	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 73	269	664	-	-	-
Mov Cap-2 Maneuver	~ 73	-	-	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	346	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 758.9	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	664	-	97	-	-
HCM Lane V/C Ratio	0.156	-	2.465	-	-
HCM Control Delay (s)	11.4	-	$ 758.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	21.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	60	15	75	95	105	25	440	70	115	530	80
Future Volume (vph)	20	60	15	75	95	105	25	440	70	115	530	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1840	0	0	1778	0	0	1862	0	0	1854	0
Flt Permitted		0.989			0.986			0.998			0.992	
Satd. Flow (perm)	0	1840	0	0	1778	0	0	1862	0	0	1854	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	103	0	0	299	0	0	581	0	0	788	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	100.1%	ICU Level of Service G	
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	193.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	60	15	75	95	105	25	440	70	115	530	80
Future Vol, veh/h	20	60	15	75	95	105	25	440	70	115	530	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	0	0
Mvmt Flow	22	65	16	82	103	114	27	478	76	125	576	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1549	1478	620	1480	1483	516	663	0	0	554	0	0
Stage 1	870	870	-	570	570	-	-	-	-	-	-	-
Stage 2	679	608	-	910	913	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	94	127	492	105	126	563	935	-	-	1021	-	-
Stage 1	349	372	-	510	509	-	-	-	-	-	-	-
Stage 2	445	489	-	332	355	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	98	492	~ 40	~ 97	563	935	-	-	1021	-	-
Mov Cap-2 Maneuver	-	98	-	~ 40	~ 97	-	-	-	-	-	-	-
Stage 1	334	299	-	489	488	-	-	-	-	-	-	-
Stage 2	268	468	-	202	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 1144	0.4	1.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	-	90	1021	-	-
HCM Lane V/C Ratio	0.029	-	-	-	3.321	0.122	-	-
HCM Control Delay (s)	9	0	-	-	$ 1144	9	0	-
HCM Lane LOS	A	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	29.9	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	205	40	60	275	0	0
Future Volume (vph)	205	40	60	275	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1822	0	0	1846	1863	0
Flt Permitted				0.991		
Satd. Flow (perm)	1822	0	0	1846	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	266	0	0	364	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	40	60	275	0	0
Future Vol, veh/h	205	40	60	275	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	223	43	65	299	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	674	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1298	-	420	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1298	-	395	794
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1298	-
HCM Lane V/C Ratio	-	-	-	0.05	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	200	5	0	335	0	0
Future Volume (vph)	200	5	0	335	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1857	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	0	0	364	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	5	0	335	0	0
Future Vol, veh/h	200	5	0	335	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	5	0	364	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	584	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	474	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	474	820
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1347	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	200	0	0	275	60	70
Future Volume (vph)	200	0	0	275	60	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1863	1687	0
Flt Permitted					0.977	
Satd. Flow (perm)	1863	0	0	1863	1687	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	0	0	299	141	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	0	0	275	60	70
Future Vol, veh/h	200	0	0	275	60	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	0	0	299	65	76

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	217	0	516	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1353	-	519	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1353	-	519	823
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	648	-	-	1353	-
HCM Lane V/C Ratio	0.218	-	-	-	-
HCM Control Delay (s)	12.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	265	5	5	265	10	10
Future Volume (vph)	265	5	5	265	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1859	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1859	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	0	0	293	22	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	5	5	265	10	10
Future Vol, veh/h	265	5	5	265	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	5	5	288	11	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	293	0	589	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	298	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1269	-	471	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	469	748
Mov Cap-2 Maneuver	-	-	-	-	469	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	749	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	577	-	-	1269	-
HCM Lane V/C Ratio	0.038	-	-	0.004	-
HCM Control Delay (s)	11.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	115	90	705	685	215
Future Volume (vph)	170	115	90	705	685	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1728	0	1805	1881	1881	1615
Flt Permitted	0.971		0.950			
Satd. Flow (perm)	1728	0	1805	1881	1881	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	44	83	42			42
Confl. Bikes (#/hr)						8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	0	98	766	745	234
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	145.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	115	90	705	685	215
Future Vol, veh/h	170	115	90	705	685	215
Conflicting Peds, #/hr	44	83	42	0	0	42
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	0	1	1	0
Mvmt Flow	185	125	98	766	745	234

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1793	870	1021	0	-	0
Stage 1	787	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	~ 89	352	688	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 70	311	660	-	-	-
Mov Cap-2 Maneuver	~ 70	-	-	-	-	-
Stage 1	368	-	-	-	-	-
Stage 2	341	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1006.9	1.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	660	-	102	-	-
HCM Lane V/C Ratio	0.148	-	3.037	-	-
HCM Control Delay (s)	11.4	-	$ 1006.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	29.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	45	10	75	60	125	10	280	50	125	350	30
Future Volume (vph)	25	45	10	75	60	125	10	280	50	125	350	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1840	0	0	1743	0	0	1860	0	0	1862	0
Flt Permitted		0.985			0.986			0.999			0.988	
Satd. Flow (perm)	0	1840	0	0	1743	0	0	1860	0	0	1862	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		354			190			269			235	
Travel Time (s)		8.0			4.3			6.1			5.3	
Confl. Peds. (#/hr)	2		2	2		2	9		12	12		9
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	283	0	0	369	0	0	549	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	36.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	45	10	75	60	125	10	280	50	125	350	30
Future Vol, veh/h	25	45	10	75	60	125	10	280	50	125	350	30
Conflicting Peds, #/hr	2	0	2	2	0	2	9	0	12	12	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	27	49	11	82	65	136	11	304	54	136	380	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1134	1070	408	1066	1059	345	422	0	0	370	0	0
Stage 1	678	678	-	365	365	-	-	-	-	-	-	-
Stage 2	456	392	-	701	694	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	181	223	648	202	226	700	1148	-	-	1200	-	-
Stage 1	445	455	-	658	627	-	-	-	-	-	-	-
Stage 2	588	610	-	433	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	93	184	641	137	186	691	1138	-	-	1186	-	-
Mov Cap-2 Maneuver	93	184	-	137	186	-	-	-	-	-	-	-
Stage 1	436	383	-	643	613	-	-	-	-	-	-	-
Stage 2	416	596	-	315	376	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	57	144.5	0.2	2.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	151	247	1186	-	-
HCM Lane V/C Ratio	0.01	-	-	0.576	1.144	0.115	-	-
HCM Control Delay (s)	8.2	0	-	57	144.5	8.4	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3	12.8	0.4	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	170	50	75	260	0	0
Future Volume (vph)	170	50	75	260	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1805	0	0	1842	1863	0
Flt Permitted				0.989		
Satd. Flow (perm)	1805	0	0	1842	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	190			91	153	
Travel Time (s)	4.3			2.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	0	0	365	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	50	75	260	0	0
Future Vol, veh/h	170	50	75	260	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	54	82	283	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	239	0	659	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1328	-	429	828
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1328	-	398	828
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1328	-
HCM Lane V/C Ratio	-	-	-	0.061	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	155	15	0	335	0	0
Future Volume (vph)	155	15	0	335	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1840	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1840	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	91			121	140	
Travel Time (s)	2.1			2.8	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	0	0	364	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	15	0	335	0	0
Future Vol, veh/h	155	15	0	335	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	16	0	364	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	184	0	540	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1391	-	503	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	503	867
Mov Cap-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1391	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	155	0	0	275	60	70
Future Volume (vph)	155	0	0	275	60	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1863	0	0	1863	1687	0
Flt Permitted					0.977	
Satd. Flow (perm)	1863	0	0	1863	1687	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	121			64	142	
Travel Time (s)	2.8			1.5	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	0	299	141	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	0	0	275	60	70
Future Vol, veh/h	155	0	0	275	60	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	0	0	299	65	76

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	168	0	467	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	554	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	554	876
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	1410	-
HCM Lane V/C Ratio	0.204	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	220	5	5	270	5	5
Future Volume (vph)	220	5	5	270	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1857	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1857	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	64			606	136	
Travel Time (s)	1.5			13.8	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	244	0	0	298	10	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	220	5	5	270	5	5
Future Vol, veh/h	220	5	5	270	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	239	5	5	293	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	244	0	545	242
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1322	-	499	797
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1322	-	497	797
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	612	-	-	1322	-
HCM Lane V/C Ratio	0.018	-	-	0.004	-
HCM Control Delay (s)	11	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	175	100	120	630	595	225
Future Volume (vph)	175	100	120	630	595	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	115			0
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Satd. Flow (prot)	1738	0	1805	1881	1900	1599
Flt Permitted	0.969		0.950			
Satd. Flow (perm)	1738	0	1805	1881	1900	1599
Link Speed (mph)	30			30	30	
Link Distance (ft)	606			269	302	
Travel Time (s)	13.8			6.1	6.9	
Confl. Peds. (#/hr)	57	146	94			94
Confl. Bikes (#/hr)						6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	1%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	299	0	130	685	647	245
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.3%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	173.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	175	100	120	630	595	225
Future Vol, veh/h	175	100	120	630	595	225
Conflicting Peds, #/hr	57	146	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	115	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	1	0	1
Mvmt Flow	190	109	130	685	647	245

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1743	887	986	0	-	0
Stage 1	741	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	~ 96	343	709	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 64	269	646	-	-	-
Mov Cap-2 Maneuver	~ 64	-	-	-	-	-
Stage 1	345	-	-	-	-	-
Stage 2	326	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1161.6	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	646	-	89	-	-
HCM Lane V/C Ratio	0.202	-	3.359	-	-
HCM Control Delay (s)	12	-	$ 1161.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	30	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Day \ Room	#1	#2	#3	#4	#5	#6	#7	#8
Monday	Grade 6 algebra 4:00-6:00	Grade 1 3:20-4:50	Grade 10 Precalc 4:15-6:45	Grade 2 3:15-5:15	Grade 4 3:30-5:30	Grade 6 algebra 3:50-5:50	Grade 6 algebra 3:40-5:40	Grade 8 geometry 3:45-5:15
	Grade 9 algebra 6:10-8:40	Grade 2 5:00-7:00	Grade 10 Trig 7:00-8:30	Grade 2 5:30-7:30	Grade 9 Algebra 5:40-8:10	Grade 7 geometry 6:00-7:30	Grade 6 geometry 5:50-6:50	Grade 8 algebra 5:30-8:00
Tuesday	#1	#2	#3	#4	#5	#6	#7	#8
	Kindergarten 3:00-4:30	Grade 7 algebra 3:30-6:00	Grade 1 3:30-5:00	Grade 5 3:20-5:20	Grade 3 3:20-5:20	Grade 5 3:50-5:50	Grade 2 3:50-5:50	Grade 6 algebra 3:40-5:40
	Kindergarten 4:45-6:15	Grade 7 algebra 6:10-8:40	Grade 2 5:10-7:10	Grade 3 5:35-7:35	Grade 4 5:30-7:30	Grade 6 algebra 6:00-8:00	Grade 6 geometry 6:00-7:00	Grade 8 algebra 5:50-8:20
Wednesday	#1	#2	#3	#4	#5	#6	#7	#8
	Grade 2 3:50-5:50	Grade 7 algebra 3:40-6:10	Grade 2 3:20-5:20	Grade 4 4:10-6:10	Grade 3 3:30-5:30	Kindergarten 3:30-5:00	Grade 5 3:40-5:40	Grade 7 algebra 3:50-5:20
	Grade 3 6:00-8:00	Grade 8 algebra 6:20-8:50	Grade 4 5:30-7:30	Grade 9 geometry 6:20-7:50	Grade 7 geometry 5:40-7:10	Grade 5 5:10-7:10	Grade 6 algebra 5:50-7:50	Grade 6 algebra 6:30-8:30
Thursday	#1	#2	#3	#4	#5	#6	#7	#8
	Grade 3 3:50-5:50	Grade 7 algebra 3:50-6:20	Grade 2 3:20-5:20	Grade 4 3:30-5:30	Grade 1 3:30-5:00	Grade 5 3:20-5:20	Grade 5 3:40-5:40	Grade 6 algebra 4:00-6:00
	Grade 4 6:00-8:00	Grade 6 algebra 6:30-8:30	Grade 3 5:30-7:30	Grade 4 5:40-7:40	Grade 3 5:15-7:15	Grade 5 5:30-7:30	Grade 6 geometry 5:50-6:50	Grade 10 precalc 6:10-8:40
							Grade 8 geometry 7:20-8:50	
Friday	#1	#2	#3	#4	#5	#6		#8
	Prek 3:30-4:30	Grade 7 algebra 3:00-5:30	Grade 2 3:00-5:00	Grade 1 3:10-4:40	Grade 3 2:50-4:50	Grade 3 3:30-5:30	Grade 4 2:50-4:50	Grade 7 geometry 3:45-5:15
	Kindergarten 4:40-6:10	Grade 5 5:40-7:40	Grade 2 5:10-7:10	Grade 1 4:50-6:20	Grade 4 5:00-7:00	Grade 5 5:40-7:40	Grade 6 algebra 5:00-7:00	Grade 6 geometry 5:25-6:25
								Grade 6 geometry 6:40-7:40
Saturday	#1	#2	#3	#4	#5	#6	#7	#8
	Grade 2 9:15-11:15	Grade 8 algebra 9:15-11:45	Grade 5 9:20-11:20	Kindergarten 9:00-10:30	Grade 9 algebra 9:10-11:40	Grade 6 algebra 9:20-11:20	Grade 6 algebra 9:00-11:00	
	Grade 1 11:30-1:00	Grade 8 geometry 11:45-1:15	Grade 2 11:30-1:30	Kindergarten 10:45-12:15	Grade 9 geometry 11:45-1:15	Grade 6 geometry 11:25-12:25	Grade 6 geometry 11:10-12:10	
	Grade 4 1:30-3:30	Grade 8 algebra 1:45-4:15	Grade 3 11:45:1:45	Grade 1 12:45-2:15	Grade 10 Precalc 1:45-4:15	Grade 7 geometry 12:55-2:25	Grade 4 1:15-3:15	
	Grade 5 3:40-5:40	Grade 8 geometry 4:15-5:45		Grade 3 2:30-4:30	Grade 10 trig 4:15-5:45	Grade 7 algebra 2:30-5:00		
Sunday	#1	#2	#3	#4	#5	#6	#7	#8
	Grade 1 9:15-10:45	Grade 3 9:00-11:00	Prek 11:00-12:00	Grade 4 9:45-11:45	Grade 7 algebra 9:10-11:40	Grade 4 9:10-11:10	Grade 6 algebra 10:00-12:00	
	Grade 3 11:00-1:00	Grade 4 11:10-1:10	Grade 2 12:10-2:10	Grade 2 12:00-2:00	Grade 7 geometry 11:50-1:20	Grade 5 11:20-1:20	Grade 6 geometry 12:10-1:10	
	Grade 1 1:30-3:00	Kindergarten 1:30-3:00	Grade 1 2:25-3:55		Grade 3 1:50-3:50	Grade 8 algebra 1:50-4:20	Grade 9 algebra 1:40-4:10	
	Kindergarten 3:15-4:45				Grade 7 algebra 4:00-6:30	Grade 8 geometry 4:30-6:00	Grade 9 geometry 4:15-5:45	

Weekday Schedule

	Monday		Tuesday		Wednesday		Thursday		Friday					
Time of Day	Drop-Off	Pick-Up	Drop-Off	Pick-Up	Drop-Off	Pick-Up	Drop-Off	Pick-Up	Drop-Off	Pick-Up	Total (M-F)	HR Total (M-F)	Total (T-Th)	HR Total (T-TH)
2:50 PM									20		20		0	
2:55 PM											0		0	
3:00 PM			10						20		30		10	
3:05 PM											0		0	
3:10 PM									10		10		0	
3:15 PM	10										10		0	
3:20 PM	10		20		10		20				60		50	
3:25 PM											0		0	
3:30 PM	10		20		20		20		20		90		60	
3:35 PM											0		0	
3:40 PM	10		10		20		10				50		40	
3:45 PM	10								10		20	290	0	160
3:50 PM	10		20		20		20				70	340	60	220
3:55 PM											0	340	0	220
4:00 PM	10						10				20	330	10	220
4:05 PM											0	330	0	220
4:10 PM					10						10	330	10	230
4:15 PM	10										10	330	0	230
4:20 PM											0	270	0	180
4:25 PM											0	270	0	180
4:30 PM				10						10	20	200	10	130
4:35 PM											0	200	0	130
4:40 PM									10	10	20	170	0	90
4:45 PM			10								10	160	10	100
4:50 PM		10							10	20	40	130	0	40
4:55 PM											0	130	0	40
5:00 PM	10			10		10		10	20	10	70	180	30	60
5:05 PM											0	180	0	60
5:10 PM			10		10				10		30	200	20	70
5:15 PM		20					10			10	40	230	10	80
5:20 PM				20		20		20			60	290	60	140
5:25 PM									10		10	300	0	140
5:30 PM	20	10	10		10	10	20	10		20	110	390	60	190
5:35 PM			10								10	400	10	200
5:40 PM	10	10		10	10	10	10	10	20		90	470	50	250
5:45 PM											0	460	0	240
5:50 PM	10	10	10	20	10	10	10	10			90	510	70	310
5:55 PM											0	510	0	310
6:00 PM	10	10	20	10	10		10	10			80	520	60	340
6:05 PM											0	520	0	340
6:10 PM	10		10			20	10			10	60	550	40	360
6:15 PM				10							10	520	10	360
6:20 PM					20			10		10	40	500	30	330
6:25 PM										10	10	500	0	330
6:30 PM					10		10				20	410	20	290
6:35 PM											0	400	0	280
6:40 PM									10		10	320	0	230
6:45 PM		10									10	330	0	230
6:50 PM		10						10			20	260	10	170
6:55 PM											0	260	0	170
7:00 PM	10	10		10						20	50	230	10	120
7:05 PM											0	230	0	120
7:10 PM				10		20				10	40	210	30	110
7:15 PM								10			10	210	10	110
7:20 PM							10				10	180	10	90
7:25 PM											0	170	0	90
7:30 PM		20		10		10		20			60	210	40	110
7:35 PM				10							10	220	10	120
7:40 PM								10		30	40	250	10	130
7:45 PM											0	240	0	130
7:50 PM						20					20	240	20	140
7:55 PM											0	240	0	140
8:00 PM		10		10		10		10			40	230	30	160
8:05 PM											0	230	0	160
8:10 PM		10									10	200	0	130
8:15 PM											0	190	0	120
8:20 PM				10							10	190	10	120
8:25 PM											0	190	0	120
8:30 PM		10				10		10			30	160	20	100
8:35 PM											0	150	0	90
8:40 PM		10		10				10			30	140	20	100
8:45 PM											0	140	0	100
8:50 PM						10		10			20	140	20	100
Total		320		320		320		340		340				
Daily Average	328													

Peak Hour	Max (total)	Peak Hour
M-F	550	5:15 - 6:15 PM
M-T	360	5:15 - 6:15 PM

Identify each peak 15 min period/ each day
Create aerial queue diagrams

Austin Street Summary Tables - No Reduction/ VOR Applied

Mon-Fri Peak Hour Number of Students

	Mon	Tues	Wed	Thurs	Fri	Avg (M-F)
5:15 PM	0	20	20	30	20	**18**
5:30 PM	50	30	40	50	40	**42**
5:45 PM	20	30	20	20	0	**18**
6:00 PM	30	40	30	30	10	**28**
Total	100	120	110	130	70	**106**

Tues-Thurs Peak Hour Number of Students

	Tues	Wed	Thurs	Avg (T-Th)
5:15 PM	20	20	30	23
5:30 PM	30	40	50	40
5:45 PM	30	20	20	23
6:00 PM	40	30	30	33
Total	120	110	130	**120**

Mon-Fri Drop-Off/Pick-Up Peak Hour Number of Students

	Mon		Tues		Wed		Thurs		Fri		Avg (M-F)	
	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up
5:15 PM	0	0	0	20	0	20	10	20	10	10	4	14
5:30 PM	30	20	20	10	20	20	30	20	20	20	24	18
5:45 PM	10	10	10	20	10	10	10	10	0	0	8	10
6:00 PM	20	10	30	10	10	20	20	10	0	10	16	12
Total	60	40	60	60	40	70	70	60	30	40	**52**	**54**

Tues-Thurs Drop-Off/Pick-Up Peak Hour Number of Students

	Tues		Wed		Thurs		Avg (T-Th)	
	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up
5:15 PM	0	20	0	20	10	20	3	20
5:30 PM	20	10	20	20	30	20	23	17
5:45 PM	10	20	10	10	10	10	10	13
6:00 PM	30	10	10	20	20	10	20	13.33333
Total	60	60	40	70	70	60	**57**	**63**

5 Min Time Periods with >30 Vehicles

	Mon	Tues	Wed	Thurs	Fri
4:50 - 4:55 PM	10	0	0	0	30
5:00 - 5:05 PM	10	10	10	10	30
5:30 - 5:35 PM	30	10	20	30	20
5:50 - 5:55 PM	20	30	20	20	0
6:00 - 6:05 PM	20	30	10	20	0
7:40 - 7:45 PM	0	0	0	10	30

Peak 15 min Period

	Mon	Tues	Wed	Thurs	Fri
Vol	50	60	40	50	60
Time	5:30 - 5:45 PM	5:50 - 6:05 PM	3:40 - 3:55 PM	5:20 - 5:35 PM	4:50 - 5:05 PM
			3:50 - 4:05 PM	5:30 - 5:45 PM	
			5:20 - 5:35 PM		
			5:30 - 5:45 PM		
			5:40 - 5:55 PM		
			6:10 - 6:25 PM		

Austin Street Summary Tables - 25% Reduction Applied

Mon-Fri Peak Hour Number of Students

	Mon	Tues	Wed	Thurs	Fri	Avg (M-F)
5:15 PM	0	15	15	23	16	**14**
5:30 PM	38	23	30	38	30	**32**
5:45 PM	16	23	16	16	0	**14**
6:00 PM	23	31	23	23	8	**22**
Total	77	92	84	100	54	**82**

Tues-Thurs Peak Hour Number of Students

	Tues	Wed	Thurs	Avg (T-Th)
5:15 PM	15	15	23	18
5:30 PM	23	30	38	30
5:45 PM	23	16	16	18
6:00 PM	31	23	23	26
Total	92	84	100	**92**

Mon-Fri Drop-Off/Pick-Up Peak Hour Number of Students

	Mon		Tues		Wed		Thurs		Fri		Avg (M-F)	
	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up
5:15 PM	0	0	0	15	0	15	8	15	8	8	3	11
5:30 PM	23	15	15	8	15	15	23	15	15	15	18	14
5:45 PM	8	8	8	15	8	8	8	8	0	0	6	8
6:00 PM	15	8	23	8	8	15	15	8	0	8	12	9
Total	46	31	46	46	31	53	54	46	23	31	**39**	**42**

Tues-Thurs Drop-Off/Pick-Up Peak Hour Number of Students

	Tues		Wed		Thurs		Avg (T-Th)	
	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up	Drop-off	Pick-up
5:15 PM	0	15	0	15	8	15	3	15
5:30 PM	15	8	15	15	23	15	18	13
5:45 PM	8	15	8	8	8	8	8	10
6:00 PM	23	8	8	15	15	8	15	10
Total	46	46	31	53	54	46	**44**	**48**

5 Min Time Periods with >30 Vehicles - Adj for 36% Reduction

	Mon	Tues	Wed	Thurs	Fri
4:50 - 4:55 PM	8	0	0	0	23
5:00 - 5:05 PM	8	8	8	8	23
5:30 - 5:35 PM	23	8	15	23	15
5:50 - 5:55 PM	15	23	15	15	0
6:00 - 6:05 PM	15	23	8	15	0
7:40 - 7:45 PM	0	0	0	8	23

Peak 15 min Period

	Mon	Tues	Wed	Thurs	Fri
Vol	38	45	30	38	45
Time	5:30 - 5:45 PM	5:50 - 6:05 PM	3:40 - 3:55 PM	5:20 - 5:35 PM	4:50 - 5:05 PM
			3:50 - 4:05 PM	5:30 - 5:45 PM	
			5:20 - 5:35 PM		
			5:30 - 5:45 PM		
			5:40 - 5:55 PM		
			6:10 - 6:25 PM		

Note: 25% reduction applied based on assumed carpooling between students (siblings, carpool, etc)

Weekend Schedule

	Satuday		Sunday					
Time of Day	Drop-Off	Pick-Up	Drop-Off	Pick-Up	Total (Sat)	HR Total (Sat)	Total (Sat-Sun)	HR Total (Sat-Sun)
9:00 AM	20		10		20		30	
9:05 AM					0		0	
9:10 AM	10		20		10		30	
9:15 AM	20		10		20		30	
9:20 AM	20				20		20	
9:25 AM					0		0	
9:30 AM					0		0	
9:35 AM					0		0	
9:40 AM					0		0	
9:45 AM			10		0		10	
9:50 AM					0		0	
9:55 AM					0	70	0	120
10:00 AM			10		0	50	10	100
10:05 AM					0	50	0	100
10:10 AM					0	40	0	70
10:15 AM					0	20	0	40
10:20 AM					0	0	0	20
10:25 AM					0	0	0	20
10:30 AM		10			10	10	10	30
10:35 AM					0	10	0	30
10:40 AM					0	10	0	30
10:45 AM	10			10	10	20	20	40
10:50 AM					0	20	0	40
10:55 AM					0	20	0	40
11:00 AM		10	20	10	10	30	40	70
11:05 AM					0	30	0	70
11:10 AM	10		10	10	10	40	30	100
11:15 AM		10			10	50	10	110
11:20 AM		20	10		20	70	30	140
11:25 AM	10				10	80	10	150
11:30 AM	20				20	90	20	160
11:35 AM					0	90	0	160
11:40 AM		10		10	10	100	20	180
11:45 AM	30	10		10	40	130	50	210
11:50 AM			10		0	130	10	220
11:55 AM					0	130	0	220
12:00 PM			10	20	0	120	30	210
12:05 PM					0	120	0	210
12:10 PM		10	20		10	120	30	210
12:15 PM		10			10	120	10	210
12:20 PM					0	100	0	180
12:25 PM		10			10	100	10	180
12:30 PM					0	80	0	160
12:35 PM					0	80	0	160
12:40 PM					0	70	0	140
12:45 PM	10				10	40	10	100
12:50 PM					0	40	0	90
12:55 PM	10				10	50	10	100
1:00 PM		10		10	10	60	20	90
1:05 PM					0	60	0	90
1:10 PM				20	0	50	20	80
1:15 PM	10	20			30	70	30	100
1:20 PM				20	0	70	20	120
1:25 PM					0	60	0	110
1:30 PM	10	10	20		20	80	40	150
1:35 PM					0	80	0	150
1:40 PM			10		0	80	10	160
1:45 PM	20	10			30	100	30	180
1:50 PM			20		0	100	20	200
1:55 PM					0	90	0	190
2:00 PM				10	0	80	10	180
2:05 PM					0	80	0	180
2:10 PM				10	0	80	10	170
2:15 PM		10			10	60	10	150
2:20 PM					0	60	0	130
2:25 PM		10	10		10	70	20	150
2:30 PM	20				20	70	20	130
2:35 PM					0	70	0	130
2:40 PM					0	70	0	120
2:45 PM					0	40	0	90
2:50 PM					0	40	0	70
2:55 PM					0	40	0	70
3:00 PM				20	0	40	20	80
3:05 PM					0	40	0	80
3:10 PM					0	40	0	70
3:15 PM		10	10		10	40	20	80
3:20 PM					0	40	0	80
3:25 PM					0	30	0	60
3:30 PM		10			10	20	10	50
3:35 PM					0	20	0	50
3:40 PM	10				10	30	10	60
3:45 PM					0	30	0	60
3:50 PM				10	0	30	10	70
3:55 PM				10	0	30	10	80
4:00 PM			10		0	30	10	70
4:05 PM					0	30	0	70
4:10 PM				10	0	30	10	80
4:15 PM	20	20	10		40	60	50	110
4:20 PM				10	0	60	10	120
4:25 PM					0	60	0	120
4:30 PM		10	10		10	60	20	130
4:35 PM					0	60	0	130
4:40 PM					0	50	0	120
4:45 PM				10	0	50	10	130
4:50 PM					0	50	0	120
4:55 PM					0	50	0	110
5:00 PM		10			10	60	10	110
5:05 PM					0	60	0	110
5:10 PM					0	60	0	100
5:15 PM					0	20	0	50
5:20 PM					0	20	0	40
5:25 PM					0	20	0	40
5:30 PM					0	10	0	20
5:35 PM					0	10	0	20
5:40 PM		10			10	20	10	30
5:45 PM		20		10	20	40	30	50
5:50 PM					0	40	0	50
5:55 PM					0	40	0	50
6:00 PM				10	0	30	10	50
6:05 PM					0	30	0	50
6:10 PM					0	30	0	50
6:15 PM					0	30	0	50
6:20 PM					0	30	0	50
6:25 PM					0	30	0	50
6:30 PM				10	0	30	10	60

Total 520

Peak Hour	Max (total)	Peak Hour
Sat	130	11:00 AM - 12:00 PM
Sat-Sun	220	11:00 AM - 12:00 PM

Austin Street Summary Tables - No Reduction/ VOR Applied

Sat Peak Hour Number of Students	
	Sat
11:00 AM	20
11:15 AM	40
11:30 AM	30
11:45 AM	40
Total	**130**

Sat Drop-Off/Pick-Up Peak Hour Number of Students		
	Sat	
	Pick-up	Drop Off
11:00 AM	10	10
11:15 AM	10	30
11:30 AM	20	10
11:45 AM	30	10
Total	**70**	**60**

Weekend Peak Hour Number of Students			
	Sat	Sun	**Avg (Sat-Sun)**
11:00 AM	20	50	**35**
11:15 AM	40	10	**25**
11:30 AM	30	10	**20**
11:45 AM	40	20	**30**
Total	130	90	**110**

Weekend Drop-Off/Pick-Up Peak Hour Number of Students				
	Sat		Sun	
	Pick-up	Drop Off	Pick-up	Drop Off
11:00 AM	10	10	30	20
11:15 AM	10	30	10	0
11:30 AM	20	10	0	10
11:45 AM	30	10	10	10
Total	**70**	**60**	**50**	**40**

5 Min Time Periods with >30 Vehicles		
	Sat	Sun
11:00 - 11:05 AM	10	30
11:45 - 11:50 AM	40	10
12:00 - 12:05 PM	0	30
1:15 - 1:20 PM	30	0
1:45 - 1:50 PM	30	0
4:15 - 4:20 PM	40	10

Peak 15 min Period		
	Sat	Sun
Vol	50	50
Time	9:10 - 9:25 AM	11:00 - 11:15 AM
	11:20 - 11:35 AM	12:00 - 12:15 PM
	11:35 - 11:50 AM	
	11:40 - 11:55 AM	

Austin Street Summary Tables - 25% Reduction Applied

Sat Peak Hour Number of Students	
	Sat
11:00 AM	15
11:15 AM	30
11:30 AM	23
11:45 AM	30
Total	**98**

Sat Drop-Off/Pick-Up Peak Hour Number of Students		
	Sat	
	Pick-up	Drop Off
11:00 AM	7.5	7.5
11:15 AM	7.5	22.5
11:30 AM	15	7.5
11:45 AM	22.5	7.5
Total	**53**	**45**

Weekend Peak Hour Number of Students			
	Sat	Sun	**Avg (Sat-Sun)**
11:00 AM	15	38	**27**
11:15 AM	30	8	**19**
11:30 AM	23	8	**16**
11:45 AM	30	15	**23**
Total	98	69	**85**

Weekend Drop-Off/Pick-Up Peak Hour Number of Students				
	Sat		Sun	
	Pick-up	Drop Off	Pick-up	Drop Off
11:00 AM	7.5	7.5	22.5	15
11:15 AM	7.5	22.5	7.5	0
11:30 AM	15	7.5	0	7.5
11:45 AM	22.5	7.5	7.5	7.5
Total	**53**	**45**	**38**	**30**

5 Min Time Periods with >30 Vehicles		
	Sat	Sun
11:00 - 11:05 AM	8	23
11:45 - 11:50 AM	30	8
12:00 - 12:05 PM	0	23
1:15 - 1:20 PM	23	0
1:45 - 1:50 PM	23	0
4:15 - 4:20 PM	30	8

Peak 15 min Period		
	Sat	Sun
Vol	38	38
Time	9:10 - 9:25 AM	11:00 - 11:15 AM
	11:20 - 11:35 AM	12:00 - 12:15 PM
	11:35 - 11:50 AM	
	11:40 - 11:55 AM	

Note: 36% reduction applied based on assumed carpooling between students (siblings, carpool, etc)