

EXECUTIVE SUMMARY

REF: NEX-2020177.00

DATE: March 21, 2022

TO: Nouria Energy Corp.
c/o Michael Durant
326 Clark Street
Worcester, Massachusetts 01606

FROM: Ms. Heather L. Monticup, P.E., Director of Traffic Engineering – Land Development
Ms. Susannah E. Theriault, P.E., Project Engineer

RE: Traffic Impact Study
Site Redevelopment
356 Lowell Street – Wakefield, Massachusetts

EXECUTIVE SUMMARY

Greenman-Pedersen, Inc. (GPI) has prepared this *Traffic Impact Study* (TIS) for a proposed redevelopment of the site at 356 Lowell Street in Wakefield, Massachusetts. The site currently occupies a Shell Station having three (3) Multi-Product Dispensers (MPDs) with six (6) Vehicle Fueling Positions (VFPS) with a 1,994 square foot (SF) building that houses a Service Station (3 bays) and Snack Shop. The redevelopment consists of razing the existing structures on the site and constructing a 5,000 SF building (4,121 SF gas station/convenience store with an 879 SF walk-up coffee/donut shop and six (6) MPDs with twelve (12) VFPS). Four (4) curb cuts currently provide access and egress to the site; two (2) on Lowell Street and two (2) on Vernon Street. As part of the redevelopment, access/egress on Lowell Street will be reduced to one driveway and the driveways on Vernon Street will remain. The site is bounded by the Dolbeare School to the north and west, Lowell Street to the south, and Vernon Street to the east.

Existing Conditions

Base traffic conditions within the study area were developed by conducting manual-turning movement counts (TMCs) and vehicle classification counts on Wednesday, May 12, 2021. The TMCs and vehicle classification counts were performed during the weekday AM peak period (7:00 to 9:00 AM) and weekday PM peak period (2:00 to 6:00 PM). The network peak hours are 8:00 to 9:00 AM and 3:15 to 4:15 PM.

Due to the COVID-19 pandemic, current traffic volumes vary from typical conditions, and therefore, traffic volumes at a nearby MassDOT continuous count station (Station 4423) in Wakefield on Route 128, north of Route 129 were reviewed. Based on the traffic comparison, the May traffic volumes on the week before, week of, and week after the counts were performed are 3.2 percent lower than the pre-pandemic traffic volumes. The actual day of the traffic counts (Wednesday, May 12, 2021) was 3.9 percent lower than the Wednesday of the second full week in May of 2019. Accordingly, the 2021 traffic counts were increased by 4.0 percent during the weekday peak hours to reflect pre-COVID-19 pandemic conditions.

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. To determine if the May traffic-volume data needed to be adjusted to account for this fluctuation, historical traffic-volume data were reviewed from the MassDOT records.¹ This information revealed that May traffic volumes are approximately 3.8 percent higher than average-month conditions. Therefore, the May traffic volumes were not seasonally adjusted to reflect an above average-month analysis condition.

Observations were also made at the Dolbeare Elementary School driveways on Lowell Street and Vernon Street during the drop-off and pick-up hours. Based on observations, the drop-off and pick-up periods last about 20 minutes before returning to typical conditions. The morning drop-off was busiest between 8:10 AM and 8:30 AM and the afternoon pick-up was busiest between 2:15 PM and 2:35 PM. However, in the fall of 2021, the schedule is anticipated to be 8:30 AM to 2:45 PM, so those periods will shift slightly. It should be noted that during drop-off and pick-up, the Shell gas station (project site) on the corner of Lowell Street and Vernon Street is used as an overflow parking lot. During the drop-off period observed in the morning, the Lowell Street enter-only driveway experienced one vehicle queuing onto Lowell Street. The vehicle queued up on the shoulder, allowing westbound traffic to continue to flow. The Vernon Street enter-only driveway experienced queuing onto Vernon Street for about five minutes. Vehicles turning right into the school driveway were able to wait in the shoulder, allowing southbound traffic to continue to flow. During the pick-up period observed in the afternoon, vehicles park along the shoulders on Lowell Street and Vernon Street. Vehicles leave in a staggard manner, and within 20 minutes of dismissal most vehicles have left.

Collision data were obtained from MassDOT for the latest five years available (2014 through 2018) within the study area. The signalized intersection of Lowell Street at Vernon Street experienced an average of approximately 1.0 collision per year with a crash rate of 0.20 c/mev which is less than the Statewide (0.78 c/mev) and District 4 (0.73 c/mev) average for signalized intersections. The Lowell Street corridor, from the western driveway of the Dolbeare School to the signalized intersection with Vernon Street, experienced an average of 1.2 collisions per year with a crash rate of 3.42 c/mvmt which is less than the Statewide average (3.49 c/mvmt) for urban minor arterials. The Vernon Street corridor, from the northern driveway of the Dolbeare School to the signalized intersection with Lowell Street, did not experience any collisions within the latest five years of available data.

Future Conditions

To estimate the impact of site-generated traffic within the study area, existing traffic volumes were projected to the year 2028, representing a seven-year design horizon in accordance with state guidelines. The 2028 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (7.2 percent over seven years) to the 2021 Existing traffic volumes and adding the trips associated with a proposed mixed-use development in the area.

The MBTA is making improvements to the intersection of Lowell Street at Vernon Street. The design engineer, McMahon, is expecting to move to 100% design plans in March 2022. The improvements include re-constructing the ramps on all corners of the intersection, improving the bus stop on Vernon Street south of Lowell Street, and updating the pedestrian phase at the signal.

Traffic to be generated by the proposed development was forecast using trip rates contained in the ITE *Trip Generation, 11th Edition*² for Land Use Code (LUC) 945 (Convenience Store/Gas Station) and LUC 936 (Coffee/Donut Shop without Drive-Through Window).

¹ MassDOT Transportation Data Management System; Station 5099 (Route 128, south of Walnut Street– Wakefield).

² *Trip Generation, 11th Edition*. Institute of Transportation Engineers; Washington, DC; 2021.

Studies have shown that for developments of mixed-use or multi-use sites, it is realistic to assume that there will be some multi-use trips within the site itself. For example, someone fueling their vehicle may also stop at the coffee shop. Therefore, a reduction in the overall trips experienced at the site driveways can be anticipated as a result of multi-use trips that include stops at more than one use on the site. Based on information published in the ITE *Trip Generation Handbook*³, *Procedure for Estimating Multi-Use Trip Generation*, it is estimated that multi-use trips account for 8 percent of weekday daily, 13 percent of weekday AM peak hour, and 7 percent of weekday PM peak hour trips generated by the site.

Not all of the vehicle trips expected to be generated by the proposed development represent *new* trips on the study area roadway system. Studies have shown that for developments such as the one proposed, a substantial portion of the site-generated vehicle trips are already present in the adjacent passing stream of traffic. Based on information published in the ITE *Trip Generation Handbook*, the average *pass-by* trip percentage is 76 percent during the weekday AM and 75 percent during the weekday PM peak hour for LUC 945 (Convenience Store/Gas Station) and 50 percent during the weekday AM peak hour and 55 percent during the weekday PM peak hour for LUC 934 (Fast-Food Restaurant with Drive-Through Window).

The proposed redevelopment is expected to generate 62 additional *new* vehicles trips (21 entering and 41 exiting) during the weekday AM peak hour and 53 additional *new* vehicles trips (26 entering and 27 exiting) during the weekday PM peak hour. Traffic-volume increases beyond the study area during the peak hours are expected to be in the range of 12 to 16 vehicles trips. These slight increases represent, on average, one additional vehicle trip approximately every 3.75 to 5 minutes during the peak hours.

Capacity and Queue Analysis

Capacity and queue analyses were conducted at all study area locations under 2021 Existing, 2028 No-Build, and 2028 Build traffic-volume conditions. The impact of site-generated traffic can be measured by comparing 2028 No-Build conditions to 2028 Build conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM)⁴. The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers.

Lowell Street at Vernon Street

Under existing traffic-volume conditions, the signalized intersection operates at an overall LOS E during the weekday AM peak hour and LOS D during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday AM. Under the future conditions, the MBTA project improvements will be implemented, including a slight extension in the exclusive pedestrian phase, and slightly longer yellow and red clearance times. With these safety improvements and the increase in traffic as a result of background growth, operations at the intersection drop to an overall LOS F during the weekday AM peak hour and LOS E during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday PM peak hour as well.

As a result of the redevelopment project, the overall intersection drops from LOS E to LOS F during the weekday PM peak hour with no drops in LOS at any particular movement during either peak hour. This drop to the overall intersection is a result of adding a minimal amount of traffic to the already over capacity Vernon Street southbound approach. The project redevelopment is expected to add 31 vehicle trips (weekday AM) and 26 vehicle trips (weekday PM) to the entire intersection during the peak hours, equating to one additional vehicle every 1.9 to 2.3 minutes. On average, this is at most one additional vehicle trip per signal cycle during the weekday peak hours. The video detection is currently not working,

³ *Trip Generation Handbook*; 3rd Edition; Institute of Transportation Engineers; Washington, DC; August 2014.

⁴ *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.

and therefore, the signal operates as pre-timed with fixed signal phases. Under actuated signal control, where time for each phase is at least partially controlled by detector actuations, the overall intersection operates at LOS C with all movements at LOS C or better and all approaches operating under capacity.

Lowell Street at Site Driveways

Under existing and future traffic-volume conditions, all movements at the intersection of Lowell Street and site driveways operate at LOS C or better with volume-to-capacity (v/c) ratios below 1.00 and queue lengths of one vehicle or less. With the redevelopment project, the existing driveways on Lowell Street are proposed to be closed and a new one is proposed in between the existing driveway locations. Although the eastbound queue from the traffic signal is expected to block the Lowell Street driveway when this approach has a red signal, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

Vernon Street at Site Driveways

Under existing and future traffic-volume conditions, all movements at the intersection of Vernon Street and site driveways operate at LOS C or better with v/c ratios below 1.00 and queue lengths of one vehicle or less. Again, although the southbound queue from the traffic signal is expected to block the Vernon Street driveways when this approach has a red signal, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

Conclusion

Based on the findings above, the proposed redevelopment is expected to increase the traffic at the adjacent signalized intersection by two percent during the weekday peak hours, which is representative of a typical daily fluctuation of traffic. The intersection has existing capacity constraints, and the additional traffic as a result of the redevelopment does worsen operations. The video detection is currently not working, and therefore, the signal operates as pre-timed with fixed signal phases. Under actuated signal control, where time for each phase is at least partially controlled by detector actuations, the operations at the signal are expected to improve significantly.

Although queueing from the adjacent traffic signal is expected to block the site driveways when the particular approach has a red light, which is common at all developments on a signalized corner, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

TRAFFIC IMPACT STUDY

SITE REDEVELOPMENT WAKEFIELD, MASSACHUSETTS



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SUBMITTED TO:

Nouria Energy Corp
326 Clark Street
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March 2022

(GPI Project No.: NEX-2020177.00)

***Nouria Energy Corp
Site Redevelopment
Traffic Impact Study
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TECHNICAL MEMORANDUM

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TO: Nouria Energy Corp.
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FROM: Ms. Heather L. Monticup, P.E., Director of Traffic Engineering – Land Development
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RE: Traffic Impact Study
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356 Lowell Street – Wakefield, Massachusetts

INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this *Traffic Impact Study* (TIS) for a proposed redevelopment of the site at 356 Lowell Street in Wakefield, Massachusetts. The site currently occupies a Shell Station having three (3) Multi-Product Dispensers (MPDs) with six (6) Vehicle Fueling Positions (VFPS) with a 1,994 square foot (SF) building that houses a Service Station (3 bays) and Snack Shop. The redevelopment consists of razing the existing structures on the site and constructing a 5,000 SF building (4,121 SF gas station/convenience store with an 879 SF walk-up coffee/donut shop and six (6) MPDs with twelve (12) VFPS). Four (4) curb cuts currently provide access and egress to the site; two (2) on Lowell Street and two (2) on Vernon Street. As part of the redevelopment, access/egress on Lowell Street will be reduced to one driveway and the driveways on Vernon Street will remain.

The site is bounded by the Dolbeare School to the north and west, Lowell Street to the south, and Vernon Street to the east. The site location in relation to the surrounding roadways is shown on the map on Figure 1. This TIS evaluates the traffic impacts for the proposed redevelopment.

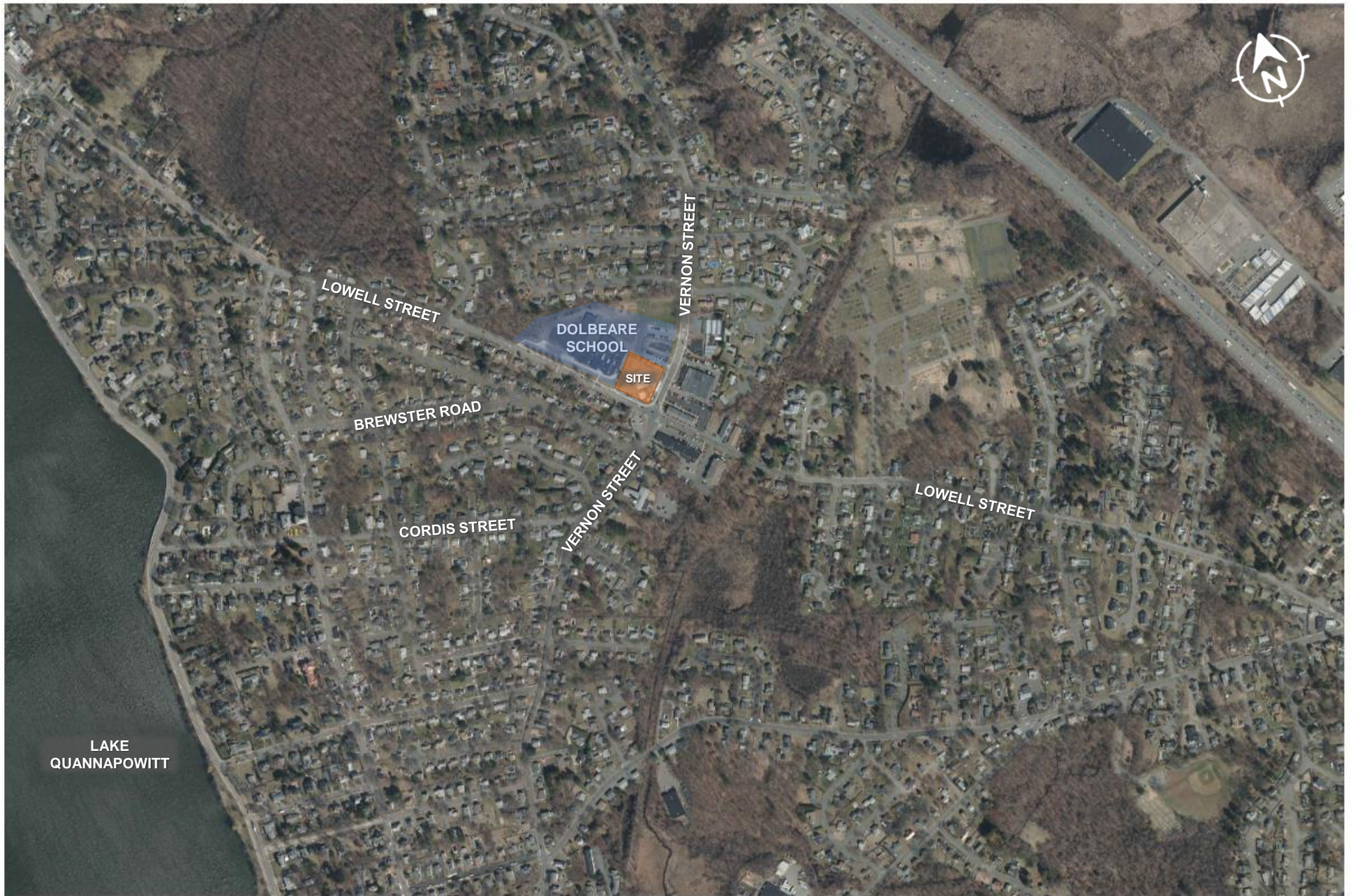


FIGURE I — SITE LOCATION MAP

EXISTING CONDITIONS

Study Area

Evaluation of the traffic impacts associated with the proposed project requires an evaluation of existing and projected traffic volumes on the adjacent street, the volume of traffic expected to be generated by the project, and the impact that this traffic will have on the adjacent street. In preparing the TIS for the proposed site, the following intersections have been analyzed and evaluated based on coordination with the Town of Wakefield and the Town's peer review consultant, Vanasse Hangen Brustlin, Inc. (VHB):

- Lowell Street at Vernon Street – signalized
- Lowell Street at Western Site Driveway
- Lowell Street at Eastern Site Driveway
- Vernon Street at Northern Site Driveway
- Vernon Street at Southern Site Driveway

Additional observations at the following intersections have been made per the request of VHB:

- Lowell Street at Dolbeare Elementary School Western Site Driveway
- Lowell Street at Dolbeare Elementary School Eastern Site Driveway
- Vernon Street at Dolbeare Elementary School Northern Site Driveway
- Vernon Street at Dolbeare Elementary School Southern Site Driveway

Lowell Street

Lowell Street in the vicinity of the site is under the jurisdiction of the Town of Wakefield and is classified as an urban minor arterial. Lowell Street is an east-west roadway and has a posted speed limit of 30 miles per hour (mph) and a school zone speed limit of 20 mph just west of the project site. Adjacent to the project site, Lowell Street provides one lane in each direction and directional travel is separated by a double yellow center line. In the vicinity of the project site, a sidewalk and 5-foot shoulders which can accommodate bicycles are provided on both sides of the roadway. Land uses along Lowell Street consist of commercial and residential uses.

Vernon Street

Vernon Street in the vicinity of the site is under the jurisdiction of the Town of Wakefield and is classified as an urban minor arterial. Vernon Street is a north-south roadway and has a posted speed limit of 30 miles per hour (mph) and a school zone speed limit of 20 mph just north of the project site. Adjacent to the project site, Vernon Street provides one lane in each direction and directional travel is separated by a double yellow center line. In the vicinity of the project site, a sidewalk and 4-foot shoulders which can accommodate bicycles are provided on both sides of the roadway. Land uses along Vernon Street consist of commercial and residential uses.

Lowell Street at Vernon Street

Vernon Street intersects Lowell Street from the north and south to form a four-way, signalized intersection. The Lowell Street eastbound and westbound approach consists of a general-purpose lane. The Vernon Street northbound approach consists of a shared left-turn / through lane and a channelized right-turn lane separated by a median island. The northbound right-turn movement operates under the traffic signal control. The Vernon Street southbound approach consists of a general-purpose lane. Crosswalks are provided across all four approaches and the channelized northbound right-turn lane. Sidewalks with

wheelchair ramps are provided at the intersection. The video detection is currently not working, accordingly, the signal operates as pre-timed. The Lowell Street eastbound/westbound approaches run first, followed by the Vernon Street northbound/southbound approaches, ending with the exclusive pedestrian phase. Based on a signal inventory performed by VHB in 2016, the controller is in poor condition, the video detection is not working, and the tether on the span wire is broken. As of 2016, new Accessible Pedestrian Signal (APS) buttons and new countdown pedestrian signal heads were installed. Improvements to the pedestrian ramps and pedestrian signal timings at the intersection are included as part of the Massachusetts Bay Transportation Authority (MBTA) improvements project discussed in the *Proposed Roadway Improvements* section of this study.

Public Transportation

The MBTA Bus Line 137 provides service from Reading Depot in Reading to Malden Center Station in Malden. A bus stop for Line 137 is located on Vernon Street just south of the Lowell Street intersection and on Lowell Street at the Dolbeare Elementary School, just west of the proposed project site. Service is provided on weekdays from 4:49 AM to 11:00 PM, Saturdays from 6:00 AM to 9:28 PM, and Sundays from 8:00 AM to 5:46 PM. Malden Center Station provides connection to the Orange Subway line (which runs from Oak Grove in Malden to Forest Hills in Jamaica Plain via Boston) and the Haverhill Commuter Rail line (which runs from Haverhill to North Station in Boston). All public transportation information for the Bus Line 137 is provided in the Appendix.

Traffic Volumes

Base traffic conditions within the study area were developed by conducting manual-turning movement counts (TMCs) and vehicle classification counts on Wednesday, May 12, 2021. The TMCs and vehicle classification counts were performed during the weekday AM peak period (7:00 to 9:00 AM) and weekday PM peak period (2:00 to 6:00 PM). The network peak hours are 8:00 to 9:00 AM and 3:15 to 4:15 PM. All traffic-count data are provided in the Appendix.

Due to the COVID-19 pandemic, current traffic volumes vary from typical conditions, and therefore, traffic volumes at a nearby MassDOT continuous count station (Station 4423) in Wakefield on Route 128, north of Route 129 were reviewed. Based on the traffic comparison, the May traffic volumes on the week before, week of, and week after the counts were performed are 3.2 percent lower than the pre-pandemic traffic volumes. The actual day of the traffic counts (Wednesday, May 12, 2021) was 3.9 percent lower than the Wednesday of the second full week in May of 2019. Accordingly, the 2021 traffic counts were increased by 4.0 percent during the weekday peak hours to reflect pre-COVID-19 pandemic conditions. The MassDOT historical traffic-volume data is provided in the Appendix.

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. To determine if the May traffic-volume data needed to be adjusted to account for this fluctuation, historical traffic-volume data were reviewed from the MassDOT records.¹ This information revealed that May traffic volumes are approximately 3.8 percent higher than average-month conditions. Therefore, the May traffic volumes were not seasonally adjusted to reflect an above average-month analysis condition. The MassDOT seasonal adjustment data is provided in the Appendix.

Table 1 summarizes the existing peak-hour traffic volumes adjacent to the site. The 2021 Existing traffic-flow networks for the weekday AM and weekday PM peak hours are shown graphically on Figures 2 and 3.

¹ MassDOT Transportation Data Management System; Station 5099 (Route 128, south of Walnut Street– Wakefield).

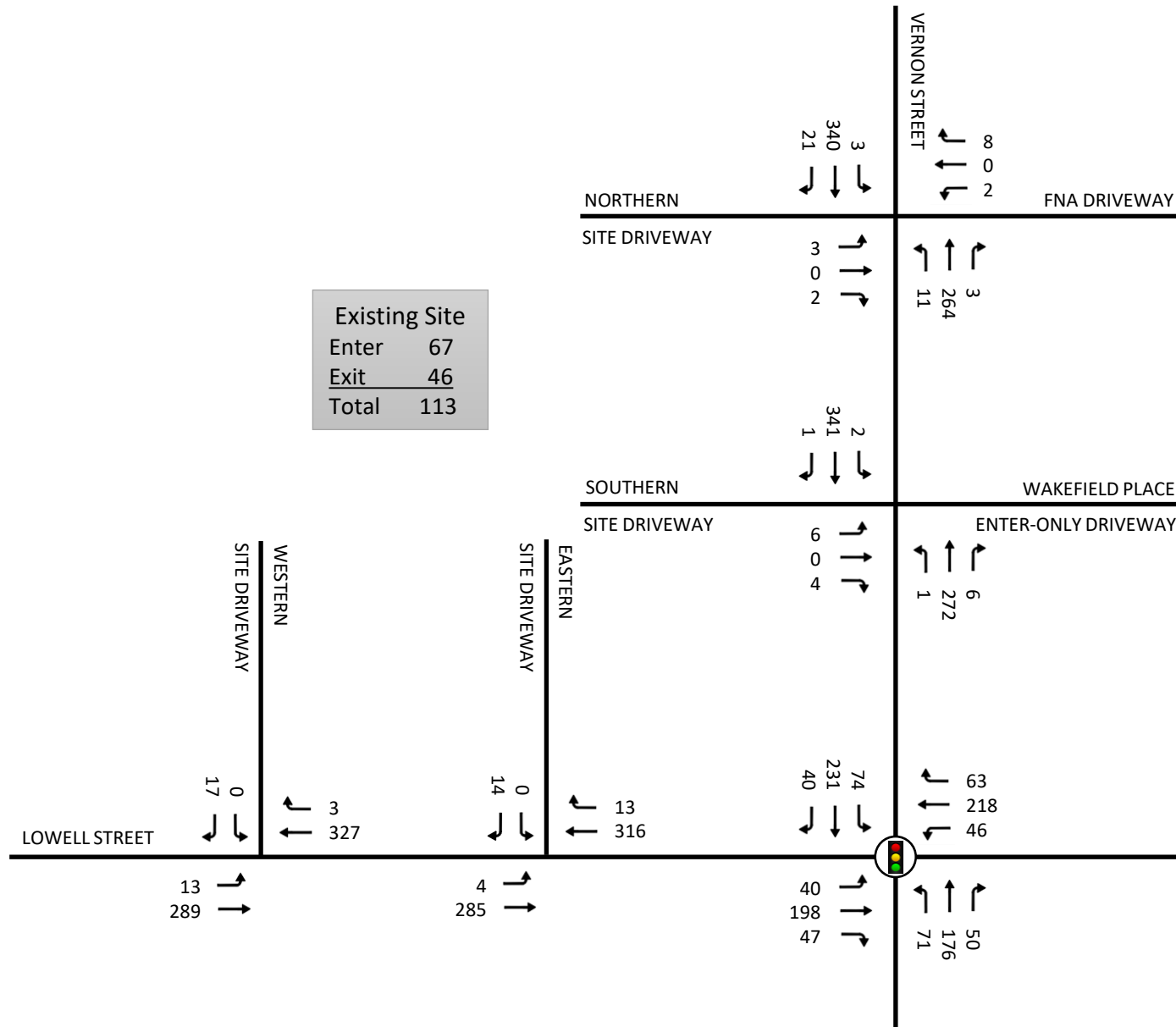


FIGURE 2
 2021 EXISTING TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR

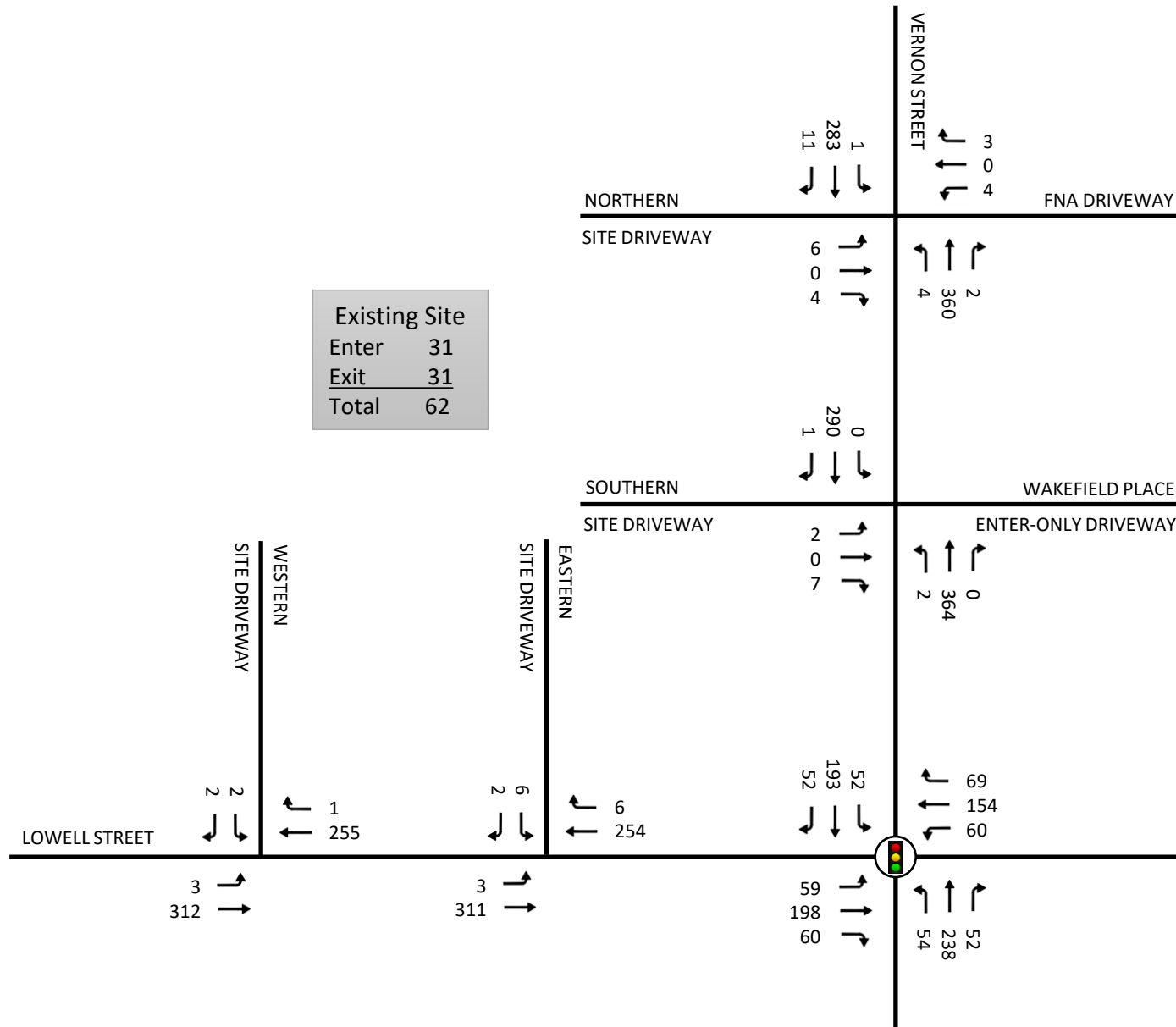


FIGURE 3
2021 EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

TABLE 1
Existing Traffic Volume Summary

Location/Time Period	Peak Hour Volume (vph) ^b	Directional Distribution ^d
Lowell Street, adjacent to the site:		
Weekday Daily		
Weekday AM Peak Hour	614	54% WB
Weekday PM Peak Hour	577	55% EB
Vernon Street, adjacent to the site:		
Weekday Daily		
Weekday AM Peak Hour	624	55% SB
Weekday PM Peak Hour	663	55% NB

^a In vehicles per day. May traffic counts adjusted upward by 4 percent to reflect pre-COVID-19 pandemic conditions.

^b In vehicles per hour. Volumes obtained from Figures 2 and 3.

^c Percentage of daily traffic occurring during the peak hour.

^d WB = westbound, EB = eastbound, SB = southbound, NB = northbound. Percentages from volumes on Figures 2 and 3.

Dolbeare Elementary School Driveway Observations

Additionally, observations were made at the Dolbeare Elementary School driveways on Lowell Street and Vernon Street during the drop-off and pick-up hours of 8:00 AM to 9:00 AM and 2:00 PM to 3:00 PM. Due to the COVID-19 pandemic, the Dolbeare School schedule was 8:15 AM to 2:20 PM. Based on observations, the drop-off and pick-up periods last about 20 minutes before returning to typical conditions. The morning drop-off was busiest between 8:10 AM and 8:30 AM and the afternoon pick-up was busiest between 2:15 PM and 2:35 PM. However, in the fall of 2021, the schedule is anticipated to be 8:30 AM to 2:45 PM, so those periods will shift slightly. It should be noted that during drop-off and pick-up, the Shell gas station (project site) on the corner of Lowell Street and Vernon Street is used as an overflow parking lot.

During the drop-off period observed in the morning, the Lowell Street enter-only driveway experienced one vehicle queuing onto Lowell Street. The vehicle queued up on the shoulder, allowing westbound traffic to continue to flow. The Vernon Street enter-only driveway experienced queuing onto Vernon Street for about five minutes. Vehicles turning right into the school driveway were able to wait in the shoulder, allowing southbound traffic to continue to flow.

During the pick-up period observed in the afternoon, vehicles park along the shoulders on Lowell Street and Vernon Street. Vehicles leave in a staggard manner, and within 20 minutes of dismissal most vehicles have left.

Collisions

Collision data were obtained from MassDOT (2014 through 2018) for the latest five years available at the following locations:

- Lowell Street at Vernon Street – signalized intersection
- Lowell Street Corridor (from Dolbeare School western driveway to Vernon Street signal)
- Vernon Street Corridor (from Dolbeare School northern driveway to Lowell Street signal)

Table 2 summarizes the crash data. In addition to the collision summary, crash occurrence also should be compared to the volume of traffic through a particular intersection or roadway segment to determine any significance. Accordingly, the crash rates were calculated and compared with the statewide and district-wide averages. An intersection crash rate is a measure of the frequency of collisions compared to the volume of traffic through an intersection and is presented in crashes per million entering vehicles (c/mev). A roadway segment crash rate is a measure of the frequency of collisions compared to the volume of traffic along the roadway and is presented in crashes per million vehicle miles traveled (c/mvmt). For signalized intersections, the statewide average is 0.78 c/mev and district-wide (District 4) average is 0.73 c/mev. For urban minor arterials, the statewide average is 3.49 c/mvmt. A comparison of the calculated crash rate to these averages can be used to establish the significance of collision occurrence and whether or not potential safety problems exist. All crash rate worksheets are provided in the Appendix.

The signalized intersection of Lowell Street at Vernon Street experienced an average of approximately 1.0 collision per year with a crash rate of 0.20 c/mev which is less than the Statewide (0.78 c/mev) and District 4 (0.73 c/mev) average for signalized intersections. Three of the five crashes resulted in personal injury and two resulted in property damage only. Three crashes were cross movement/angle collisions and two were rear-end collisions. Driver contributing circumstances included inattention, driving too fast for (snowy) conditions, and operating the vehicle in reckless manner. Two of the five crashes (40 percent) occurred during the weekday AM and PM commuter peak periods and one crash (20 percent) occurred in snowy conditions. Although there are concerns with the percentage of injury crashes, due to the low crash occurrence and low crash rate, the collisions between 2014 and 2018 do not indicate a pattern correctable by engineering measures.

The Lowell Street corridor, from the western driveway of the Dolbeare School to the signalized intersection with Vernon Street, experienced an average of 1.2 collisions per year with a crash rate of 3.42 c/mvmt which is less than the Statewide average (3.49 c/mvmt) for urban minor arterials. Of the six crashes, four resulted in property damage only, one resulted in personal injury, and one was not reported. The collision type varied significantly with two sideswipe crashes, two rear-end collisions, one cross movement/angle collision, and one single-vehicle crash. Only one of the crashes occurred during the weekday AM and PM commuter peak periods. Being adjacent to the Dolbeare School, it should be noted that two of the crashes occurred between 2:00 PM and 3:30 PM. Due to the diverse collision types and lower-than-average crash rate, the collisions between 2014 and 2018 do not indicate a pattern correctable by engineering measures.

The Vernon Street corridor, from the northern driveway of the Dolbeare School to the signalized intersection with Lowell Street, did not experience any collisions within the latest five years of available data.

**TABLE 2
Collision Summary**

Location	Number of Collisions			Severity ^a				Collision Type ^b					Percent During	
	Total	Average per Year	Crash Rate ^c	PD	PI	F	NR	SS	RE	CM	SV	U	Commuter Peak ^d	Wet/Icy Conditions ^e
Lowell Street at Vernon Street	5	1.0	0.20	2	3	--	--	--	2	3	--	--	40%	20%
Lowell Street Corridor	6	1.2	3.42	4	1	--	1	2	2	1	1	--	17%	0%
Vernon Street Corridor	0	0.0	NA	0	0	0	--	--	--	--	--	--	--	--

Source: MassDOT (2014-2018).

^a PD = property damage only; PI = personal injury; F = fatality, NR = not reported.

^b SS = sideswipe; RE = rear end; CM = cross movement/angle; SV = single vehicle; U = unknown.

^c Measured in crashes per million entering vehicles for intersections and in crashes per million vehicle miles traveled for roadway segments.

^d Percent of vehicle incidents that occurred during the weekday AM (7:00 AM-9:00 AM) and weekday PM (4:00 PM -6:00 PM) commuter peak periods.

^e Represents the percentage of only “known” collisions occurring during inclement weather conditions.

FUTURE CONDITIONS

To estimate the impact of site-generated traffic within the study area, existing traffic volumes were projected to the year 2028, representing a seven-year design horizon in accordance with state guidelines. The proposed redevelopment is expected to be completed and fully operational well within this time frame. Traffic volumes on the roadway network at that time will include existing traffic and new traffic due to normal traffic growth. Consideration of these factors resulted in the development of 2028 No-Build traffic volumes, which assume that the proposed redevelopment is not built. The incremental impacts of the proposed project may then be determined by adding site-generated traffic volumes (Build conditions) and making comparisons to the No-Build conditions.

Traffic Growth

To develop the 2028 No-Build forecast volumes, two components of traffic growth were considered. First, an annual growth percentage was determined. Based on historic traffic-volume data provided by MassDOT, traffic volumes in the area have been increasing at a rate of approximately 0.8 percent per year.² Therefore, to provide a conservative (worse than expected) analysis scenario, a 1.0 percent compounded annual growth was assumed for the project area, consistent with other traffic studies in the area. The MassDOT adjustment data are provided in the Appendix.

Second, any planned or approved specific developments in the area that would generate a significant volume of traffic on study area roadways within the next seven years were considered. Based on discussions with the Town officials, the following development is planned in the vicinity of the project that may add traffic to the study area roadways.

- *200 Quannapowitt Parkway* – This mixed-use development project includes 485 multifamily residential units, and an 1,100 square foot restaurant. The traffic volumes associated with this project were obtained from the TIA³ dated March 2021 and distributed along the roadway network.

All back-up data are provided in the Appendix.

Planned Roadway Improvements

The MBTA is making improvements to the intersection of Lowell Street at Vernon Street. The design engineer, McMahon, is expecting to move to 100% design plans in March 2022. The improvements include re-constructing the ramps on all corners of the intersection, improving the bus stop on Vernon Street south of Lowell Street, and updating the pedestrian phase at the signal. The 30% design plans are provided in the Appendix.

² MassDOT Transportation Data Management System; Station 4848 (Route 28, north of Minot Street – Reading), Station 4137 (Route 128, north of North Avenue – Wakefield), Station 4423 (Route 128, north of Route 129 – Wakefield), and Station 4121 (Route 128, north of Main Street – Wakefield).

³ Vanasse & Associates, Inc. (VAI); Transportation Impact Assessment, Proposed Mixed-Use Development, Wakefield, Massachusetts; March 2021.

No-Build Conditions

The 2028 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (7.2 percent over seven years) to the 2021 Existing traffic volumes and adding the trips associated with the proposed mixed-use development. The 2028 No-Build traffic volumes are shown graphically on Figures 4 and 5 for the peak hours.

Trip Generation

The site currently occupies a Shell Station having three (3) MPDs with six (6) VFPS with a 1,994 SF building that houses a Service Station (3 bays) and Snack Shop. The redevelopment consists of razing the existing structures on the site and constructing a 5,000 SF building (4,121 SF gas station/convenience store with an 879 SF walk-up coffee/donut shop and six (6) MPDs with twelve (12) VFPS).

Traffic to be generated by the proposed development was forecast using trip rates contained in the ITE *Trip Generation, 11th Edition*⁴ for Land Use Code (LUC) 945 (Convenience Store/Gas Station) and LUC 936 (Coffee/Donut Shop without Drive-Through Window). All trip-generation data are provided in the Appendix.

Studies have shown that for developments of mixed-use or multi-use sites, it is realistic to assume that there will be some multi-use trips within the site itself. For example, someone fueling their vehicle may also stop at the coffee shop. Therefore, a reduction in the overall trips experienced at the site driveways can be anticipated as a result of multi-use trips that include stops at more than one use on the site. Based on information published in the ITE *Trip Generation Handbook*⁵, *Procedure for Estimating Multi-Use Trip Generation*, it is estimated that multi-use trips account for 8 percent of weekday daily, 13 percent of weekday AM peak hour, and 7 percent of weekday PM peak hour trips generated by the site. The Multi-Use Development Trip Generation and Internal Capture Worksheets are provided in the Appendix.

Not all of the vehicle trips expected to be generated by the proposed development represent *new* trips on the study area roadway system. Studies have shown that for developments such as the one proposed, a substantial portion of the site-generated vehicle trips are already present in the adjacent passing stream of traffic. Based on information published in the ITE *Trip Generation Handbook*, the average *pass-by* trip percentage is 76 percent during the weekday AM and 75 percent during the weekday PM peak hour for LUC 945 (Convenience Store/Gas Station) and 50 percent during the weekday AM peak hour and 55 percent during the weekday PM peak hour for LUC 934 (Fast-Food Restaurant with Drive-Through Window). The *pass-by* data are provided in the Appendix.

Table 3 summarizes the results of the trip-generation estimates.

⁴ *Trip Generation, 11th Edition*. Institute of Transportation Engineers; Washington, DC; 2021.

⁵ *Trip Generation Handbook*; 3rd Edition; Institute of Transportation Engineers; Washington, DC; August 2014.

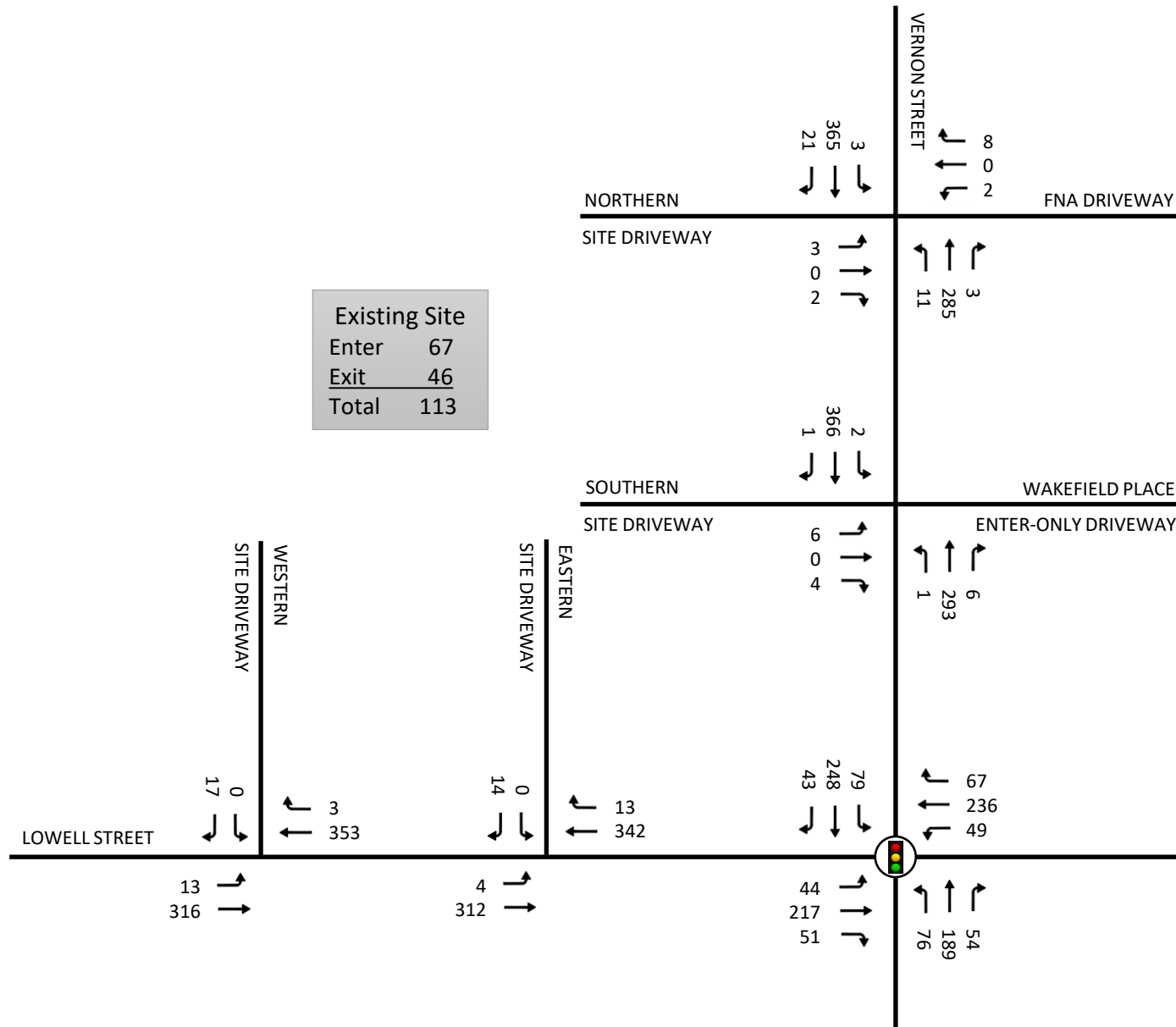


FIGURE 4

**2028 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR**

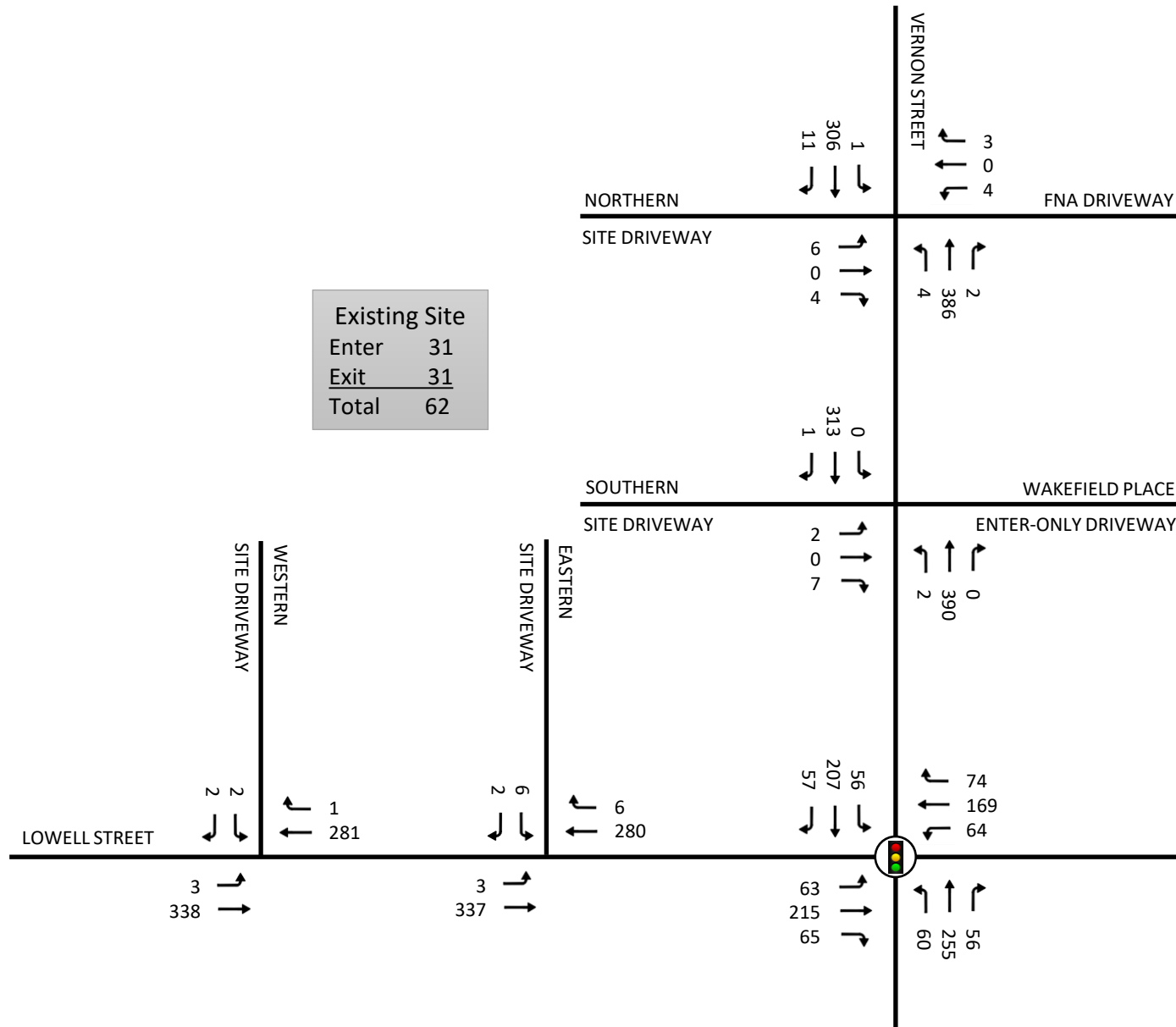


FIGURE 5
2028 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

TABLE 3
Trip-Generation Summary

Peak Hour/Direction	Total Trips		Additional Trips		
	Proposed Trips ^a	Existing Trips ^b	Total Trips ^c	Pass-By Trips ^d	New Trips ^e
Weekday AM Peak Hour:					
<i>Enter</i>	157	67	90	69	21
<i>Exit</i>	156	46	110	69	41
<i>Total</i>	313	113	200	138	62
Weekday PM Peak Hour:					
<i>Enter</i>	128	31	97	71	26
<i>Exit</i>	129	31	98	71	27
<i>Total</i>	257	62	195	142	53

^a External Trips based on ITE LUC 945 (Convenience Store/Gas Station) and ITE LUC 936 (Coffee/Donut Shop without Drive-Through Window).

^b Based on traffic counts conducted on Wednesday, May 12, 2021.

^c Proposed Trips minus Existing Trips.

^d Convenience Store/Gas Station Trips – 76 percent of Total Additional Trips during the weekday AM peak hour and 75 percent of Total Additional Trips during the weekday PM peak hour.

Coffee/Donut Shop Trips – 50 percent of Total Additional Trips during the weekday AM peak hour and 55 percent of Total Additional Trips during the weekday PM peak hour.

^e Total Additional Trips minus Additional Pass-By Trips.

As shown in Table 3, the proposed redevelopment is expected to generate 62 additional *new* vehicles trips (21 entering and 41 exiting) during the weekday AM peak hour and 53 additional *new* vehicles trips (26 entering and 27 exiting) during the weekday PM peak hour. It should be noted that the volume of *pass-by* traffic does not reduce the total volume of traffic generated by the redevelopment and the external trips will still be realized as turning movements at the site driveways.

Trip Distribution

Having estimated project-generated vehicle trips, the next step is to determine the distribution of project traffic and assign these trips to the local roadway network. The directional distribution of site traffic is dependent on expected travel routes to and from the site and travel patterns at the existing site driveways. Accordingly, approximately 25 percent of the site-generated traffic is expected to and from the north and south along Vernon Street and 25 percent is expected to and from the east and west along Lowell Street. The pass-by trips will follow the existing flow of traffic on Lowell Street and Vernon Street.

Build Traffic Volumes

Based on the traffic generation and distribution estimates for this project, the traffic volumes associated with the proposed redevelopment were assigned to the roadway network. The site-generated traffic networks are shown on Figures 6 and 7 for the weekday AM and weekday PM peak hours, respectively. The site-generated traffic volumes were then combined with the 2028 No-Build traffic volumes to develop the 2026 Build peak-hour traffic-volume networks. The 2028 Build weekday AM and weekday PM peak hour traffic volumes are illustrated on Figures 8 and 9.



[XX] = Redistributed Trips

Additional Trips			
	Total	Pass-By	New
Enter	90	(69)	21
Exit	110	(69)	41
Total	200	(138)	62

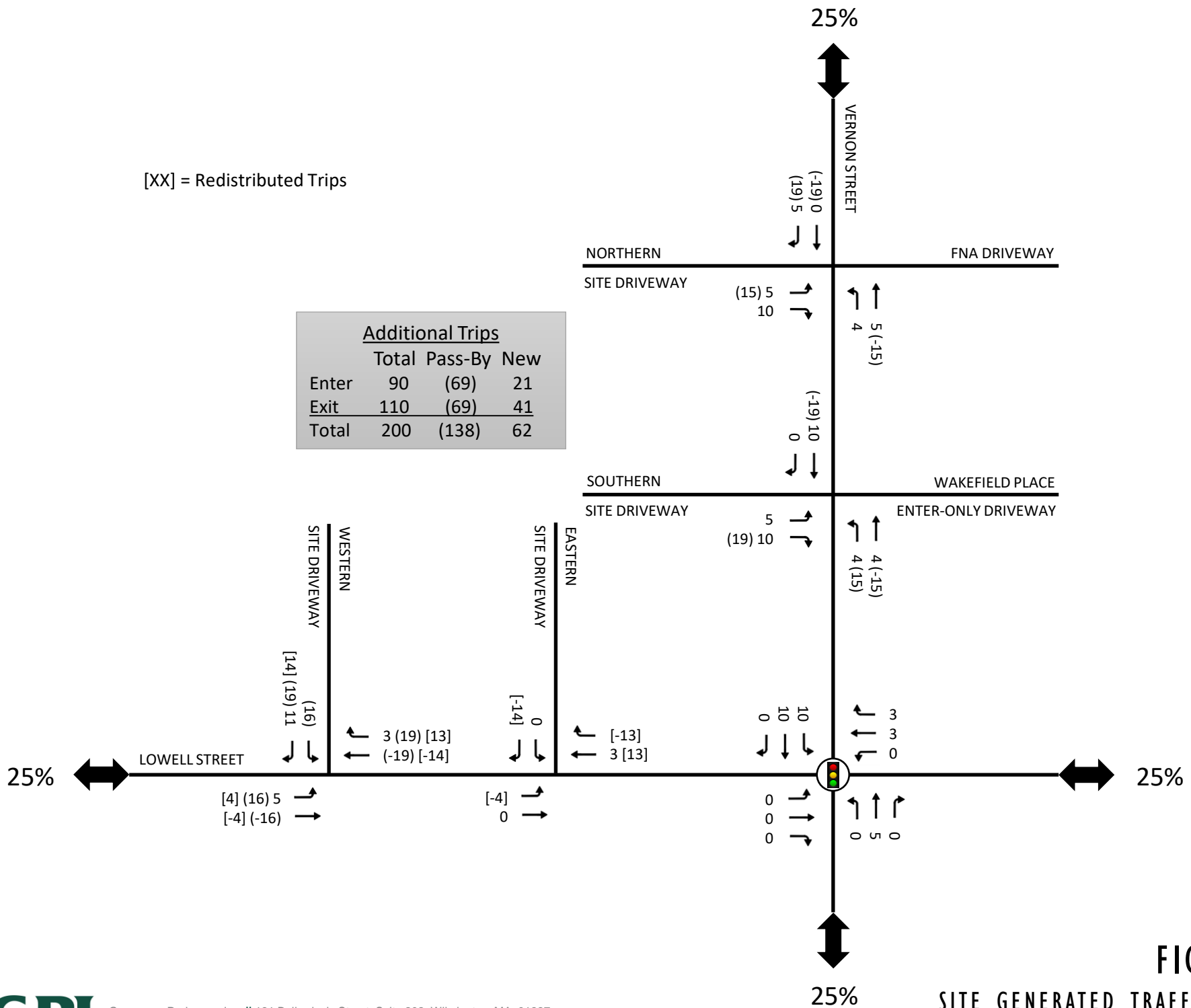


FIGURE 6
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR



[XX] = Redistributed Trips

Additional Trips			
	Total	Pass-By	New
Enter	97	(71)	26
Exit	98	(71)	27
Total	195	(142)	53

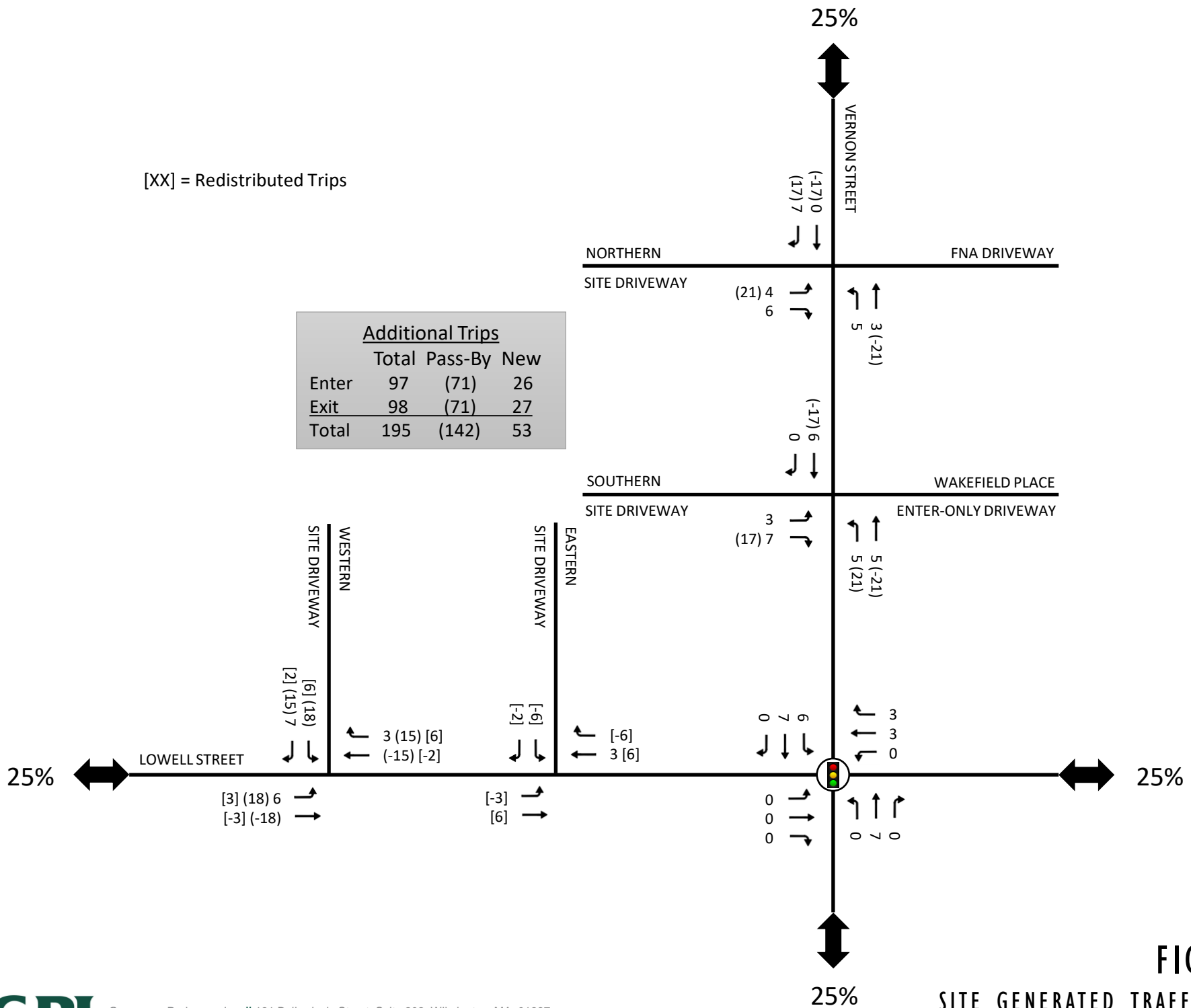


FIGURE 7
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

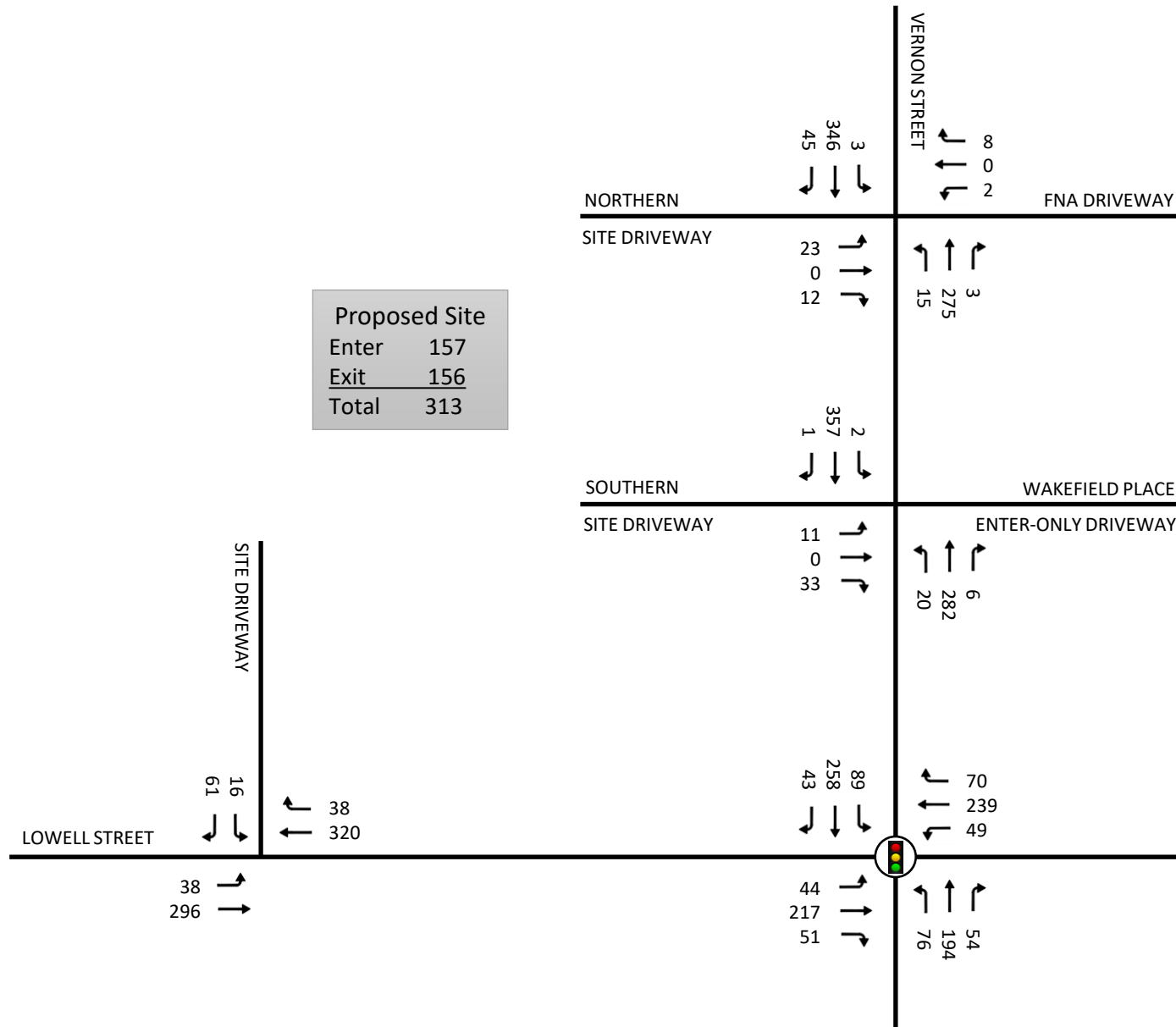


FIGURE 8
2028 BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR

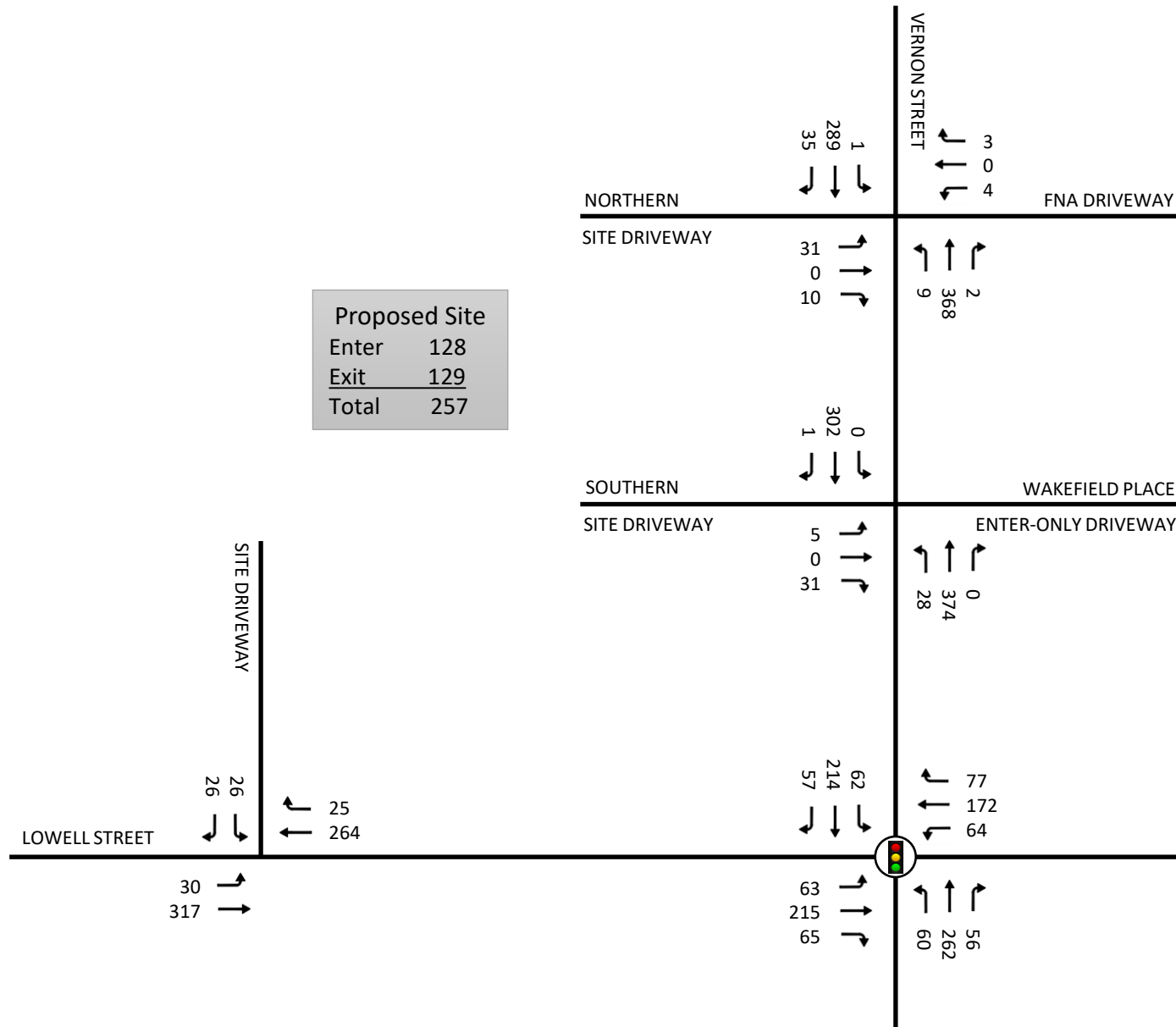


FIGURE 9
2028 BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR

Traffic Increases

The proposed redevelopment will result in slight increases in traffic on the study area roadways. As shown on Figures 6 and 7, traffic-volume increases beyond the study area during the peak hours are expected to be in the range of 12 to 16 vehicles trips. These increases represent, on average, one additional vehicle trip approximately every 3.75 to 5 minutes during the peak hours.

CAPACITY AND QUEUE ANALYSIS

Capacity and queue analyses were conducted at all study area locations under 2021 Existing, 2028 No-Build, and 2028 Build traffic-volume conditions. The impact of site-generated traffic can be measured by comparing 2028 No-Build conditions to 2028 Build conditions.

Methodology

The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual (HCM)*⁶ and is described in the Appendix. The TIAS utilizes HCM 2000 methodology since HCM 6 and HCM 2010 do not support exclusive ped phases.

For signalized intersections, the maximum back of queue during a typical (average) signal cycle and a 95th percentile signal cycle were calculated for each lane group during the peak periods studied. The back of queue is the length of a backup of vehicles from the stop line of a signalized intersection to the last vehicle in the queue that is required to stop, regardless of the signal indication. The length of this queue depends on a number of factors including signal timing, vehicle arrival patterns, and the saturation flow rate. For unsignalized intersections, the 95th percentile queue represents the length of queue of the critical minor-street movement that is not expected to be exceeded 95 percent of the time during the analysis period (typically one hour). In this case, the queue length is a function of the capacity of the movement and the movement's degree of saturation.

Analysis Results

The results of the level-of-service (LOS) and queue analyses are shown in Table 4 and are discussed below. Capacity and queue analyses were conducted at the study area intersections utilizing *Synchro* software.⁷ The capacity and queue analysis worksheets for all conditions are provided in the Appendix.

Lowell Street at Vernon Street

As shown in Table 4, under existing traffic-volume conditions, the signalized intersection operates at an overall LOS E during the weekday AM peak hour and LOS D during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday AM. Under the future conditions, the MBTA project improvements will be implemented, including a slight extension in the exclusive pedestrian phase, and slightly longer yellow and red clearance times. With these safety improvements and the increase in traffic as a result of background growth, operations at the intersection drop to an overall LOS F during

⁶ *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.

⁷ *Synchro plus SimTraffic 11*; Trafficware LLC.; Sugar Land, TX; 2019.

the weekday AM peak hour and LOS E during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday PM peak hour as well. As a result of the redevelopment project, the overall intersection drops from LOS E to LOS F during the weekday PM peak hour with no drops in LOS at any particular movement during either peak hour. This drop to the overall intersection is a result of adding a minimal amount of traffic to the already over capacity Vernon Street southbound approach. The project redevelopment is expected to add 31 vehicle trips (weekday AM) and 26 vehicle trips (weekday PM) to the entire intersection during the peak hours, equating to one additional vehicle every 1.9 to 2.3 minutes. On average, this is at most one additional vehicle trip per signal cycle during the weekday peak hours. As mentioned in the *Existing Conditions* section, the video detection is currently not working, and therefore, the signal operates as pre-timed with fixed signal phases. Under actuated signal control, where time for each phase is at least partially controlled by detector actuations, the overall intersection operates at LOS C with all movements at LOS C or better and all approaches operating under capacity. These analysis worksheets (2028 Build with Improvements) are included in the Appendix.

Lowell Street at Site Driveways

Under existing and future traffic-volume conditions, all movements at the intersection of Lowell Street and site driveways operate at LOS C or better with volume-to-capacity (v/c) ratios below 1.00 and queue lengths of one vehicle or less. With the redevelopment project, the existing driveways on Lowell Street are proposed to be closed and a new one is proposed in between the existing driveway locations. Although the eastbound queue from the traffic signal is expected to block the Lowell Street driveway when this approach has a red signal, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

Vernon Street at Site Driveways

Under existing and future traffic-volume conditions, all movements at the intersection of Vernon Street and site driveways operate at LOS C or better with v/c ratios below 1.00 and queue lengths of one vehicle or less. Again, although the southbound queue from the traffic signal is expected to block the Vernon Street driveways when this approach has a red signal, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

TABLE 4
Intersection Capacity Analysis Summary

Intersection/Peak Hour/Lane Group	2021 Existing				2028 No-Build				2028 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Lowell Street at Vernon Street												
<i>Weekday AM:</i>												
Lowell Street EB approach	0.85	46.0	D	182/240	0.85	50.4	D	184/334	0.85	51.0	D	184/335
Lowell Street WB approach	0.96	63.4	E	225/300	0.92	60.1	E	214/385	0.93	62.2	E	218/394
Vernon Street NB left-turn/through	0.89	54.0	D	161/239	0.92	66.7	E	161/316	0.94	70.4	E	165/324
Vernon Street NB right-turn	0.14	22.3	C	25/47	0.14	25.6	C	26/56	0.14	25.6	C	26/56
Vernon Street SB approach	1.14	121.5	F	244/400	1.30	191.5	F	301/478	1.43	246.0	F	333/513
Overall Intersection	0.73	70.1	E	--/--	0.74	93.7	F	--/--	0.79	111.6	F	--/--
<i>Weekday PM:</i>												
Lowell Street EB approach	0.79	40.3	D	170/307	0.96	70.1	E	212/390	0.97	71.9	E	212/391
Lowell Street WB approach	0.72	36.2	D	143/257	0.93	63.8	E	187/351	0.94	66.4	E	191/359
Vernon Street NB left-turn/through	0.75	37.8	D	161/265	0.90	58.1	E	189/350	0.92	62.0	E	195/363
Vernon Street NB right-turn	0.13	22.2	C	23/49	0.15	25.7	C	27/58	0.15	25.7	C	27/58
Vernon Street SB approach	0.82	44.7	D	152/292	1.16	135.5	F	239/407	1.30	190.7	F	269/439
Overall Intersection	0.56	39.0	D	--/--	0.71	79.6	E	--/--	0.75	95.4	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle).

TABLE 4 (continued)
Intersection Capacity Analysis Summary

Intersection/Peak Hour/Lane Group	2021 Existing				2028 No-Build				2028 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Lowell Street at Western Site Driveway												
<i>Weekday AM:</i>												
Lowell Street EB approach	0.02	0.6	A	--/ < 25	0.02	0.5	A	--/ < 25	0.05	1.5	A	--/ < 25
Lowell Street WB approach	0.27	0.0	A	--/ < 25	0.23	0.0	A	--/ < 25	0.23	0.0	A	--/ < 25
Western Site Driveway SB approach	0.12	18.2	C	--/ < 25	0.05	16.1	C	--/ < 25	0.29	22.5	C	--/ < 29
<i>Weekday PM:</i>												
Lowell Street EB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	0.03	0.9	A	--/ < 25
Lowell Street WB approach	0.18	0.0	A	--/ < 25	0.18	0.0	A	--/ < 25	0.18	0.0	A	--/ < 25
Western Site Driveway SB approach	0.02	12.3	B	--/ < 25	0.01	12.3	B	--/ < 25	0.12	13.5	B	--/ < 25
Lowell Street at Eastern Site Driveway												
<i>Weekday AM:</i>												
Lowell Street EB approach	0.01	0.2	A	--/ < 25	0.00	0.1	A	--/ < 25	--	--	--	--/ --
Lowell Street WB approach	0.27	0.0	A	--/ < 25	0.23	0.0	A	--/ < 25	--	--	--	--/ --
Eastern Site Driveway SB approach	0.09	14.3	B	--/ < 25	0.03	12.9	B	--/ < 25	--	--	--	--/ --
<i>Weekday PM:</i>												
Lowell Street EB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	--	--	--	--/ --
Lowell Street WB approach	0.18	0.0	A	--/ < 25	0.18	0.0	A	--/ < 25	--	--	--	--/ --
Eastern Site Driveway SB approach	0.04	13.3	B	--/ < 25	0.02	13.4	B	--/ < 25	--	--	--	--/ --

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle).

TABLE 4 (continued)
Intersection Capacity Analysis Summary

Intersection/Peak Hour/Lane Group	2021 Existing				2028 No-Build				2028 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Vernon Street at Northern Site Driveway and FNA Driveway												
<i>Weekday AM:</i>												
Northern Site Driveway EB approach	0.02	16.5	C	--/ < 25	0.01	14.9	B	--/ < 25	0.11	16.2	C	--/ < 25
FNA Driveway WB approach	0.02	11.7	B	--/ < 25	0.02	11.2	B	--/ < 25	0.02	11.2	B	--/ < 25
Vernon Street NB approach	0.01	0.5	A	--/ < 25	0.01	0.4	A	--/ < 25	0.01	0.6	A	--/ < 25
Vernon Street SB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25
<i>Weekday PM:</i>												
Northern Site Driveway EB approach	0.05	14.3	B	--/ < 25	0.03	14.7	B	--/ < 25	0.12	16.4	C	--/ < 25
FNA Driveway WB approach	0.05	14.1	B	--/ < 25	0.02	14.1	B	--/ < 25	0.02	14.1	B	--/ < 25
Vernon Street NB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	0.01	0.3	A	--/ < 25
Vernon Street SB approach	0.00	0.0	A	--/ < 25	0.00	0.0	A	--/ < 25	0.00	0.0	A	--/ < 25
Vernon Street at Southern Site Driveway and Wakefield Place (Enter-Only) Driveway												
<i>Weekday AM:</i>												
Southern Site Driveway EB approach	0.06	15.9	C	--/ < 25	0.03	14.7	B	--/ < 25	0.10	13.3	B	--/ < 25
Vernon Street NB approach	0.00	0.0	A	--/ < 25	0.00	0.0	A	--/ < 25	0.02	0.7	A	--/ < 25
Vernon Street SB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25
<i>Weekday PM:</i>												
Southern Site Driveway EB approach	0.02	11.7	B	--/ < 25	0.02	11.7	B	--/ < 25	0.07	11.6	B	--/ < 25
Vernon Street NB approach	0.00	0.1	A	--/ < 25	0.00	0.1	A	--/ < 25	0.02	0.8	A	--/ < 25
Vernon Street SB approach	0.00	0.0	A	--/ < 25	0.00	0.0	A	--/ < 25	0.00	0.0	A	--/ < 25

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle).

CONCLUSIONS

Existing and future conditions in the study area have been described, analyzed, and evaluated with respect to traffic operations and the impact of the proposed redevelopment. Conclusions of this effort are presented below.

- The proposed redevelopment is located at 356 Lowell Street in Wakefield, Massachusetts. The site currently occupies a Shell Station having three (3) MPDs with six (6) VFPS with a 1,994 SF building that houses a Service Station (3 bays) and Snack Shop. The redevelopment consists of razing the existing structures on the site and constructing a 5,000 SF building (4,121 SF gas station/convenience store with an 879 SF walk-up coffee/donut shop and six (6) MPDs with twelve (12) VFPS). Four (4) curb cuts currently provide access and egress to the site; two (2) on Lowell Street and two (2) on Vernon Street. As part of the redevelopment, access/egress on Lowell Street will be reduced to one driveway and the driveways on Vernon Street will remain.
- The redevelopment is expected to generate 62 additional *new* vehicles trips (21 entering and 41 exiting) during the weekday AM peak hour and 53 additional *new* vehicles trips (26 entering and 27 exiting) during the weekday PM peak hour. Traffic-volume increases beyond the study area during the peak hours are expected to be in the range of 12 to 16 vehicles trips. These slight increases represent, on average, one additional vehicle trip approximately every 3.75 to 5 minutes during the peak hours.
- Under existing traffic-volume conditions, the signalized intersection operates at an overall LOS E during the weekday AM peak hour and LOS D during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday AM. Under the future conditions, the MBTA project improvements will be implemented, including a slight extension in the exclusive pedestrian phase, and slightly longer yellow and red clearance times. With these safety improvements and the increase in traffic as a result of background growth, operations at the intersection drop to an overall LOS F during the weekday AM peak hour and LOS E during the weekday PM peak hour with the Vernon Street southbound approach over capacity during the weekday PM peak hour as well.

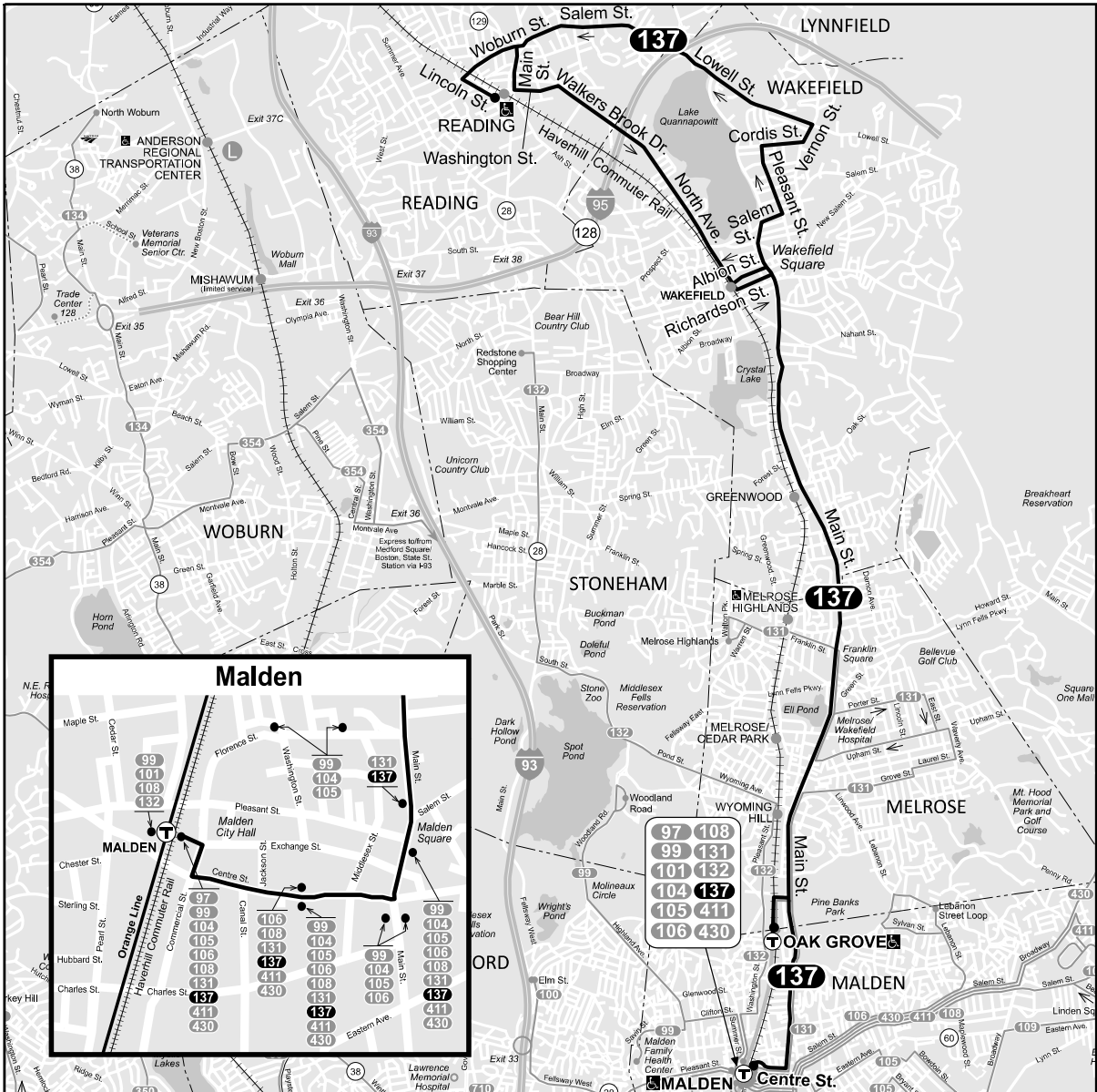
As a result of the redevelopment project, the overall intersection drops from LOS E to LOS F during the weekday PM peak hour with no drops in LOS at any particular movement during either peak hour. This drop to the overall intersection is a result of adding a minimal amount of traffic to the already over capacity Vernon Street southbound approach. The project redevelopment is expected to add 31 vehicle trips (weekday AM) and 26 vehicle trips (weekday PM) to the entire intersection during the peak hours, equating to one additional vehicle every 1.9 to 2.3 minutes. On average, this is at most one additional vehicle trip per signal cycle during the weekday peak hours. As mentioned in the *Existing Conditions* section, the video detection is currently not working, and therefore, the signal operates as pre-timed with fixed signal phases. Under actuated signal control, where time for each phase is at least partially controlled by detector actuations, the overall intersection operates at LOS C with all movements at LOS C or better and all approaches operating under capacity.

- Under existing and future traffic-volume conditions, all movements at the intersections of Lowell Street and Vernon Street with the site driveways operate at LOS C or better with v/c ratios below 1.00 and queue lengths of one vehicle or less. With the redevelopment project, the existing driveways on Lowell Street are proposed to be closed and a new one is proposed in between the existing driveway locations. Although queueing from the adjacent traffic signal is expected to block the site driveways when the particular approach has a red light, which is common at all developments on a signalized corner, the queue is anticipated to clear and there is room on-site to accommodate a queue while vehicles wait for an adequate gap in traffic to leave the site.

- APPENDIX

- ***Public Transportation Information***
 - ***Traffic Count Data***
- ***Traffic-Volume Adjustment Data***
- ***MassDOT Crash Rate Worksheets***
 - ***Background Development Data***
 - ***MBTA Improvement Plans***
 - ***Trip Generation Calculations***
 - ***Capacity Analysis Methodology***
- ***Capacity and Queue Analysis Worksheets***

PUBLIC TRANSPORTATION INFORMATION



Effective Jun 20, 2021

Schedule Change

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Reading Depot - Malden Center Sta



mbta.com
 617-222-3200
 617-222-5146 (TTY)

Lost & Found
 617-222-5607

Information in this timetable is subject to change without notice. Traffic conditions and weather can affect running time.

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Weekday

Inbound					Outbound				
Leave Reading Depot	Lv/Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Lv/Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
5:25A	5:35A	5:41A	5:50A	6:00A	4:49A	4:55A	5:01A	5:08A	5:22A
6:05	6:15	6:21	6:30	6:40	5:25	5:32	5:40	5:48	6:02
6:35	6:45	6:51	7:00	.....	.....	6:02	6:10	6:18	6:32
7:00	7:12	7:20	7:30	.....	.....	6:27	6:35	6:43	6:57
7:16	7:28	7:36	7:46	.....	.....	6:59	7:07	7:15	7:29
7:32	7:44	7:52	8:02	.....	.....	7:11	7:19	7:27	7:44
7:48	8:00	8:08	8:18	.....	.....	7:41	7:51	7:59	8:17
8:04	8:14	8:22	8:32	.....	.....	7:57	8:07	8:15	8:33
8:20	8:30	8:38	8:48	.....	.....	8:16	8:26	8:34	8:52
8:36	8:46	8:54	9:04	.....	.....	8:36	8:46	8:54	9:12
8:55	9:06	9:13	9:23	.....	.....	9:01	9:10	9:19	9:37
9:15	9:27	9:34	9:44	9:54	.....	9:27	9:36	9:45	10:02
9:40	9:52	9:59	10:09	10:19	9:40	9:50	9:59	10:08	10:23
10:05	10:17	10:24	10:34	10:48	10:05	10:15	10:26	10:35	10:50
10:26	10:39	10:46	10:57	11:11	10:30	10:40	10:51	11:00	11:15
10:53	11:06	11:13	11:24	11:38	10:55	11:05	11:16	11:25	11:42
11:18	11:31	11:38	11:49	12:03P	11:20	11:30	11:41	11:50	12:08P
11:45	11:58	12:05P	12:16P	12:30	11:45	11:53	12:04P	12:13P	12:31
12:11P	12:24P	12:31	12:42	12:56	12:10P	12:18P	12:29	12:38	12:56
12:34	12:47	12:54	1:06	1:17	12:35	12:43	12:54	1:03	1:19
12:59	1:14	1:20	1:31	1:42	1:00	1:10	1:22	1:32	1:48
1:22	1:37	1:43	1:54	2:06	1:25	1:35	1:47	1:57	2:12
1:50	2:04	2:13	2:23	2:36	1:50	2:00	2:11	2:21	2:36
2:16	2:29	2:38	2:48	3:01	2:15	2:24	2:35	2:45	3:00
2:39	2:52	3:01	3:11	3:24	2:40	2:49	3:00	3:10	3:25
3:03	3:16	3:25	3:35	3:48	3:05	3:14	3:25	3:35	3:50
3:28	3:41	3:50	4:00	4:13	.....	3:23	3:34	3:44	3:59
3:53	4:06	4:15	4:25	4:38	3:30	3:39	3:50	4:00	4:15
4:02	4:15	4:24	4:33	.....	.....	4:00	4:12	4:22	4:37
4:22	4:35	4:41	4:52	.....	.....	4:20	4:32	4:42	4:57
4:40	4:54	5:00	5:11	.....	.....	4:37	4:49	4:59	5:14
5:00	5:14	5:20	5:31	.....	.....	4:53	5:05	5:15	5:30
5:17	5:31	5:37	5:48	.....	.....	5:09	5:21	5:31	5:46
5:33	5:47	5:53	6:04	.....	.....	5:25	5:37	5:47	6:02
5:49	6:02	6:08	6:18	.....	.....	5:41	5:53	6:02	6:16
6:05	6:17	6:23	6:33	.....	.....	5:57	6:06	6:15	6:29
6:19	6:31	6:37	6:47	.....	.....	6:13	6:22	6:31	6:45
6:32	6:44	6:50	7:00	.....	.....	6:29	6:38	6:47	7:01
6:48	7:00	7:06	7:16	.....	.....	6:45	6:54	7:03	7:17
7:04	7:16	7:22	7:31	.....	.....	7:05	7:14	7:23	7:37
7:20	7:31	7:37	7:46	7:57	7:30	7:40	7:49	7:58	8:12
7:40	7:49	7:55	8:04	8:15	8:10	8:20	8:29	8:38	8:52
8:15	8:24	8:30	8:39	8:50	8:55	9:05	9:14	9:23	9:37
8:55	9:04	9:10	9:19	9:30	9:40	9:50	9:59	10:08	10:22
9:40	9:49	9:55	10:04	10:15					
10:25	10:34	10:40	10:49	11:00					

Summer 2021 Holidays

7/4 Sun; 7/5 Sun(Bus) Sat(Rail)

137


Saturday

Inbound					Outbound				
Leave Reading Depot	Lv/Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
6:00A	6:10A	6:17A	6:25A	6:36A	6:00A	6:08A	6:16A	6:23A	6:38A
6:41	6:51	6:58	7:06	7:17	6:40	6:48	6:56	7:03	7:18
7:21	7:31	7:38	7:46	7:57	7:25	7:33	7:41	7:48	8:03
8:06	8:16	8:23	8:31	8:42	8:05	8:13	8:23	8:31	8:46
8:49	8:59	9:06	9:16	9:27	8:50	8:58	9:09	9:18	9:33
9:36	9:48	9:55	10:07	10:18	9:35	9:43	9:54	10:03	10:18
10:21	10:34	10:42	10:55	11:07	10:30	10:38	10:49	10:58	11:14
11:17	11:31	11:39	11:50	12:02P	11:15	11:24	11:38	11:50	12:06P
12:09P	12:23P	12:31P	12:42P	12:54	12:10P	12:19P	12:30P	12:41P	12:56
12:59	1:13	1:21	1:32	1:44	1:00	1:09	1:20	1:31	1:46
1:49	2:03	2:12	2:23	2:34	1:50	1:59	2:10	2:21	2:36
2:39	2:53	3:01	3:11	3:22	2:40	2:49	3:00	3:11	3:26
3:29	3:42	3:50	4:00	4:11	3:30	3:39	3:50	4:00	4:15
4:18	4:30	4:37	4:47	4:58	4:20	4:29	4:40	4:50	5:05
5:08	5:20	5:27	5:37	5:48	5:05	5:15	5:26	5:34	5:49
5:52	6:04	6:11	6:21	6:32	5:55	6:05	6:16	6:24	6:39
6:42	6:54	7:01	7:11	7:22	6:45	6:55	7:06	7:14	7:29
7:32	7:44	7:51	8:01	8:12	8:30	8:38	8:46	8:53	.....
.....	9:00	9:07	9:17	9:28					

137

Sunday

Inbound					Outbound				
Leave Reading Depot	Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
8:00A	8:11A	8:17A	8:25A	8:36A	8:40A	8:49A	8:57A	9:05A	9:19A
9:22	9:34	9:40	9:50	10:01	10:10	10:19	10:28	10:36	10:50
10:53	11:05	11:11	11:21	11:34	11:40	11:50	11:58	12:07P	12:21P
12:24P	12:36P	12:44P	12:54P	1:06P	1:20P	1:29P	1:39P	1:47	2:01
2:04	2:16	2:23	2:32	2:44	2:55	3:05	3:15	3:23	3:37
3:40	3:51	3:58	4:06	4:17	4:25	4:34	4:44	4:52	5:06
5:09	5:20	5:27	5:35	5:46					

 All buses are accessible to persons with disabilities

Routes 136 & 137 operate as a combined route.

For schedules, alerts and updates, visit: mbta.com/schedules/136 mbta.com/schedules/137

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.

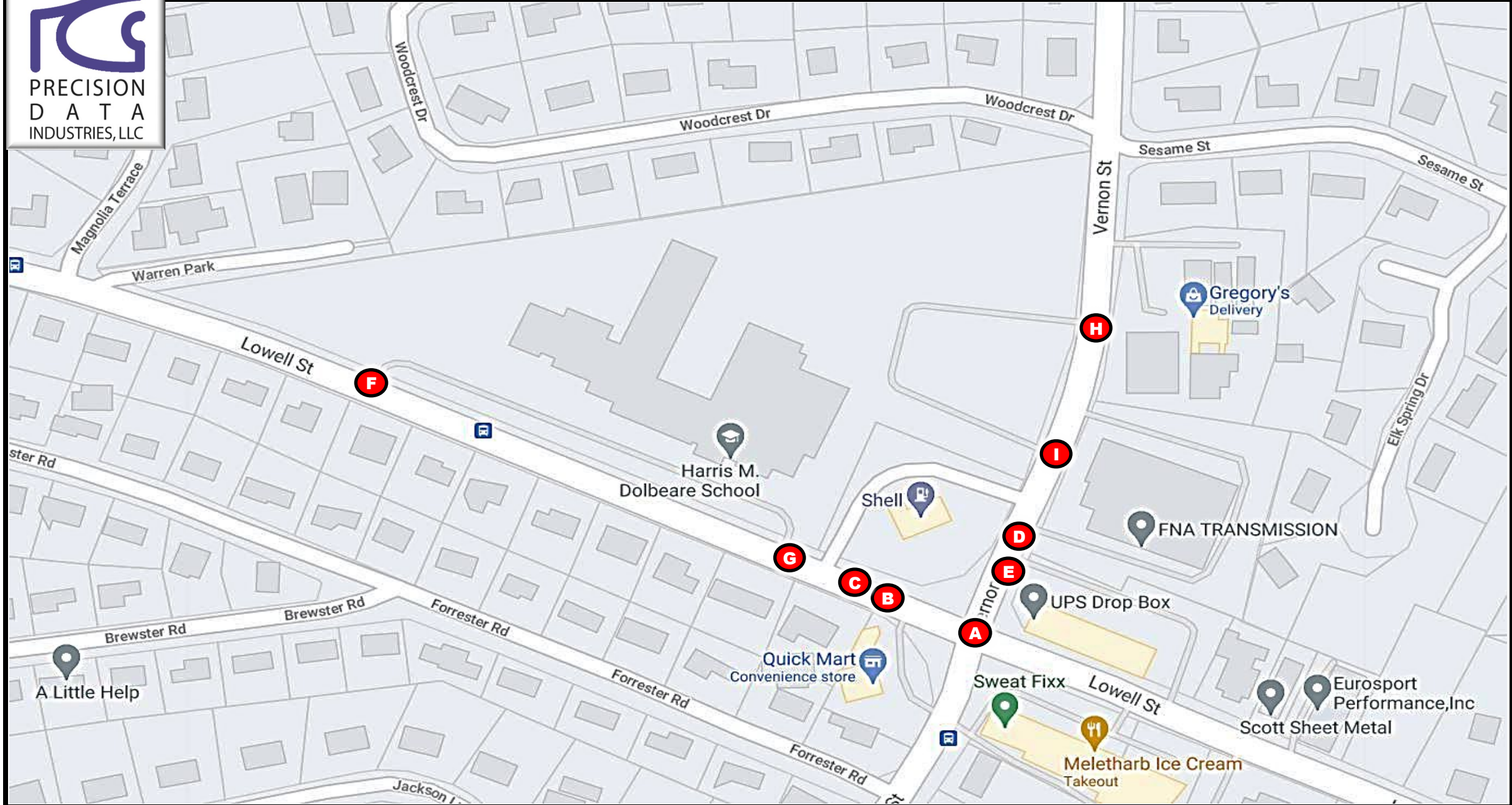
Route 137
Reading Depot -
Malden Center Station

TRAFFIC COUNT DATA



Location Map: 217901 Wakefield, MA

Precision Data Industries, LLC 46 Morton Street, Framingham, MA 01702 ph: 508-875-0100 email: datarequests@pdillc.com



Client: GPI	Engineer: S. Theriault	Site Code: NEX-2020177	Date: Wednesday 5/12/21	PDI Job # 217901	City, State: Wakefield, MA
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PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	2	33	9	0	44	11	44	3	0	58	11	18	16	0	45	14	16	2	0	32	179
7:15 AM	7	31	8	0	46	14	41	3	0	58	4	27	18	0	49	5	21	6	0	32	185
7:30 AM	7	27	4	0	38	12	37	3	0	52	6	25	12	0	43	7	24	11	0	42	175
7:45 AM	10	42	13	0	65	13	51	9	0	73	2	35	10	0	47	11	19	10	0	40	225
Total	26	133	34	0	193	50	173	18	0	241	23	105	56	0	184	37	80	29	0	146	764
8:00 AM	7	62	14	0	83	16	61	11	0	88	6	37	22	0	65	11	30	9	0	50	286
8:15 AM	16	54	24	0	94	23	66	15	0	104	11	59	23	0	93	15	62	12	0	89	380
8:30 AM	10	51	21	0	82	9	36	7	0	52	25	41	12	0	78	8	49	8	0	65	277
8:45 AM	5	55	12	0	72	11	47	11	0	69	6	32	11	0	49	11	49	9	0	69	259
Total	38	222	71	0	331	59	210	44	0	313	48	169	68	0	285	45	190	38	0	273	1202
Grand Total	64	355	105	0	524	109	383	62	0	554	71	274	124	0	469	82	270	67	0	419	1966
Approach %	12.2	67.7	20.0	0.0		19.7	69.1	11.2	0.0		15.1	58.4	26.4	0.0		19.6	64.4	16.0	0.0		
Total %	3.3	18.1	5.3	0.0	26.7	5.5	19.5	3.2	0.0	28.2	3.6	13.9	6.3	0.0	23.9	4.2	13.7	3.4	0.0	21.3	
Exiting Leg Total					450					446					499					571	1966
Cars	63	339	100	0	502	104	371	60	0	535	68	260	102	0	430	69	261	64	0	394	1861
% Cars	98.4	95.5	95.2	0.0	95.8	95.4	96.9	96.8	0.0	96.6	95.8	94.9	82.3	0.0	91.7	84.1	96.7	95.5	0.0	94.0	94.7
Exiting Leg Total					428					429					468					536	1861
Heavy Vehicles	1	16	5	0	22	5	12	2	0	19	3	14	22	0	39	13	9	3	0	25	105
% Heavy Vehicles	1.6	4.5	4.8	0.0	4.2	4.6	3.1	3.2	0.0	3.4	4.2	5.1	17.7	0.0	8.3	15.9	3.3	4.5	0.0	6.0	5.3
Exiting Leg Total					22					17					31					35	105

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	7	62	14	0	83	16	61	11	0	88	6	37	22	0	65	11	30	9	0	50	286
8:15 AM	16	54	24	0	94	23	66	15	0	104	11	59	23	0	93	15	62	12	0	89	380
8:30 AM	10	51	21	0	82	9	36	7	0	52	25	41	12	0	78	8	49	8	0	65	277
8:45 AM	5	55	12	0	72	11	47	11	0	69	6	32	11	0	49	11	49	9	0	69	259
Total Volume	38	222	71	0	331	59	210	44	0	313	48	169	68	0	285	45	190	38	0	273	1202
% Approach Total	11.5	67.1	21.5	0.0		18.8	67.1	14.1	0.0		16.8	59.3	23.9	0.0		16.5	69.6	13.9	0.0		
PHF	0.594	0.895	0.740	0.000	0.880	0.641	0.795	0.733	0.000	0.752	0.480	0.716	0.739	0.000	0.766	0.750	0.766	0.792	0.000	0.767	0.791
Cars	38	210	67	0	315	56	206	43	0	305	46	163	57	0	266	40	182	38	0	260	1146
Cars %	100.0	94.6	94.4	0.0	95.2	94.9	98.1	97.7	0.0	97.4	95.8	96.4	83.8	0.0	93.3	88.9	95.8	100.0	0.0	95.2	95.3
Heavy Vehicles	0	12	4	0	16	3	4	1	0	8	2	6	11	0	19	5	8	0	0	13	56
Heavy Vehicles %	0.0	5.4	5.6	0.0	4.8	5.1	1.9	2.3	0.0	2.6	4.2	3.6	16.2	0.0	6.7	11.1	4.2	0.0	0.0	4.8	4.7
Cars Enter Leg	38	210	67	0	315	56	206	43	0	305	46	163	57	0	266	40	182	38	0	260	1146
Heavy Enter Leg	0	12	4	0	16	3	4	1	0	8	2	6	11	0	19	5	8	0	0	13	56
Total Entering Leg	38	222	71	0	331	59	210	44	0	313	48	169	68	0	285	45	190	38	0	273	1202
Cars Exiting Leg					257					295					293					301	1146
Heavy Exiting Leg					9					14					18					15	56
Total Exiting Leg					266					309					311					316	1202

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	2	32	9	0	43	10	42	3	0	55	11	17	9	0	37	13	16	2	0	31	166
7:15 AM	7	31	8	0	46	13	39	3	0	55	4	24	16	0	44	2	21	5	0	28	173
7:30 AM	7	26	3	0	36	12	35	3	0	50	6	23	10	0	39	5	23	9	0	37	162
7:45 AM	9	40	13	0	62	13	49	8	0	70	1	33	10	0	44	9	19	10	0	38	214
Total	25	129	33	0	187	48	165	17	0	230	22	97	45	0	164	29	79	26	0	134	715
8:00 AM	7	57	14	0	78	15	61	11	0	87	6	37	18	0	61	10	28	9	0	47	273
8:15 AM	16	53	23	0	92	23	66	14	0	103	11	55	19	0	85	14	60	12	0	86	366
8:30 AM	10	47	20	0	77	8	34	7	0	49	25	40	11	0	76	6	45	8	0	59	261
8:45 AM	5	53	10	0	68	10	45	11	0	66	4	31	9	0	44	10	49	9	0	68	246
Total	38	210	67	0	315	56	206	43	0	305	46	163	57	0	266	40	182	38	0	260	1146
Grand Total	63	339	100	0	502	104	371	60	0	535	68	260	102	0	430	69	261	64	0	394	1861
Approach %	12.5	67.5	19.9	0.0		19.4	69.3	11.2	0.0		15.8	60.5	23.7	0.0		17.5	66.2	16.2	0.0		
Total %	3.4	18.2	5.4	0.0	27.0	5.6	19.9	3.2	0.0	28.7	3.7	14.0	5.5	0.0	23.1	3.7	14.0	3.4	0.0	21.2	
Exiting Leg Total	428					429					468					536					1861

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	7	57	14	0	78	15	61	11	0	87	6	37	18	0	61	10	28	9	0	47	273
8:15 AM	16	53	23	0	92	23	66	14	0	103	11	55	19	0	85	14	60	12	0	86	366
8:30 AM	10	47	20	0	77	8	34	7	0	49	25	40	11	0	76	6	45	8	0	59	261
8:45 AM	5	53	10	0	68	10	45	11	0	66	4	31	9	0	44	10	49	9	0	68	246
Total Volume	38	210	67	0	315	56	206	43	0	305	46	163	57	0	266	40	182	38	0	260	1146
% Approach Total	12.1	66.7	21.3	0.0		18.4	67.5	14.1	0.0		17.3	61.3	21.4	0.0		15.4	70.0	14.6	0.0		
PHF	0.594	0.921	0.728	0.000	0.856	0.609	0.780	0.768	0.000	0.740	0.460	0.741	0.750	0.000	0.782	0.714	0.758	0.792	0.000	0.756	0.783
Entering Leg	38	210	67	0	315	56	206	43	0	305	46	163	57	0	266	40	182	38	0	260	1146
Exiting Leg	257					295					293					301					1146
Total	572					600					559					561					2292

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	1	2	0	0	3	0	1	7	0	8	1	0	0	0	1	13
7:15 AM	0	0	0	0	0	1	2	0	0	3	0	3	2	0	5	3	0	1	0	4	12
7:30 AM	0	1	1	0	2	0	2	0	0	2	0	2	2	0	4	2	1	2	0	5	13
7:45 AM	1	2	0	0	3	0	2	1	0	3	1	2	0	0	3	2	0	0	0	2	11
Total	1	4	1	0	6	2	8	1	0	11	1	8	11	0	20	8	1	3	0	12	49
8:00 AM	0	5	0	0	5	1	0	0	0	1	0	0	4	0	4	1	2	0	0	3	13
8:15 AM	0	1	1	0	2	0	0	1	0	1	0	4	4	0	8	1	2	0	0	3	14
8:30 AM	0	4	1	0	5	1	2	0	0	3	0	1	1	0	2	2	4	0	0	6	16
8:45 AM	0	2	2	0	4	1	2	0	0	3	2	1	2	0	5	1	0	0	0	1	13
Total	0	12	4	0	16	3	4	1	0	8	2	6	11	0	19	5	8	0	0	13	56
Grand Total	1	16	5	0	22	5	12	2	0	19	3	14	22	0	39	13	9	3	0	25	105
Approach %	4.5	72.7	22.7	0.0		26.3	63.2	10.5	0.0		7.7	35.9	56.4	0.0		52.0	36.0	12.0	0.0		
Total %	1.0	15.2	4.8	0.0	21.0	4.8	11.4	1.9	0.0	18.1	2.9	13.3	21.0	0.0	37.1	12.4	8.6	2.9	0.0	23.8	
Exiting Leg Total	22					17					31					35					105
Buses	0	0	1	0	1	0	3	1	0	4	0	1	8	0	9	4	1	1	0	6	20
% Buses	0.0	0.0	20.0	0.0	4.5	0.0	25.0	50.0	0.0	21.1	0.0	7.1	36.4	0.0	23.1	30.8	11.1	33.3	0.0	24.0	19.0
Exiting Leg Total	2					2					5					11					20
Single-Unit Trucks	1	13	3	0	17	5	7	1	0	13	2	8	10	0	20	5	6	2	0	13	63
% Single-Unit	100.0	81.3	60.0	0.0	77.3	100.0	58.3	50.0	0.0	68.4	66.7	57.1	45.5	0.0	51.3	38.5	66.7	66.7	0.0	52.0	60.0
Exiting Leg Total	15					11					19					18					63
Articulated Trucks	0	3	1	0	4	0	2	0	0	2	1	5	4	0	10	4	2	0	0	6	22
% Articulated	0.0	18.8	20.0	0.0	18.2	0.0	16.7	0.0	0.0	10.5	33.3	35.7	18.2	0.0	25.6	30.8	22.2	0.0	0.0	24.0	21.0
Exiting Leg Total	5					4					7					6					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	5	0	0	5	1	0	0	0	1	0	0	4	0	4	1	2	0	0	3	13
8:15 AM	0	1	1	0	2	0	0	1	0	1	0	4	4	0	8	1	2	0	0	3	14
8:30 AM	0	4	1	0	5	1	2	0	0	3	0	1	1	0	2	2	4	0	0	6	16
8:45 AM	0	2	2	0	4	1	2	0	0	3	2	1	2	0	5	1	0	0	0	1	13
Total Volume	0	12	4	0	16	3	4	1	0	8	2	6	11	0	19	5	8	0	0	13	56
% Approach Total	0.0	75.0	25.0	0.0		37.5	50.0	12.5	0.0		10.5	31.6	57.9	0.0		38.5	61.5	0.0	0.0		
PHF	0.000	0.600	0.500	0.000	0.800	0.750	0.500	0.250	0.000	0.667	0.250	0.375	0.688	0.000	0.594	0.625	0.500	0.000	0.000	0.542	0.875
Buses	0	0	0	0	0	0	1	0	0	1	0	0	5	0	5	1	0	0	0	1	7
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	12.5	0.0	0.0	45.5	0.0	26.3	20.0	0.0	0.0	0.0	7.7	12.5
Single-Unit Trucks	0	10	3	0	13	3	3	1	0	7	1	2	4	0	7	1	6	0	0	7	34
Single-Unit %	0.0	83.3	75.0	0.0	81.3	100.0	75.0	100.0	0.0	87.5	50.0	33.3	36.4	0.0	36.8	20.0	75.0	0.0	0.0	53.8	60.7
Articulated Trucks	0	2	1	0	3	0	0	0	0	0	1	4	2	0	7	3	2	0	0	5	15
Articulated %	0.0	16.7	25.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0	50.0	66.7	18.2	0.0	36.8	60.0	25.0	0.0	0.0	38.5	26.8
Buses	0	0	0	0	0	0	1	0	0	1	0	0	5	0	5	1	0	0	0	1	7
Single-Unit Trucks	0	10	3	0	13	3	3	1	0	7	1	2	4	0	7	1	6	0	0	7	34
Articulated Trucks	0	2	1	0	3	0	0	0	0	0	1	4	2	0	7	3	2	0	0	5	15
Total Entering Leg	0	12	4	0	16	3	4	1	0	8	2	6	11	0	19	5	8	0	0	13	56
Buses	0					0					1					6					7
Single-Unit Trucks	5					10					12					7					34
Articulated Trucks	4					4					5					2					15
Total Exiting Leg	9					14					18					15					56

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	
7:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2	1	1	0	4	6	
7:45 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	1	3	
Total	0	0	1	0	1	0	2	1	0	3	0	1	3	0	4	3	1	1	0	5	13	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	3	
Total	0	0	0	0	0	0	1	0	0	1	0	0	5	0	5	1	0	0	0	1	7	
Grand Total	0	0	1	0	1	0	3	1	0	4	0	1	8	0	9	4	1	1	0	6	20	
Approach %	0.0	0.0	100.0	0.0		0.0	75.0	25.0	0.0		0.0	11.1	88.9	0.0		66.7	16.7	16.7	0.0			
Total %	0.0	0.0	5.0	0.0	5.0	0.0	15.0	5.0	0.0	20.0	0.0	5.0	40.0	0.0	45.0	20.0	5.0	5.0	0.0	30.0		
Exiting Leg Total						2					2					5					11	20

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	
7:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2	1	1	0	4	6	
7:45 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	1	3	
Total Volume	0	0	1	0	1	0	2	1	0	3	0	1	3	0	4	3	1	1	0	5	13	
% Approach Total	0.0	0.0	100.0	0.0		0.0	66.7	33.3	0.0		0.0	25.0	75.0	0.0		60.0	20.0	20.0	0.0			
PHF	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.250	0.000	0.375	0.000	0.250	0.750	0.000	0.500	0.375	0.250	0.250	0.000	0.313	0.542	
Entering Leg	0	0	1	0	1	0	2	1	0	3	0	1	3	0	4	3	1	1	0	5	13	
Exiting Leg						2					2					4					5	13
Total						3					5					8					10	26

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	1	1	0	0	2	0	1	5	0	6	1	0	0	0	1	10
7:15 AM	0	0	0	0	0	1	1	0	0	2	0	2	0	0	2	2	0	1	0	3	7
7:30 AM	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	0	1	0	1	5
7:45 AM	1	1	0	0	2	0	1	0	0	1	1	2	0	0	3	1	0	0	0	1	7
Total	1	3	0	0	4	2	4	0	0	6	1	6	6	0	13	4	0	2	0	6	29
8:00 AM	0	3	0	0	3	1	0	0	0	1	0	0	2	0	2	1	1	0	0	2	8
8:15 AM	0	1	0	0	1	0	0	1	0	1	0	1	2	0	3	0	1	0	0	1	6
8:30 AM	0	4	1	0	5	1	2	0	0	3	0	1	0	0	1	0	4	0	0	4	13
8:45 AM	0	2	2	0	4	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	7
Total	0	10	3	0	13	3	3	1	0	7	1	2	4	0	7	1	6	0	0	7	34
Grand Total	1	13	3	0	17	5	7	1	0	13	2	8	10	0	20	5	6	2	0	13	63
Approach %	5.9	76.5	17.6	0.0		38.5	53.8	7.7	0.0		10.0	40.0	50.0	0.0		38.5	46.2	15.4	0.0		
Total %	1.6	20.6	4.8	0.0	27.0	7.9	11.1	1.6	0.0	20.6	3.2	12.7	15.9	0.0	31.7	7.9	9.5	3.2	0.0	20.6	
Exiting Leg Total	15					11					19					18					63

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	1	1	0	0	2	0	1	0	0	1	1	2	0	0	3	1	0	0	0	1	7
8:00 AM	0	3	0	0	3	1	0	0	0	1	0	0	2	0	2	1	1	0	0	2	8
8:15 AM	0	1	0	0	1	0	0	1	0	1	0	1	2	0	3	0	1	0	0	1	6
8:30 AM	0	4	1	0	5	1	2	0	0	3	0	1	0	0	1	0	4	0	0	4	13
Total Volume	1	9	1	0	11	2	3	1	0	6	1	4	4	0	9	2	6	0	0	8	34
% Approach Total	9.1	81.8	9.1	0.0		33.3	50.0	16.7	0.0		11.1	44.4	44.4	0.0		25.0	75.0	0.0	0.0		
PHF	0.250	0.563	0.250	0.000	0.550	0.500	0.375	0.250	0.000	0.500	0.250	0.500	0.500	0.000	0.750	0.500	0.375	0.000	0.000	0.500	0.654
Entering Leg	1	9	1	0	11	2	3	1	0	6	1	4	4	0	9	2	6	0	0	8	34
Exiting Leg	6					8					12					8					34
Total	17					14					21					16					68

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	2	0	0	2	0	1	2	0	3	1	0	0	0	1	0	0	0	0	0	7
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
8:15 AM	0	0	1	0	1	0	0	0	0	0	0	3	1	0	4	1	1	0	0	2	0	0	0	0	0	7
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	2	1	0	3	0	0	0	0	0	1	4	2	0	7	3	2	0	0	5	0	0	0	0	0	15
Grand Total	0	3	1	0	4	0	2	0	0	2	1	5	4	0	10	4	2	0	0	6	0	0	0	0	0	22
Approach %	0.0	75.0	25.0	0.0		0.0	100.0	0.0	0.0		10.0	50.0	40.0	0.0		66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	13.6	4.5	0.0	18.2	0.0	9.1	0.0	0.0	9.1	4.5	22.7	18.2	0.0	45.5	18.2	9.1	0.0	0.0	27.3	0.0	0.0	0.0	0.0		
Exiting Leg Total						5					4					7					6	22				

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
8:15 AM	0	0	1	0	1	0	0	0	0	0	0	3	1	0	4	1	1	0	0	2	0	0	0	0	0	7
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	2	1	0	3	0	0	0	0	0	1	4	2	0	7	3	2	0	0	5	0	0	0	0	0	15
% Approach Total	0.0	66.7	33.3	0.0		0.0	0.0	0.0	0.0		14.3	57.1	28.6	0.0		60.0	40.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.250	0.333	0.500	0.000	0.438	0.375	0.500	0.000	0.000	0.625	0.000	0.000	0.000	0.000		0.536
Entering Leg	0	2	1	0	3	0	0	0	0	0	1	4	2	0	7	3	2	0	0	5	0	0	0	0	0	15
Exiting Leg						4					4					5					2	15				
Total						7					4					12					7	30				

PDI File #: 217901 A
 Location: N: Vernon Street S: Vernon Street
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Bicycles (on Roadway and Crosswalks)

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	2
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	1	1	3	
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	
Grand Total	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	1	0	0	0	1	0	0	0	0	1	1	2	6	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	0.0	16.7	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	16.7	16.7	33.3		
Exiting Leg Total	0							0							0							6	6						

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	2
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	
Total Volume	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	1	0	0	0	1	0	0	0	0	1	1	2	6	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.375	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.250	0.500	0.750		
Entering Leg	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	1	0	0	0	1	0	0	0	0	1	1	2	6	
Exiting Leg	0							0							0							6	6						
Total	0							3							1							8	12						

PDI File #: 217901 A
 Location: N: Vernon Street S: Vernon Street
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Pedestrians

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total							
	from North							from East							from South							from West														
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total								
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2								
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1								
7:45 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	3								
Total	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	1	1	6							
8:00 AM	0	0	0	0	0	4	4	0	0	0	0	0	1	1	0	0	0	0	3	0	3	0	0	0	0	20	2	22	30							
8:15 AM	0	0	0	0	6	13	19	0	0	0	0	6	12	18	0	0	0	0	0	2	2	0	0	0	0	22	9	31	70							
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3								
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2								
Total	0	0	0	0	6	17	23	0	0	0	0	6	13	19	0	0	0	0	4	2	6	0	0	0	0	43	14	57	105							
Grand Total	0	0	0	0	7	17	24	0	0	0	0	6	13	19	0	0	0	0	6	4	10	0	0	0	0	43	15	58	111							
Approach %	0	0	0	0	29.2	70.8		0	0	0	0	31.6	68.4		0	0	0	0	60	40		0	0	0	0	74.1	25.9									
Total %	0	0	0	0	6.31	15.3	21.6	0	0	0	0	5.41	11.7	17.1	0	0	0	0	5.41	3.6	9.01	0	0	0	0	38.7	13.5	52.3								
Exiting Leg Total								24							19							10							58							111

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total							
	from North							from East							from South							from West														
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total								
7:45 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	3							
8:00 AM	0	0	0	0	0	4	4	0	0	0	0	0	1	1	0	0	0	0	3	0	3	0	0	0	0	20	2	22	30							
8:15 AM	0	0	0	0	6	13	19	0	0	0	0	6	12	18	0	0	0	0	0	2	2	0	0	0	0	22	9	31	70							
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3								
Total Volume	0	0	0	0	7	17	24	0	0	0	0	6	13	19	0	0	0	0	4	3	7	0	0	0	0	43	13	56	106							
% Approach Total	0.0	0.0	0.0	0.0	29.2	70.8		0.0	0.0	0.0	0.0	31.6	68.4		0.0	0.0	0.0	0.0	57.1	42.9		0.0	0.0	0.0	0.0	76.8	23.2									
PHF	0.000	0.000	0.000	0.000	0.292	0.327	0.316	0.000	0.000	0.000	0.000	0.250	0.271	0.264	0.000	0.000	0.000	0.000	0.333	0.375	0.583	0.000	0.000	0.000	0.000	0.489	0.361	0.452	0.379							
Entering Leg	0	0	0	0	7	17	24	0	0	0	0	6	13	19	0	0	0	0	4	3	7	0	0	0	0	43	13	56	106							
Exiting Leg								24							19							7							56							106
Total								48							38							14							112							212

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	6	38	11	0	55	20	38	12	0	70	15	51	34	0	100	14	34	6	0	54	279
2:15 PM	8	53	23	0	84	17	38	12	0	67	9	40	18	0	67	16	42	5	0	63	281
2:30 PM	10	56	20	0	86	11	33	11	0	55	26	57	16	0	99	13	39	2	0	54	294
2:45 PM	9	50	18	0	77	25	40	15	0	80	16	66	14	0	96	15	47	8	0	70	323
Total	33	197	72	0	302	73	149	50	0	272	66	214	82	0	362	58	162	21	0	241	1177
3:00 PM	10	29	11	0	50	21	46	20	0	87	14	49	9	0	72	8	40	7	0	55	264
3:15 PM	15	46	14	0	75	15	27	17	0	59	12	58	11	0	81	14	44	10	0	68	283
3:30 PM	3	55	14	0	72	13	40	20	0	73	14	62	8	0	84	15	57	13	0	85	314
3:45 PM	14	47	12	0	73	18	39	10	0	67	8	45	17	0	70	17	42	16	0	75	285
Total	42	177	51	0	270	67	152	67	0	286	48	214	45	0	307	54	183	46	0	283	1146
4:00 PM	18	38	10	0	66	20	42	11	0	73	16	64	16	0	96	12	47	18	0	77	312
4:15 PM	9	58	13	0	80	11	38	9	0	58	9	47	14	0	70	8	55	10	0	73	281
4:30 PM	10	48	9	0	67	18	45	8	0	71	12	63	15	0	90	14	46	13	0	73	301
4:45 PM	7	46	12	0	65	16	33	11	0	60	8	54	20	0	82	19	46	12	0	77	284
Total	44	190	44	0	278	65	158	39	0	262	45	228	65	0	338	53	194	53	0	300	1178
5:00 PM	8	53	17	0	78	13	38	15	0	66	7	61	16	0	84	15	53	10	0	78	306
5:15 PM	5	39	22	0	66	10	33	17	0	60	12	61	14	0	87	13	59	12	0	84	297
5:30 PM	7	50	10	0	67	13	37	7	0	57	10	54	12	0	76	12	45	10	0	67	267
5:45 PM	8	46	14	0	68	15	27	15	0	57	14	55	16	0	85	11	49	20	0	80	290
Total	28	188	63	0	279	51	135	54	0	240	43	231	58	0	332	51	206	52	0	309	1160
Grand Total	147	752	230	0	1129	256	594	210	0	1060	202	887	250	0	1339	216	745	172	0	1133	4661
Approach %	13.0	66.6	20.4	0.0		24.2	56.0	19.8	0.0		15.1	66.2	18.7	0.0		19.1	65.8	15.2	0.0		
Total %	3.2	16.1	4.9	0.0	24.2	5.5	12.7	4.5	0.0	22.7	4.3	19.0	5.4	0.0	28.7	4.6	16.0	3.7	0.0	24.3	
Exiting Leg Total	1315					1177					1178					991					4661
Cars	144	737	228	0	1109	253	588	206	0	1047	199	868	230	0	1297	184	734	169	0	1087	4540
% Cars	98.0	98.0	99.1	0.0	98.2	98.8	99.0	98.1	0.0	98.8	98.5	97.9	92.0	0.0	96.9	85.2	98.5	98.3	0.0	95.9	97.4
Exiting Leg Total	1290					1161					1127					962					4540
Heavy Vehicles	3	15	2	0	20	3	6	4	0	13	3	19	20	0	42	32	11	3	0	46	121
% Heavy Vehicles	2.0	2.0	0.9	0.0	1.8	1.2	1.0	1.9	0.0	1.2	1.5	2.1	8.0	0.0	3.1	14.8	1.5	1.7	0.0	4.1	2.6
Exiting Leg Total	25					16					51					29					121

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:15 PM	15	46	14	0	75	15	27	17	0	59	12	58	11	0	81	14	44	10	0	68	283
3:30 PM	3	55	14	0	72	13	40	20	0	73	14	62	8	0	84	15	57	13	0	85	314
3:45 PM	14	47	12	0	73	18	39	10	0	67	8	45	17	0	70	17	42	16	0	75	285
4:00 PM	18	38	10	0	66	20	42	11	0	73	16	64	16	0	96	12	47	18	0	77	312
Total Volume	50	186	50	0	286	66	148	58	0	272	50	229	52	0	331	58	190	57	0	305	1194
% Approach Total	17.5	65.0	17.5	0.0		24.3	54.4	21.3	0.0		15.1	69.2	15.7	0.0		19.0	62.3	18.7	0.0		
PHF	0.694	0.845	0.893	0.000	0.953	0.825	0.881	0.725	0.000	0.932	0.781	0.895	0.765	0.000	0.862	0.853	0.833	0.792	0.000	0.897	0.951
Cars	50	179	50	0	279	65	147	57	0	269	49	223	46	0	318	48	188	56	0	292	1158
Cars %	100.0	96.2	100.0	0.0	97.6	98.5	99.3	98.3	0.0	98.9	98.0	97.4	88.5	0.0	96.1	82.8	98.9	98.2	0.0	95.7	97.0
Heavy Vehicles	0	7	0	0	7	1	1	1	0	3	1	6	6	0	13	10	2	1	0	13	36
Heavy Vehicles %	0.0	3.8	0.0	0.0	2.4	1.5	0.7	1.7	0.0	1.1	2.0	2.6	11.5	0.0	3.9	17.2	1.1	1.8	0.0	4.3	3.0
Cars Enter Leg	50	179	50	0	279	65	147	57	0	269	49	223	46	0	318	48	188	56	0	292	1158
Heavy Enter Leg	0	7	0	0	7	1	1	1	0	3	1	6	6	0	13	10	2	1	0	13	36
Total Entering Leg	50	186	50	0	286	66	148	58	0	272	50	229	52	0	331	58	190	57	0	305	1194
Cars Exiting Leg	344					287					284					243					1158
Heavy Exiting Leg	8					3					18					7					36
Total Exiting Leg	352					290					302					250					1194

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	6	37	11	0	54	20	38	12	0	70	14	51	33	0	98	12	31	6	0	49	271
2:15 PM	8	51	22	0	81	17	38	12	0	67	9	39	18	0	66	14	41	5	0	60	274
2:30 PM	10	53	20	0	83	11	32	11	0	54	26	56	13	0	95	10	39	2	0	51	283
2:45 PM	9	49	18	0	76	25	40	15	0	80	16	64	13	0	93	13	47	7	0	67	316
Total	33	190	71	0	294	73	148	50	0	271	65	210	77	0	352	49	158	20	0	227	1144
3:00 PM	10	29	10	0	49	21	45	20	0	86	14	45	9	0	68	5	40	7	0	52	255
3:15 PM	15	45	14	0	74	14	26	16	0	56	11	58	9	0	78	12	44	10	0	66	274
3:30 PM	3	52	14	0	69	13	40	20	0	73	14	59	7	0	80	13	56	13	0	82	304
3:45 PM	14	45	12	0	71	18	39	10	0	67	8	44	15	0	67	13	42	16	0	71	276
Total	42	171	50	0	263	66	150	66	0	282	47	206	40	0	293	43	182	46	0	271	1109
4:00 PM	18	37	10	0	65	20	42	11	0	73	16	62	15	0	93	10	46	17	0	73	304
4:15 PM	9	58	13	0	80	11	37	8	0	56	9	45	13	0	67	7	54	10	0	71	274
4:30 PM	10	48	9	0	67	18	45	8	0	71	12	63	14	0	89	13	46	13	0	72	299
4:45 PM	5	45	12	0	62	15	33	9	0	57	7	52	18	0	77	17	46	11	0	74	270
Total	42	188	44	0	274	64	157	36	0	257	44	222	60	0	326	47	192	51	0	290	1147
5:00 PM	7	53	17	0	77	12	38	15	0	65	7	61	15	0	83	12	53	10	0	75	300
5:15 PM	5	39	22	0	66	10	33	17	0	60	12	60	13	0	85	11	59	12	0	82	293
5:30 PM	7	50	10	0	67	13	35	7	0	55	10	54	10	0	74	12	43	10	0	65	261
5:45 PM	8	46	14	0	68	15	27	15	0	57	14	55	15	0	84	10	47	20	0	77	286
Total	27	188	63	0	278	50	133	54	0	237	43	230	53	0	326	45	202	52	0	299	1140
Grand Total	144	737	228	0	1109	253	588	206	0	1047	199	868	230	0	1297	184	734	169	0	1087	4540
Approach %	13.0	66.5	20.6	0.0		24.2	56.2	19.7	0.0		15.3	66.9	17.7	0.0		16.9	67.5	15.5	0.0		
Total %	3.2	16.2	5.0	0.0	24.4	5.6	13.0	4.5	0.0	23.1	4.4	19.1	5.1	0.0	28.6	4.1	16.2	3.7	0.0	23.9	
Exiting Leg Total	1290					1161					1127					962					4540

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:30 PM	10	48	9	0	67	18	45	8	0	71	12	63	14	0	89	13	46	13	0	72	299
4:45 PM	5	45	12	0	62	15	33	9	0	57	7	52	18	0	77	17	46	11	0	74	270
5:00 PM	7	53	17	0	77	12	38	15	0	65	7	61	15	0	83	12	53	10	0	75	300
5:15 PM	5	39	22	0	66	10	33	17	0	60	12	60	13	0	85	11	59	12	0	82	293
Total Volume	27	185	60	0	272	55	149	49	0	253	38	236	60	0	334	53	204	46	0	303	1162
% Approach Total	9.9	68.0	22.1	0.0		21.7	58.9	19.4	0.0		11.4	70.7	18.0	0.0		17.5	67.3	15.2	0.0		
PHF	0.675	0.873	0.682	0.000	0.883	0.764	0.828	0.721	0.000	0.891	0.792	0.937	0.833	0.000	0.938	0.779	0.864	0.885	0.000	0.924	0.968
Entering Leg	27	185	60	0	272	55	149	49	0	253	38	236	60	0	334	53	204	46	0	303	1162
Exiting Leg	337					302					287					236					1162
Total	609					555					621					539					2324

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	2	3	0	0	5	8
2:15 PM	0	2	1	0	3	0	0	0	0	0	0	1	0	0	1	2	1	0	0	3	7
2:30 PM	0	3	0	0	3	0	1	0	0	1	0	1	3	0	4	3	0	0	0	3	11
2:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	2	0	1	0	3	7
Total	0	7	1	0	8	0	1	0	0	1	1	4	5	0	10	9	4	1	0	14	33
3:00 PM	0	0	1	0	1	0	1	0	0	1	0	4	0	0	4	3	0	0	0	3	9
3:15 PM	0	1	0	0	1	1	1	1	0	3	1	0	2	0	3	2	0	0	0	2	9
3:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	2	1	0	0	3	10
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	2	0	3	4	0	0	0	4	9
Total	0	6	1	0	7	1	2	1	0	4	1	8	5	0	14	11	1	0	0	12	37
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	2	1	1	0	4	8
4:15 PM	0	0	0	0	0	0	1	1	0	2	0	2	1	0	3	1	1	0	0	2	7
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
4:45 PM	2	1	0	0	3	1	0	2	0	3	1	2	2	0	5	2	0	1	0	3	14
Total	2	2	0	0	4	1	1	3	0	5	1	6	5	0	12	6	2	2	0	10	31
5:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	1	0	1	3	0	0	0	3	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	4
5:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	0	2	0	0	2	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	3	4
Total	1	0	0	0	1	1	2	0	0	3	0	1	5	0	6	6	4	0	0	10	20
Grand Total	3	15	2	0	20	3	6	4	0	13	3	19	20	0	42	32	11	3	0	46	121
Approach %	15.0	75.0	10.0	0.0		23.1	46.2	30.8	0.0		7.1	45.2	47.6	0.0		69.6	23.9	6.5	0.0		
Total %	2.5	12.4	1.7	0.0	16.5	2.5	5.0	3.3	0.0	10.7	2.5	15.7	16.5	0.0	34.7	26.4	9.1	2.5	0.0	38.0	
Exiting Leg Total	25					16					51					29					121
Buses	0	0	1	0	1	0	0	2	0	2	0	1	13	0	14	0	1	0	0	1	18
% Buses	0.0	0.0	50.0	0.0	5.0	0.0	0.0	50.0	0.0	15.4	0.0	5.3	65.0	0.0	33.3	0.0	9.1	0.0	0.0	2.2	14.9
Exiting Leg Total	1					2					2					13					18
Single-Unit Trucks	3	12	1	0	16	3	5	1	0	9	3	15	5	0	23	30	9	3	0	42	90
% Single-Unit	100.0	80.0	50.0	0.0	80.0	100.0	83.3	25.0	0.0	69.2	100.0	78.9	25.0	0.0	54.8	93.8	81.8	100.0	0.0	91.3	74.4
Exiting Leg Total	21					13					43					13					90
Articulated Trucks	0	3	0	0	3	0	1	1	0	2	0	3	2	0	5	2	1	0	0	3	13
% Articulated	0.0	20.0	0.0	0.0	15.0	0.0	16.7	25.0	0.0	15.4	0.0	15.8	10.0	0.0	11.9	6.3	9.1	0.0	0.0	6.5	10.7
Exiting Leg Total	3					1					6					3					13

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	0	0	1	0	1	0	1	0	0	1	0	4	0	0	4	3	0	0	0	3	9
3:15 PM	0	1	0	0	1	1	1	1	0	3	1	0	2	0	3	2	0	0	0	2	9
3:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	2	1	0	0	3	10
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	2	0	3	4	0	0	0	4	9
Total Volume	0	6	1	0	7	1	2	1	0	4	1	8	5	0	14	11	1	0	0	12	37
% Approach Total	0.0	85.7	14.3	0.0		25.0	50.0	25.0	0.0		7.1	57.1	35.7	0.0		91.7	8.3	0.0	0.0		
PHF	0.000	0.500	0.250	0.000	0.583	0.250	0.500	0.250	0.000	0.333	0.250	0.500	0.625	0.000	0.875	0.688	0.250	0.000	0.000	0.750	0.925
Buses	0	0	1	0	1	0	0	1	0	1	0	1	4	0	5	0	0	0	0	0	7
Buses %	0.0	0.0	100.0	0.0	14.3	0.0	0.0	100.0	0.0	25.0	0.0	12.5	80.0	0.0	35.7	0.0	0.0	0.0	0.0	0.0	18.9
Single-Unit Trucks	0	3	0	0	3	1	1	0	0	2	1	5	1	0	7	10	1	0	0	11	23
Single-Unit %	0.0	50.0	0.0	0.0	42.9	100.0	50.0	0.0	0.0	50.0	100.0	62.5	20.0	0.0	50.0	90.9	100.0	0.0	0.0	91.7	62.2
Articulated Trucks	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	1	0	0	0	1	7
Articulated %	0.0	50.0	0.0	0.0	42.9	0.0	50.0	0.0	0.0	25.0	0.0	25.0	0.0	0.0	14.3	9.1	0.0	0.0	0.0	8.3	18.9
Buses	0	0	1	0	1	0	0	1	0	1	0	1	4	0	5	0	0	0	0	0	7
Single-Unit Trucks	0	3	0	0	3	1	1	0	0	2	1	5	1	0	7	10	1	0	0	11	23
Articulated Trucks	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	1	0	0	0	1	7
Total Entering Leg	0	6	1	0	7	1	2	1	0	4	1	8	5	0	14	11	1	0	0	12	37
Buses	1					1					1					4					7
Single-Unit Trucks	6					2					13					2					23
Articulated Trucks	2					0					4					1					7
Total Exiting Leg	9					3					18					7					37

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

Vernon Street					Lowell Street					Vernon Street					Lowell Street					
from North					from East					from South					from West					
Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Buses

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	1	0	1	0	0	1	0	1	0	1	4	0	5	0	0	0	0	0	0	0	0	0	0	7
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	1	0	1	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	1	0	1	0	0	2	0	2	0	1	13	0	14	0	1	0	0	1	0	0	0	0	1	18
Approach %	0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		0.0	7.1	92.9	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	5.6	0.0	5.6	0.0	0.0	11.1	0.0	11.1	0.0	5.6	72.2	0.0	77.8	0.0	5.6	0.0	0.0	5.6						
Exiting Leg Total	1					2					2					13					18					

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.375	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	3
Exiting Leg	0					1					0					2					3					
Total	0					1					2					3					6					

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Single-Unit Trucks

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	2	3	0	0	5	8
2:15 PM	0	2	1	0	3	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	6
2:30 PM	0	3	0	0	3	0	1	0	0	1	0	1	1	0	2	3	0	0	0	3	9
2:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	5
Total	0	7	1	0	8	0	1	0	0	1	1	4	2	0	7	8	3	1	0	12	28
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3	0	0	0	3	6
3:15 PM	0	1	0	0	1	1	0	0	0	1	1	0	1	0	2	2	0	0	0	2	6
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	2	1	0	0	3	7
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	4
Total	0	3	0	0	3	1	1	0	0	2	1	5	1	0	7	10	1	0	0	11	23
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	2	1	1	0	4	7
4:15 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	1	1	0	0	2	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
4:45 PM	2	1	0	0	3	1	0	1	0	2	1	2	0	0	3	2	0	1	0	3	11
Total	2	2	0	0	4	1	1	1	0	3	1	6	1	0	8	6	2	2	0	10	25
5:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
5:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
Total	1	0	0	0	1	1	2	0	0	3	0	0	1	0	1	6	3	0	0	9	14
Grand Total	3	12	1	0	16	3	5	1	0	9	3	15	5	0	23	30	9	3	0	42	90
Approach %	18.8	75.0	6.3	0.0		33.3	55.6	11.1	0.0		13.0	65.2	21.7	0.0		71.4	21.4	7.1	0.0		
Total %	3.3	13.3	1.1	0.0	17.8	3.3	5.6	1.1	0.0	10.0	3.3	16.7	5.6	0.0	25.6	33.3	10.0	3.3	0.0	46.7	
Exiting Leg Total	21					13					43					13					90

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	2	3	0	0	5	8
2:15 PM	0	2	1	0	3	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	6
2:30 PM	0	3	0	0	3	0	1	0	0	1	0	1	1	0	2	3	0	0	0	3	9
2:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	5
Total Volume	0	7	1	0	8	0	1	0	0	1	1	4	2	0	7	8	3	1	0	12	28
% Approach Total	0.0	87.5	12.5	0.0		0.0	100.0	0.0	0.0		14.3	57.1	28.6	0.0		66.7	25.0	8.3	0.0		
PHF	0.000	0.583	0.250	0.000	0.667	0.000	0.250	0.000	0.000	0.250	0.250	0.500	0.500	0.000	0.875	0.667	0.250	0.250	0.000	0.600	0.778
Entering Leg	0	7	1	0	8	0	1	0	0	1	1	4	2	0	7	8	3	1	0	12	28
Exiting Leg	5					5					15					3					28
Total	13					6					22					15					56

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	3
Total	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	1	0	0	0	0	0	0	0	0	1	7
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	1	2
Grand Total	0	3	0	0	3	0	1	1	0	2	0	3	2	0	5	2	1	0	0	3					13	
Approach %	0.0	100.0	0.0	0.0		0.0	50.0	50.0	0.0		0.0	60.0	40.0	0.0		66.7	33.3	0.0	0.0							
Total %	0.0	23.1	0.0	0.0	23.1	0.0	7.7	7.7	0.0	15.4	0.0	23.1	15.4	0.0	38.5	15.4	7.7	0.0	0.0	23.1						
Exiting Leg Total	3					1					6					3					13					

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street					Lowell Street					Vernon Street					Lowell Street					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		100.0	0.0	0.0	0.0							
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.250					0.250	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2
Exiting Leg	0					0					1					1					2					
Total	0					0					2					2					4					

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
2:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	3		
3:00 PM	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	5	0	0	0	0	0	5		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	4		
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	4	4	9	0	0	0	0	0	0	11	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	3	6		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	2		
Total	0	1	0	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	2	3	0	0	0	0	3	3	6		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	
Grand Total	0	1	1	0	1	1	4	0	1	0	0	1	2	4	1	1	0	0	5	6	13	0	0	1	0	3	7	28	
Approach %	0.0	25.0	25.0	0.0	25.0	25.0		0.0	25.0	0.0	0.0	25.0	50.0		7.7	7.7	0.0	0.0	38.5	46.2		0.0	0.0	14.3	0.0	42.9	42.9		
Total %	0.0	3.6	3.6	0.0	3.6	3.6	14.3	0.0	3.6	0.0	0.0	3.6	7.1	14.3	3.6	3.6	0.0	0.0	17.9	21.4	46.4	0.0	0.0	3.6	0.0	10.7	10.7	25.0	
Exiting Leg Total	4							5							12							7							28

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street							Lowell Street							Vernon Street							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	5	0	0	0	0	0	0	5	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	4	
Total Volume	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	4	4	9	0	0	0	0	0	0	11	
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	11.1	0.0	0.0	44.4	44.4		0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.250	0.450	0.000	0.000	0.000	0.000	0.000	0.000	0.550	
Entering Leg	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	4	4	9	0	0	0	0	0	0	11	
Exiting Leg	2							1							8							0							11
Total	3							2							17							0							22

PDI File #: **217901 A**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Vernon Street								Lowell Street								Vernon Street								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:00 PM	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	6	0	6	0	0	0	0	12	0	12	22				
2:15 PM	0	0	0	0	8	3	11	0	0	0	0	10	3	13	0	0	0	0	3	12	15	0	0	0	0	7	25	32	71				
2:30 PM	0	0	0	0	4	0	4	0	0	0	0	4	0	4	0	0	0	0	0	6	6	0	0	0	0	0	23	23	37				
2:45 PM	0	0	0	0	0	4	4	0	0	0	0	0	5	5	0	0	0	0	2	1	3	0	0	0	0	3	3	6	18				
Total	0	0	0	0	12	9	21	0	0	0	0	14	10	24	0	0	0	0	11	19	30	0	0	0	0	22	51	73	148				
3:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	4	5	7					
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1					
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2					
Total	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4	4	8	11					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	1	3	4	7					
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2					
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2					
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	2					
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	3	6	9	13					
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	2	3					
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4	4					
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	3					
Total	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	3	1	4	0	0	0	0	3	3	6	18				
Grand Total	0	0	0	0	13	9	22	0	0	0	0	18	14	32	0	0	0	0	14	26	40	0	0	0	0	32	64	96	190				
Approach %	0	0	0	0	59.1	40.9		0	0	0	0	56.3	43.8		0	0	0	0	35	65		0	0	0	0	33.3	66.7						
Total %	0	0	0	0	6.84	4.74	11.6	0	0	0	0	9.47	7.37	16.8	0	0	0	0	7.37	13.7	21.1	0	0	0	0	16.8	33.7	50.5					
Exiting Leg Total	22							32							40							96							190				

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street								Lowell Street								Vernon Street								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:00 PM	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	6	0	6	0	0	0	0	12	0	12	22				
2:15 PM	0	0	0	0	8	3	11	0	0	0	0	10	3	13	0	0	0	0	3	12	15	0	0	0	0	7	25	32	71				
2:30 PM	0	0	0	0	4	0	4	0	0	0	0	4	0	4	0	0	0	0	0	6	6	0	0	0	0	0	23	23	37				
2:45 PM	0	0	0	0	0	4	4	0	0	0	0	0	5	5	0	0	0	0	2	1	3	0	0	0	0	3	3	6	18				
Total Volume	0	0	0	0	12	9	21	0	0	0	0	14	10	24	0	0	0	0	11	19	30	0	0	0	0	22	51	73	148				
% Approach Total	0.0	0.0	0.0	0.0	57.1	42.9		0.0	0.0	0.0	0.0	58.3	41.7		0.0	0.0	0.0	0.0	36.7	63.3		0.0	0.0	0.0	0.0	30.1	69.9						
PHF	0.000	0.000	0.000	0.000	0.375	0.563	0.477	0.000	0.000	0.000	0.000	0.350	0.500	0.462	0.000	0.000	0.000	0.000	0.458	0.396	0.500	0.000	0.000	0.000	0.000	0.458	0.510	0.570	0.521				
Entering Leg	0	0	0	0	12	9	21	0	0	0	0	14	10	24	0	0	0	0	11	19	30	0	0	0	0	22	51	73	148				
Exiting Leg	21							24							30							73							148				
Total	42							48							60							146							296				

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Cars and Heavy Vehicles (Combined)

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	0	61	0	0	62	0	0	0	0	0	0	0	32	0	1	0	33	0	0	0	0	0	0	95
7:15 AM	0	1	0	0	0	1	1	0	65	0	0	66	0	0	0	0	0	0	0	31	0	0	0	31	0	0	0	0	0	98	
7:30 AM	0	0	0	0	0	0	2	0	55	0	0	57	0	0	0	0	0	0	0	43	0	2	0	45	2	0	0	0	0	104	
7:45 AM	0	0	0	0	0	0	2	0	69	0	0	71	0	0	0	0	0	0	0	39	2	0	0	41	1	0	0	0	0	113	
Total	0	1	0	0	0	1	6	0	250	0	0	256	0	0	0	0	0	0	0	145	2	3	0	150	3	0	0	0	0	3	410
8:00 AM	0	1	0	0	0	1	3	0	86	0	0	89	0	0	0	0	0	0	0	53	2	4	0	59	4	0	0	0	0	4	153
8:15 AM	0	10	0	0	0	10	10	3	97	0	0	110	0	0	0	0	0	0	0	78	1	4	0	83	9	0	0	0	0	9	212
8:30 AM	0	3	0	0	0	3	0	0	57	0	0	57	0	0	0	0	0	0	0	64	0	2	0	66	1	0	0	0	0	1	127
8:45 AM	0	0	0	0	0	0	0	0	63	0	0	63	0	0	0	0	0	0	0	70	1	3	0	74	3	0	0	0	0	3	140
Total	0	14	0	0	0	14	13	3	303	0	0	319	0	0	0	0	0	0	0	265	4	13	0	282	17	0	0	0	0	17	632
Grand Total	0	15	0	0	0	15	19	3	553	0	0	575	0	0	0	0	0	0	0	410	6	16	0	432	20	0	0	0	0	20	1042
Approach %	0.0	100.0	0.0	0.0	0.0		3.3	0.5	96.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	94.9	1.4	3.7	0.0		100.0	0.0	0.0	0.0	0.0		
Total %	0.0	1.4	0.0	0.0	0.0	1.4	1.8	0.3	53.1	0.0	0.0	55.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.3	0.6	1.5	0.0	41.5	1.9	0.0	0.0	0.0	0.0	1.9	
Exiting Leg Total	25						410						0						588						19						1042
Cars	0	15	0	0	0	15	17	3	518	0	0	538	0	0	0	0	0	0	0	388	6	16	0	410	19	0	0	0	0	19	982
% Cars	0.0	100.0	0.0	0.0	0.0	100.0	89.5	100.0	93.7	0.0	0.0	93.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.6	100.0	100.0	0.0	94.9	95.0	0.0	0.0	0.0	0.0	95.0	94.2
Exiting Leg Total	23						388						0						552						19						982
Heavy Vehicles	0	0	0	0	0	0	2	0	35	0	0	37	0	0	0	0	0	0	0	22	0	0	0	22	1	0	0	0	0	1	60
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	6.3	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	5.1	5.0	0.0	0.0	0.0	0.0	5.0	5.8
Exiting Leg Total	2						22						0						36						0						60

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
8:00 AM	0	1	0	0	0	1	3	0	86	0	0	89	0	0	0	0	0	0	0	53	2	4	0	59	4	0	0	0	0	4	153
8:15 AM	0	10	0	0	0	10	10	3	97	0	0	110	0	0	0	0	0	0	0	78	1	4	0	83	9	0	0	0	0	9	212
8:30 AM	0	3	0	0	0	3	0	0	57	0	0	57	0	0	0	0	0	0	0	64	0	2	0	66	1	0	0	0	0	1	127
8:45 AM	0	0	0	0	0	0	0	0	63	0	0	63	0	0	0	0	0	0	0	70	1	3	0	74	3	0	0	0	0	3	140
Total Volume	0	14	0	0	0	14	13	3	303	0	0	319	0	0	0	0	0	0	0	265	4	13	0	282	17	0	0	0	0	17	632
% Approach Total	0.0	100.0	0.0	0.0	0.0		4.1	0.9	95.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	94.0	1.4	4.6	0.0		100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.350	0.000	0.000	0.000	0.350	0.325	0.250	0.781	0.000	0.000	0.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.500	0.813	0.000	0.849	0.472	0.000	0.000	0.000	0.000	0.472	0.745
Cars	0	14	0	0	0	14	13	3	286	0	0	302	0	0	0	0	0	0	0	255	4	13	0	272	17	0	0	0	0	17	605
Cars %	0.0	100.0	0.0	0.0	0.0	100.0	100.0	100.0	94.4	0.0	0.0	94.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.2	100.0	100.0	0.0	96.5	100.0	0.0	0.0	0.0	0.0	100.0	95.7
Heavy Vehicles	0	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	27
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	4.3	
Cars Enter Leg	0	14	0	0	0	14	13	3	286	0	0	302	0	0	0	0	0	0	0	255	4	13	0	272	17	0	0	0	0	17	605
Heavy Enter Leg	0	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	27
Total Entering Leg	0	14	0	0	0	14	13	3	303	0	0	319	0	0	0	0	0	0	0	265	4	13	0	282	17	0	0	0	0	17	632
Cars Exiting Leg	17						255						0						317						16						605
Heavy Exiting Leg	0						10						0						17						0						27
Total Exiting Leg	17						265						0						334						16						632

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Cars

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	52	0	0	52	0	0	0	0	0	0	0	31	0	1	0	32	0	0	0	0	0	0	84
7:15 AM	0	1	0	0	0	1	1	0	62	0	0	63	0	0	0	0	0	0	0	27	0	0	0	27	0	0	0	0	0	0	91
7:30 AM	0	0	0	0	0	0	2	0	51	0	0	53	0	0	0	0	0	0	0	38	0	2	0	40	2	0	0	0	0	2	95
7:45 AM	0	0	0	0	0	0	1	0	67	0	0	68	0	0	0	0	0	0	0	37	2	0	0	39	0	0	0	0	0	0	107
Total	0	1	0	0	0	1	4	0	232	0	0	236	0	0	0	0	0	0	0	133	2	3	0	138	2	0	0	0	0	2	377
8:00 AM	0	1	0	0	0	1	3	0	81	0	0	84	0	0	0	0	0	0	0	50	2	4	0	56	4	0	0	0	0	4	145
8:15 AM	0	10	0	0	0	10	10	3	92	0	0	105	0	0	0	0	0	0	0	75	1	4	0	80	9	0	0	0	0	9	204
8:30 AM	0	3	0	0	0	3	0	0	54	0	0	54	0	0	0	0	0	0	0	61	0	2	0	63	1	0	0	0	0	1	121
8:45 AM	0	0	0	0	0	0	0	0	59	0	0	59	0	0	0	0	0	0	0	69	1	3	0	73	3	0	0	0	0	3	135
Total	0	14	0	0	0	14	13	3	286	0	0	302	0	0	0	0	0	0	0	255	4	13	0	272	17	0	0	0	0	17	605
Grand Total	0	15	0	0	0	15	17	3	518	0	0	538	0	0	0	0	0	0	0	388	6	16	0	410	19	0	0	0	0	19	982
Approach %	0.0	100.0	0.0	0.0	0.0		3.2	0.6	96.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	94.6	1.5	3.9	0.0		100.0	0.0	0.0	0.0	0.0		
Total %	0.0	1.5	0.0	0.0	0.0	1.5	1.7	0.3	52.7	0.0	0.0	54.8	0.0	0.0	0.0	0.0	0.0	0.0		0.0	39.5	0.6	1.6	0.0	41.8	1.9	0.0	0.0	0.0	1.9	
Exiting Leg Total	23						388						0						552						19						982

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
8:00 AM	0	1	0	0	0	1	3	0	81	0	0	84	0	0	0	0	0	0	0	50	2	4	0	56	4	0	0	0	0	4	145
8:15 AM	0	10	0	0	0	10	10	3	92	0	0	105	0	0	0	0	0	0	0	75	1	4	0	80	9	0	0	0	0	9	204
8:30 AM	0	3	0	0	0	3	0	0	54	0	0	54	0	0	0	0	0	0	0	61	0	2	0	63	1	0	0	0	0	1	121
8:45 AM	0	0	0	0	0	0	0	0	59	0	0	59	0	0	0	0	0	0	0	69	1	3	0	73	3	0	0	0	0	3	135
Total Volume	0	14	0	0	0	14	13	3	286	0	0	302	0	0	0	0	0	0	0	255	4	13	0	272	17	0	0	0	0	17	605
% Approach Total	0.0	100.0	0.0	0.0	0.0		4.3	1.0	94.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	93.8	1.5	4.8	0.0		100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.350	0.000	0.000	0.000	0.350	0.325	0.250	0.777	0.000	0.000	0.719	0.000	0.000	0.000	0.000	0.000		0.000	0.850	0.500	0.813	0.000	0.850	0.472	0.000	0.000	0.000	0.000	0.472	0.741
Entering Leg	0	14	0	0	0	14	13	3	286	0	0	302	0	0	0	0	0	0	0	255	4	13	0	272	17	0	0	0	0	17	605
Exiting Leg	17						255						0						317						16						605
Total	31						557						0						589						33						1210

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Buses

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	5		
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2		
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	10	
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	3		
Total	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	7		
Grand Total	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	17	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	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	64.7	0.0	0.0	64.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.3	0.0	0.0	0.0	35.3	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0						6						0						11						0						17

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	5		
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2		
Total Volume	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	10	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.313	0.000	0.000	0.000	0.313	0.000	0.000	0.000	0.000	0.500		
Entering Leg	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	10	
Exiting Leg	0						5						0						5						0						10
Total	0						10						0						10						0						20

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Single-Unit Trucks

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	0	6	0	0	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	8		
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4			
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3			
7:45 AM	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4			
Total	0	0	0	0	0	0	2	0	10	0	0	12	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	19			
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4			
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4			
8:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4			
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Total	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	13			
Grand Total	0	0	0	0	0	0	2	0	18	0	0	20	0	0	0	0	0	0	0	11	0	0	0	0	0	1	0	32			
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	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	6.3	0.0	56.3	0.0	0.0	62.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.4	0.0	0.0	0.0	0.0	34.4	3.1	0.0	3.1			
Exiting Leg Total	2						11						0						19						0						32

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	1	0	6	0	0	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8			
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4			
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4			
7:45 AM	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3			
Total Volume	0	0	0	0	0	0	2	0	10	0	0	12	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	19			
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	83.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.417	0.000	0.000	0.429	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.250	0.594			
Entering Leg	0	0	0	0	0	0	2	0	10	0	0	12	0	0	0	0	0	0	0	6	0	0	0	0	6	1	0	19			
Exiting Leg	2						6						0						11						0						19
Total	2						18						0						17						1						38

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Articulated Trucks

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2		
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4		
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2		
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	7		
Grand Total	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	11		
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	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	54.5	0.0	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0						5						0						6						0						11

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2		
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Total Volume	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	7		
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583			
Entering Leg	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7			
Exiting Leg	0						4						0						3						0						7
Total	0						7						0						7						0						14

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Bicycles (on Roadway and Crosswalks)

	Eastern Site Driveway										Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total					
	from North										from East						from South						from West						from Northwest											
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Rear Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Rear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Rear Right		Rear Left	Hard Left	U-Turn	CW-NB	CW-SWB
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3		
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	4	4		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2	0	2	2	0	5		
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	2			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	3	0	2	3	7	7		
Grand Total	0	0	0	0	0	2	2	4	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	4	0	2	2	4	11	11		
Approach %	0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	50.0	50.0								
Total %	0.0	0.0	0.0	0.0	0.0	18.2	18.2	36.4	0.0	0.0	18.2	0.0	0.0	0.0	18.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	9.1	0.0	0.0	0.0	18.2	18.2	36.4								
Exiting Leg Total	4								1								0								2								4							

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway										Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total				
	from North										from East						from South						from West						from Northwest										
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Rear Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Rear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Rear Right		Rear Left	Hard Left	U-Turn	CW-NB
7:30 AM	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3	
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2	0	2	2	0	5		
Total Volume	0	0	0	0	0	1	2	3	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	3	0	2	3	0	9	9		
% Approach Total	0.0	0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	33.3	66.7									
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.000	0.000	0.500	0.000	0.000	0.000	0.500		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.375					0.450			
Entering Leg	0								2								0								1								9						
Exiting Leg	3								1								0								2								9						
Total	6								3								0								3								18						

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



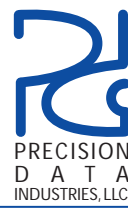
Pedestrians

	Eastern Site Driveway								Lowell Street								Driveway								Lowell Street								Western Site Driveway								Total
	from North								from East								from South								from West								from Northwest								
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NB	CW-SWB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	5				
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	2	6	0	0	0	0	0	0	0	0	0	1	1	2	9					
8:00 AM	0	0	0	0	0	1	21	22	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	1	23	24	49						
8:15 AM	0	0	0	0	0	15	50	65	0	0	0	0	0	0	0	0	0	0	0	3	13	16	0	0	0	0	0	0	2	2	0	0	0	24	91	115					
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	2	4					
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	1	1	4						
Total	0	0	0	0	0	17	71	88	0	0	0	0	0	0	0	0	0	0	0	8	15	23	0	0	0	0	0	0	2	2	0	0	0	27	115	142	255				
Grand Total	0	0	0	0	0	18	71	89	0	0	0	0	0	0	0	0	0	0	0	12	17	29	0	0	0	0	0	2	2	0	0	0	0	28	116	144	264				
Approach %	0	0	0	0	0	20.2	79.8		0	0	0	0	0	0	0	0	0	0	0	41.4	58.6		0	0	0	0	0	100		0	0	0	0	19.4	80.6						
Total %	0	0	0	0	0	6.82	26.9	33.7	0	0	0	0	0	0	0	0	0	0	0	4.55	6.44	11	0	0	0	0	0	0.76	0.76	0	0	0	0	10.6	43.9	54.5					
Exiting Leg Total	89								0								29								2								144								264

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Eastern Site Driveway								Lowell Street								Driveway								Lowell Street								Western Site Driveway								Total
	from North								from East								from South								from West								from Northwest								
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NB	CW-SWB	Total	
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2	5						
8:00 AM	0	0	0	0	0	1	21	22	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	1	23	24	49						
8:15 AM	0	0	0	0	0	15	50	65	0	0	0	0	0	0	0	0	0	0	0	3	13	16	0	0	0	0	0	2	2	0	0	0	24	91	115						
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	0	2	4							
Total Volume	0	0	0	0	0	18	71	89	0	0	0	0	0	0	0	0	0	0	0	7	15	22	0	0	0	0	0	2	2	0	0	0	28	115	143	256					
% Approach Total	0.0	0.0	0.0	0.0	0.0	20.2	79.8		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.8	68.2		0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	19.6	80.4							
PHF	0.000	0.000	0.000	0.000	0.000	0.300	0.355	0.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.288	0.344	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.292	0.316	0.311	0.323						
Entering Leg	0	0	0	0	0	18	71	89	0	0	0	0	0	0	0	0	0	0	0	7	15	22	0	0	0	0	0	2	2	0	0	0	28	115	143	256					
Exiting Leg	89								0								22								2								143								256
Total	178								0								44								4								286								512

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



157 Washington Street, Suite 2
 Hudson, MA 01749
 508-875-0100 datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
Total Exiting Leg						7						302						1						274						7	591

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



Cars

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
2:00 PM	0	3	0	1	0	4	8	8	60	0	0	76	0	0	0	0	0	0	0	52	1	8	0	61	4	0	1	1	0	6	147
2:15 PM	0	2	0	3	0	5	2	2	58	0	0	62	0	0	0	0	0	0	0	52	0	2	0	54	8	0	11	0	0	19	140
2:30 PM	0	1	0	0	0	1	0	1	53	0	0	54	0	0	0	0	0	0	0	44	0	1	0	45	5	0	4	0	0	9	109
2:45 PM	0	1	0	0	0	1	1	0	60	0	0	61	0	0	0	0	0	0	0	62	1	0	0	63	3	0	4	0	0	7	132
Total	0	7	0	4	0	11	11	11	231	0	0	253	0	0	0	0	0	0	0	210	2	11	0	223	20	0	20	1	0	41	528
3:00 PM	0	0	0	0	0	0	1	0	62	0	0	63	0	0	0	0	0	0	0	51	0	1	0	52	4	0	0	0	0	4	119
3:15 PM	0	0	0	2	0	2	1	0	49	0	0	50	0	0	0	0	0	0	0	72	0	0	0	72	0	0	0	0	0	0	124
3:30 PM	0	1	0	3	0	4	2	0	48	0	0	50	0	0	0	0	0	0	0	83	2	0	0	85	1	0	0	0	0	1	140
3:45 PM	0	1	0	0	0	1	2	1	66	0	1	70	0	0	0	0	0	0	0	70	1	2	0	73	1	0	2	0	0	3	147
Total	0	2	0	5	0	7	6	1	225	0	1	233	0	0	0	0	0	0	0	276	3	3	0	282	6	0	2	0	0	8	530
4:00 PM	0	0	0	1	0	1	1	0	74	0	0	75	0	0	0	0	0	0	0	73	0	1	0	74	0	0	0	0	0	0	150
4:15 PM	0	1	0	1	0	2	1	0	57	0	0	58	0	0	0	0	0	0	1	71	0	0	0	72	0	0	0	0	0	0	132
4:30 PM	0	1	0	0	0	1	1	0	67	0	0	68	0	0	0	0	0	0	0	72	1	3	0	76	0	0	0	0	0	0	145
4:45 PM	0	0	0	0	0	0	1	0	54	0	0	55	0	0	0	0	0	0	0	73	1	1	0	75	2	0	1	0	0	3	133
Total	0	2	0	2	0	4	4	0	252	0	0	256	0	0	0	0	0	0	1	289	2	5	0	297	2	0	1	0	0	3	560
5:00 PM	0	0	0	2	0	2	0	0	59	0	0	59	0	0	0	0	0	0	0	77	0	1	0	78	2	0	0	0	0	2	141
5:15 PM	0	0	0	0	0	0	2	0	48	0	0	50	0	0	0	0	0	0	0	78	1	0	0	79	2	0	0	0	0	2	131
5:30 PM	0	0	0	0	0	0	0	0	52	0	0	52	0	0	0	0	0	0	0	66	0	0	0	66	1	0	0	0	0	1	119
5:45 PM	0	0	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	0	0	79	0	3	0	82	1	0	0	0	0	1	133
Total	0	0	0	2	0	2	2	0	209	0	0	211	0	0	0	0	0	0	0	300	1	4	0	305	6	0	0	0	0	6	524
Grand Total	0	11	0	13	0	24	23	12	917	0	1	953	0	0	0	0	0	0	1	1075	8	23	0	1107	34	0	23	1	0	58	2142
Approach %	0.0	45.8	0.0	54.2	0.0		2.4	1.3	96.2	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.1	97.1	0.7	2.1	0.0		58.6	0.0	39.7	1.7	0.0			
Total %	0.0	0.5	0.0	0.6	0.0	1.1	1.1	0.6	42.8	0.0	0.0	44.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.2	0.4	1.1	0.0	51.7	1.6	0.0	1.1	0.0	0.0	2.7	
Exiting Leg Total	32						1112						1						962						35		2142				

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
3:45 PM	0	1	0	0	0	1	2	1	66	0	1	70	0	0	0	0	0	0	0	70	1	2	0	73	1	0	2	0	0	3	147
4:00 PM	0	0	0	1	0	1	1	0	74	0	0	75	0	0	0	0	0	0	0	73	0	1	0	74	0	0	0	0	0	0	150
4:15 PM	0	1	0	1	0	2	1	0	57	0	0	58	0	0	0	0	0	0	1	71	0	0	0	72	0	0	0	0	0	0	132
4:30 PM	0	1	0	0	0	1	1	0	67	0	0	68	0	0	0	0	0	0	0	72	1	3	0	76	0	0	0	0	0	0	145
Total Volume	0	3	0	2	0	5	5	1	264	0	1	271	0	0	0	0	0	0	1	286	2	6	0	295	1	0	2	0	0	3	574
% Approach Total	0.0	60.0	0.0	40.0	0.0		1.8	0.4	97.4	0.0	0.4		0.0	0.0	0.0	0.0	0.0	0.3	96.9	0.7	2.0	0.0		33.3	0.0	66.7	0.0	0.0			
PHF	0.000	0.750	0.000	0.500	0.000	0.625	0.625	0.250	0.892	0.000	0.250	0.903	0.000	0.000	0.000	0.000	0.000	0.250	0.979	0.500	0.500	0.000	0.970	0.250	0.000	0.250	0.000	0.000	0.250	0.957	
Entering Leg	0	3	0	2	0	5	5	1	264	0	1	271	0	0	0	0	0	0	1	286	2	6	0	295	1	0	2	0	0	3	574
Exiting Leg	7						291						1						268						7		574				
Total	12						562						1						563						10		1148				

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



157 Washington Street, Suite 2
 Hudson, MA 01749
 508-875-0100 datarequests@pdillc.com

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway												
	from North						from East						from South						from West						from Northwest												
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Total						
Buses	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Single-Unit Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	14
Articulated Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Entering Leg	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	21
Buses						0						0						0						5													
Single-Unit Trucks						0						13						0						1													
Articulated Trucks						0						1						0						1													
Total Exiting Leg						0						14						0						7	0	21											

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



Buses

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total					
	from North						from East						from South						from West						from Northwest											
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Grand Total	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	13	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.3	0.0	0.0	92.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0						1						0						12						0						13					

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total			
	from North						from East						from South						from West						from Northwest									
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total				
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	
Entering Leg	0						1						0						1						0						2			
Exiting Leg	0						1						0						1						0						2			
Total	0						2						0						2						0						4			

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



Single-Unit Trucks

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	7
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	4
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	15
3:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	4
3:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	13
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	5
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	13
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	4
Total	0	1	0	0	0	1	1	0	3	0	0	4	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	14
Grand Total	0	1	0	0	0	1	1	0	13	0	0	14	0	0	0	0	0	0	0	40	0	0	0	40	0	0	0	0	0	0	55
Approach %	0.0	100.0	0.0	0.0	0.0		7.1	0.0	92.9	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	1.8	0.0	0.0	0.0	1.8	1.8	0.0	23.6	0.0	0.0	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.7	0.0	0.0	0.0	72.7	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1						40						0						14						0	55					

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						Total
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	7
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	4
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	15
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.458	0.000	0.000	0.000	0.458	0.000	0.000	0.000	0.000	0.000	0.000	0.536
Entering Leg	0						4						0						11						0	15					
Exiting Leg	0						11						0						4						0	15					
Total	0						15						0						15						0	30					

PDI File #: **217901 B-C**
 Location: **N: Eastern Site Driveway S: Driveway NW: Western Site Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Total
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	9
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	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	44.4	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	55.6	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						5						0						4						0						9

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Eastern Site Driveway						Lowell Street						Driveway						Lowell Street						Western Site Driveway						
	from North						from East						from South						from West						from Northwest						
	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Total
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.375	
Entering Leg	0						2						0						1						0						3
Exiting Leg	0						1						0						2						0						3
Total	0						3						0						3						0						6

PDI File #: 217901 B-C
 Location: N: Eastern Site Driveway S: Driveway NW: Western Site Driveway
 Location: E: Lowell Street W: Lowell Street
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



Bicycles (on Roadway and Crosswalks)

Time	Eastern Site Driveway								Lowell Street								Driveway								Lowell Street								Western Site Driveway								Total
	from North								from East								from South								from West								from Northwest								
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-SE	CW-NB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	
2:00 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
2:15 PM	0 0 0 0 0 5 0 5								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 0 5								10
2:30 PM	0 0 0 0 0 2 2 2								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 2 2 4								4
2:45 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
Total	0 0 0 0 0 5 2 7								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 2 7								14
3:00 PM	0 0 0 0 0 0 1 1								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 1 1								2
3:15 PM	0 0 0 0 0 3 2 5								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 3 2 5								10
3:30 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
3:45 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
Total	0 0 0 0 0 3 3 6								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 3 3 6								12
4:00 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
4:15 PM	0 0 0 0 0 4 0 4								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 0 5								9
4:30 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
4:45 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
Total	0 0 0 0 0 4 0 4								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 0 5								9
5:00 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
5:15 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 1 0 0 0 0 0 1								0 0 0 0 0 0 0 0								1
5:30 PM	0 0 0 0 0 0 1 1								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 1 1								2
5:45 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
Total	0 0 0 0 0 0 1 1								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 1 0 0 0 0 0 1								0 0 0 0 0 0 0 1								3
Grand Total	0 0 0 0 0 12 6 18								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 1 0 0 0 0 0 1								0 0 0 0 0 13 6 19								38
Approach %	0.0 0.0 0.0 0.0 0.0 66.7 33.3								0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 100.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 68.4 31.6								
Total %	0.0 0.0 0.0 0.0 0.0 31.6 15.8 47.4								0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 2.6 0.0 0.0 0.0 0.0 0.0 2.6								0.0 0.0 0.0 0.0 0.0 34.2 15.8 50.0								
Exiting Leg Total	18								1								0								0								19								38

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

Time	Eastern Site Driveway								Lowell Street								Driveway								Lowell Street								Western Site Driveway								Total
	from North								from East								from South								from West								from Northwest								
	Hard Right	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-SE	CW-NB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	
2:15 PM	0 0 0 0 0 5 0 5								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 0 5								10
2:30 PM	0 0 0 0 0 2 2 2								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 2 2 4								4
2:45 PM	0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0
3:00 PM	0 0 0 0 0 0 1 1								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 1 1								2
Total Volume	0 0 0 0 0 5 3 8								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 3 8								16
% Approach Total	0.0 0.0 0.0 0.0 0.0 62.5 37.5								0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 0.0 0.0								0.0 0.0 0.0 0.0 0.0 62.5 37.5								
PHF	0.000 0.000 0.000 0.000 0.000 0.250 0.375 0.400								0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000								0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000								0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000								0.000 0.000 0.000 0.000 0.000 0.250 0.375 0.400								0.400
Entering Leg	0 0 0 0 0 5 3 8								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 0 0 0								0 0 0 0 0 5 3 8								16
Exiting Leg	0								0								0								0								0								8
Total	16								0								0								0								16								32



PDI File #: 217901 D-E
Location: N: Vernon Street S: Vernon Street
City, State: Wakefield, MA
Client: GPI/ S. Theriault
Site Code: NEX-2020177
Count Date: Wednesday, May 12, 2021
Start Time: 7:00 AM
End Time: 9:00 AM
Class:

Cars

Main data table showing traffic counts for various approaches (Vernon Street, Driveway, Driveway (South), Southern Site Driveway, Northern Site Driveway) at different times (7:00 AM to 8:45 AM).

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

Detailed peak hour analysis table for the 7:45 AM period, providing a breakdown of traffic by approach and movement.



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 217901 D-E
Location: N: Vernon Street S: Vernon Street
City, State: Wakefield, MA
Client: GPI/ S. Theriault
Site Code: NEX-2020177
Count Date: Wednesday, May 12, 2021
Start Time: 7:00 AM
End Time: 9:00 AM
Class:

Single-Unit Trucks

	Vernon Street							Driveway							Driveway (South)							Vernon Street							Southern Site Driveway							Northern Site Driveway							Total
	from North							from East							from Southeast							from South							from Southwest							from West							
	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6				
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3					
7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4					
7:45 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4					
Total	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17						
8:00 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
8:15 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
8:30 AM	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
8:45 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
Total	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20						
Grand Total	0	0	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37						
Approach %	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Total %	0.0	0.0	51.4	0.0	0.0	0.0	51.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Exiting Leg Total	18							0							0							19							0							0							37

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street							Driveway							Driveway (South)							Vernon Street							Southern Site Driveway							Northern Site Driveway							Total
	from North							from East							from Southeast							from South							from Southwest							from West							
	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
8:15 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4						
8:30 AM	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
8:45 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6						
Total Volume	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20						
% Approach Total	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
PHF	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.833							
Entering Leg	0	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20							
Exiting Leg	5							0							0							15							0							0							20
Total	20							0							0							20							0							0							40

PDI File #: 217901 D-E
 Location: N: Vernon Street S: Vernon Street
 Location: E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



Pedestrians

	Vernon Street														Driveway														Vernon Street														Southern Site Driveway														Northern Site Driveway														Total
	from North							from East							from South							from Southwest							from West																																										
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total																															
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																							
7:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	4																								
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																								
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																								
Total	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	4																								
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	8	0	0	0	0	0	4	1	5	13																															
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	9	0	0	0	0	0	8	2	10	20																															
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	3																															
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2																																
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	4	19	0	0	0	0	0	13	4	17	38																															
Grand Total	0	0	0	0	0	1	1	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	5	20	0	0	0	0	0	13	5	18	42																															
Approach %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	25	0	0	0	0	0	72	28																																		
Total %	0	0	0	0	0	2.4	2.4	0	0	0	0	0	7.1	7.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	12	48	0	0	0	0	0	31	12	43																																
Exiting Leg Total	1							3							0							20							18							42																																			

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Vernon Street														Driveway														Vernon Street														Southern Site Driveway														Northern Site Driveway														Total
	from North							from East							from South							from Southwest							from West																																										
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total																															
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	8	0	0	0	0	0	4	1	5	13																															
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	9	0	0	0	0	0	8	2	10	20																															
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	3																															
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2																																
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	4	19	0	0	0	0	0	13	4	17	38																															
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.9	21.1	0.0	0.0	0.0	0.0	0.0	76.5	23.5																																		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.536	0.500	0.528	0.000	0.000	0.000	0.000	0.000	0.406	0.500	0.425	0.475																																
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	4	19	0	0	0	0	0	13	4	17	38																															
Exiting Leg	0							2							0							19							17							38																																			
Total	0							4							0							38							34							76																																			



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 217901 D-E
Location: N: Vernon Street S: Vernon Street
Location: E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
City, State: Wakefield, MA
Client: GPI/ S. Theriault
Site Code: NEX-2020177
Count Date: Wednesday, May 12, 2021
Start Time: 2:00 PM
End Time: 6:00 PM
Class:

Cars and Heavy Vehicles (Combined)

Table with columns for street names (Vernon Street, Driveway, Driveway (South), Southern Site Driveway, Northern Site Driveway) and movement directions (from North, from East, from Southeast, from South, from Southwest, from West). Rows include time intervals (2:00 PM to 5:45 PM) and summary rows (Grand Total, Approach %, Total %).

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

Table showing peak hour analysis for 3:15 PM. Columns and structure are identical to the main table above, but with a single time interval (3:15 PM) and detailed PHF (Peak Hour Factor) values.



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 217901 D-E
Location: N: Vernon Street S: Vernon Street
Location: E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
City, State: Wakefield, MA
Client: GPI/ S. Theriault
Site Code: NEX-2020177
Count Date: Wednesday, May 12, 2021
Start Time: 2:00 PM
End Time: 6:00 PM
Class:

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

Table with columns for street names (Vernon Street, Driveway, Driveway (South), Southern Site Driveway, Northern Site Driveway) and movement directions (from North, from East, from Southeast, from South, from Southwest, from West). Rows include time intervals (2:00 PM to 5:45 PM), Grand Total, and various percentages (Approach %, Total %).

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

Table showing peak hour analysis for 2:15 PM, 2:15 PM, 2:30 PM, 2:45 PM, and 3:00 PM. Columns are the same as the main table. Rows include Total Volume, % Approach Total, PHF, and vehicle type breakdowns (Buses, Single-Unit Trucks, Articulated Trucks).



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 217901 D-E
 Location: N: Vernon Street S: Vernon Street
 Location: E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM

Class:

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Vernon Street							Driveway							Driveway (South)							Vernon Street							Southern Site Driveway							Northern Site Driveway						
	from North							from East							from Southeast							from South							from Southwest							from West						
	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Total
Articulated Trucks						2							0																								2					
Total Exiting Leg						10							0																							0	18					



PRECISION DATA INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 217901 D-E
Location: N: Vernon Street S: Vernon Street
E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
City, State: Wakefield, MA
Client: GPI/ S. Theriault
Site Code: NEX-2020177
Count Date: Wednesday, May 12, 2021
Start Time: 2:00 PM
End Time: 6:00 PM
Class:

Articulated Trucks

Table with columns for road segments (Vernon Street, Driveway, Driveway (South), Southern Site Driveway, Northern Site Driveway) and movement types (from North, from East, from Southeast, from South, from Southwest, from West). Rows include time intervals from 2:00 PM to 5:45 PM, Grand Total, Approach %, Total %, and Exiting Leg Total.

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

Table showing Peak Hour Analysis for Articulated Trucks. Columns and rows are similar to the main table, but include PHF (Peak Hour Factor) and PHF values for each segment.

PDI File #: 217901 D-E
 Location: N: Vernon Street S: Vernon Street
 Location: E: Driveway W: Northern Site Driveway SE: Driveway (South) SW: Southern Site Driveway
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:00 PM
 End Time: 6:00 PM
 Class:



Bicycles (on Roadway and Crosswalks)

	Vernon Street				Driveway				Vernon Street				Southern Site Driveway				Northern Site Driveway				Total																					
	from North				from East				from South				from Southwest				from West																									
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left		U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	3	1	4	8		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	1	0	3	1	5	10
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	0	2	0	0	0	0	2	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	3	2	5	0	0	0	1	0	3	3	7	16		
Approach %	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	12.5	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	6.3	0.0	6.3	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	12.5	31.3	0.0	0.0	0.0	6.3	0.0	18.8	18.8	43.8	0.0	0.0		
Exiting Leg Total	2								1								2								5								6								16	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

	Vernon Street				Driveway				Vernon Street				Southern Site Driveway				Northern Site Driveway				Total																					
	from North				from East				from South				from Southwest				from West																									
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left		U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Entering Leg	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	1	0	3	1	5	10		
Exiting Leg	1								0								1								4								4									
Total	2								0								1								8								9								20	

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	5	0	3	0	8	0	64	0	0	64	0	0	0	0	0	0	71	0	0	71	143
8:15 AM	53	0	6	0	59	0	102	0	0	102	0	0	0	0	0	0	96	0	0	96	257
8:30 AM	4	0	2	0	6	0	65	0	0	65	0	0	0	0	0	0	62	0	0	62	133
8:45 AM	1	0	0	0	1	0	62	0	0	62	0	0	0	0	0	0	73	0	0	73	136
Total	63	0	11	0	74	0	293	0	0	293	0	0	0	0	0	0	302	0	0	302	669
Grand Total	63	0	11	0	74	0	293	0	0	293	0	0	0	0	0	0	302	0	0	302	669
Approach %	85.1	0.0	14.9	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	9.4	0.0	1.6	0.0	11.1	0.0	43.8	0.0	0.0	43.8	0.0	0.0	0.0	0.0	0.0	0.0	45.1	0.0	0.0	45.1	
Exiting Leg Total	0					313					0					356					669
Cars	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
% Cars	93.7	0.0	100.0	0.0	94.6	0.0	95.2	0.0	0.0	95.2	0.0	0.0	0.0	0.0	0.0	0.0	97.0	0.0	0.0	97.0	96.0
Exiting Leg Total	0					304					0					338					642
Heavy Vehicles	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
% Heavy Vehicles	6.3	0.0	0.0	0.0	5.4	0.0	4.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	4.0
Exiting Leg Total	0					9					0					18					27

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	5	0	3	0	8	0	64	0	0	64	0	0	0	0	0	0	71	0	0	71	143
8:15 AM	53	0	6	0	59	0	102	0	0	102	0	0	0	0	0	0	96	0	0	96	257
8:30 AM	4	0	2	0	6	0	65	0	0	65	0	0	0	0	0	0	62	0	0	62	133
8:45 AM	1	0	0	0	1	0	62	0	0	62	0	0	0	0	0	0	73	0	0	73	136
Total Volume	63	0	11	0	74	0	293	0	0	293	0	0	0	0	0	0	302	0	0	302	669
% Approach Total	85.1	0.0	14.9	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.297	0.000	0.458	0.000	0.314	0.000	0.718	0.000	0.000	0.718	0.000	0.000	0.000	0.000	0.000	0.000	0.786	0.000	0.000	0.786	0.651
Cars	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
Cars %	93.7	0.0	100.0	0.0	94.6	0.0	95.2	0.0	0.0	95.2	0.0	0.0	0.0	0.0	0.0	0.0	97.0	0.0	0.0	97.0	96.0
Heavy Vehicles	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
Heavy Vehicles %	6.3	0.0	0.0	0.0	5.4	0.0	4.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	4.0
Cars Enter Leg	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
Heavy Enter Leg	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
Total Entering Leg	63	0	11	0	74	0	293	0	0	293	0	0	0	0	0	0	302	0	0	302	669
Cars Exiting Leg	0					304					0					338					642
Heavy Exiting Leg	0					9					0					18					27
Total Exiting Leg	0					313					0					356					669

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	2	0	3	0	5	0	61	0	0	61	0	0	0	0	0	0	68	0	0	68	134
8:15 AM	52	0	6	0	58	0	97	0	0	97	0	0	0	0	0	0	93	0	0	93	248
8:30 AM	4	0	2	0	6	0	62	0	0	62	0	0	0	0	0	0	59	0	0	59	127
8:45 AM	1	0	0	0	1	0	59	0	0	59	0	0	0	0	0	0	73	0	0	73	133
Total	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
Grand Total	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
Approach %	84.3	0.0	15.7	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	9.2	0.0	1.7	0.0	10.9	0.0	43.5	0.0	0.0	43.5	0.0	0.0	0.0	0.0	0.0	0.0	45.6	0.0	0.0	45.6	
Exiting Leg Total	0					304					0					338					642

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	2	0	3	0	5	0	61	0	0	61	0	0	0	0	0	0	68	0	0	68	134
8:15 AM	52	0	6	0	58	0	97	0	0	97	0	0	0	0	0	0	93	0	0	93	248
8:30 AM	4	0	2	0	6	0	62	0	0	62	0	0	0	0	0	0	59	0	0	59	127
8:45 AM	1	0	0	0	1	0	59	0	0	59	0	0	0	0	0	0	73	0	0	73	133
Total Volume	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
% Approach Total	84.3	0.0	15.7	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.284	0.000	0.458	0.000	0.302	0.000	0.719	0.000	0.000	0.719	0.000	0.000	0.000	0.000	0.000	0.000	0.788	0.000	0.000	0.788	0.647
Entering Leg	59	0	11	0	70	0	279	0	0	279	0	0	0	0	0	0	293	0	0	293	642
Exiting Leg	0					304					0					338					642
Total	70					583					0					631					1284

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	3	0	0	0	3	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	9
8:15 AM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	9
8:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
8:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
Grand Total	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
Approach %	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	
Total %	14.8	0.0	0.0	0.0	14.8	0.0	51.9	0.0	0.0	51.9	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3	
Exiting Leg Total	0					9					0					18					27
Buses	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
% Buses	100.0	0.0	0.0	0.0	100.0	0.0	28.6	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	37.0
Exiting Leg Total	0					2					0					8					10
Single-Unit Trucks	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	57.1	0.0	0.0	57.1	0.0	0.0	0.0	0.0	0.0	0.0	55.6	0.0	0.0	55.6	48.1
Exiting Leg Total	0					5					0					8					13
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	14.8
Exiting Leg Total	0					2					0					2					4

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	3	0	0	0	3	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	9
8:15 AM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	9
8:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
8:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total Volume	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
% Approach Total	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	
PHF	0.333	0.000	0.000	0.000	0.333	0.000	0.700	0.000	0.000	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.750
Buses	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
Buses %	100.0	0.0	0.0	0.0	100.0	0.0	28.6	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	37.0
Single-Unit Trucks	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	57.1	0.0	0.0	57.1	0.0	0.0	0.0	0.0	0.0	0.0	55.6	0.0	0.0	55.6	48.1
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	14.8
Buses	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
Single-Unit Trucks	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total Entering Leg	4	0	0	0	4	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	27
Buses	0					2					0					8					10
Single-Unit Trucks	0					5					0					8					13
Articulated Trucks	0					2					0					2					4
Total Exiting Leg	0					9					0					18					27

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	5
8:15 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
Grand Total	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
Approach %	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	40.0	0.0	0.0	0.0	40.0	0.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	
Exiting Leg Total	0					2					0					8					10

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	5
8:15 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
% Approach Total	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.333	0.000	0.000	0.000	0.333	0.000	1.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.500
Entering Leg	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	10
Exiting Leg	0					2					0					8					10
Total	4					6					0					10					20

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Grand Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	61.5	0.0	0.0	61.5	0.0	0.0	0.0	0.0	0.0	0.0	38.5	0.0	0.0	38.5	
Exiting Leg Total	0					5					0					8					13

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.813
Entering Leg	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13
Exiting Leg	0					5					0					8					13
Total	0					13					0					13					26

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Grand Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	
Exiting Leg Total	0					2					0					2					4

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.500
Entering Leg	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Exiting Leg	0					2					0					2					4
Total	0					4					0					4					8

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total							0							0									0								0		0

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0									0								0		0
Total							0							0									0								0		0

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Dolbeare School Western Driveway							Lowell Street							Driveway							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	19	20	0	0	0	0	0	0	0	21
8:15 AM	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	16	16	32	0	0	0	0	0	0	0	36
8:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	3
Total	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	19	36	55	0	0	0	0	1	0	1	62
Grand Total	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	19	36	55	0	0	0	0	1	0	1	62
Approach %	0	0	0	0	33.3	66.7		0	0	0	0	0	0	0	0	0	0	0	34.5	65.5	0	0	0	0	100	0			
Total %	0	0	0	0	3.23	6.45	9.68	0	0	0	0	0	0	0	0	0	0	0	30.6	58.1	88.7	0	0	0	0	1.61	0	1.61	
Exiting Leg Total	6							0							55							1							62

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Western Driveway							Lowell Street							Driveway							Lowell Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	19	20	0	0	0	0	0	0	0	21
8:15 AM	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	16	16	32	0	0	0	0	0	0	0	36
8:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	19	36	55	0	0	0	0	1	0	1	62
% Approach Total	0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.5	65.5	0.0	0.0	0.0	0.0	100.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.500	0.250	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.297	0.474	0.430	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.431	
Entering Leg	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	19	36	55	0	0	0	0	1	0	1	62
Exiting Leg	6							0							55							1							62
Total	12							0							110							2							124

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	65	0	0	65	0	0	0	0	0	0	46	0	0	46	113
2:45 PM	2	0	0	0	2	0	69	0	0	69	0	0	0	0	0	0	66	0	0	66	137
Total	4	0	0	0	4	0	134	0	0	134	0	0	0	0	0	0	112	0	0	112	250
3:00 PM	0	0	0	0	0	0	65	0	0	65	0	0	0	0	0	1	55	0	0	56	121
3:15 PM	0	0	1	0	1	0	54	0	0	54	0	0	0	0	0	0	75	0	0	75	130
Total	0	0	1	0	1	0	119	0	0	119	0	0	0	0	0	1	130	0	0	131	251
Grand Total	4	0	1	0	5	0	253	0	0	253	0	0	0	0	0	1	242	0	0	243	501
Approach %	80.0	0.0	20.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.4	99.6	0.0	0.0		
Total %	0.8	0.0	0.2	0.0	1.0	0.0	50.5	0.0	0.0	50.5	0.0	0.0	0.0	0.0	0.0	0.2	48.3	0.0	0.0	48.5	
Exiting Leg Total	0					243					1					257					501
Cars	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
% Cars	50.0	0.0	100.0	0.0	60.0	0.0	96.4	0.0	0.0	96.4	0.0	0.0	0.0	0.0	0.0	100.0	96.7	0.0	0.0	96.7	96.2
Exiting Leg Total	0					235					1					246					482
Heavy Vehicles	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
% Heavy Vehicles	50.0	0.0	0.0	0.0	40.0	0.0	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.3	3.8
Exiting Leg Total	0					8					0					11					19

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	65	0	0	65	0	0	0	0	0	0	46	0	0	46	113
2:45 PM	2	0	0	0	2	0	69	0	0	69	0	0	0	0	0	0	66	0	0	66	137
3:00 PM	0	0	0	0	0	0	65	0	0	65	0	0	0	0	0	1	55	0	0	56	121
3:15 PM	0	0	1	0	1	0	54	0	0	54	0	0	0	0	0	0	75	0	0	75	130
Total Volume	4	0	1	0	5	0	253	0	0	253	0	0	0	0	0	1	242	0	0	243	501
% Approach Total	80.0	0.0	20.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.4	99.6	0.0	0.0		
PHF	0.500	0.000	0.250	0.000	0.625	0.000	0.917	0.000	0.000	0.917	0.000	0.000	0.000	0.000	0.000	0.250	0.807	0.000	0.000	0.810	0.914
Cars	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
Cars %	50.0	0.0	100.0	0.0	60.0	0.0	96.4	0.0	0.0	96.4	0.0	0.0	0.0	0.0	0.0	100.0	96.7	0.0	0.0	96.7	96.2
Heavy Vehicles	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
Heavy Vehicles %	50.0	0.0	0.0	0.0	40.0	0.0	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.3	3.8
Cars Enter Leg	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
Heavy Enter Leg	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
Total Entering Leg	4	0	1	0	5	0	253	0	0	253	0	0	0	0	0	1	242	0	0	243	501
Cars Exiting Leg	0					235					1					246					482
Heavy Exiting Leg	0					8					0					11					19
Total Exiting Leg	0					243					1					257					501

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	62	0	0	62	0	0	0	0	0	0	45	0	0	45	107
2:45 PM	2	0	0	0	2	0	67	0	0	67	0	0	0	0	0	0	64	0	0	64	133
Total	2	0	0	0	2	0	129	0	0	129	0	0	0	0	0	0	109	0	0	109	240
3:00 PM	0	0	0	0	0	0	64	0	0	64	0	0	0	0	0	1	52	0	0	53	117
3:15 PM	0	0	1	0	1	0	51	0	0	51	0	0	0	0	0	0	73	0	0	73	125
Total	0	0	1	0	1	0	115	0	0	115	0	0	0	0	0	1	125	0	0	126	242
Grand Total	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
Approach %	66.7	0.0	33.3	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.4	99.6	0.0	0.0		
Total %	0.4	0.0	0.2	0.0	0.6	0.0	50.6	0.0	0.0	50.6	0.0	0.0	0.0	0.0	0.0	0.2	48.5	0.0	0.0	48.8	
Exiting Leg Total	0					235					1					246					482

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	62	0	0	62	0	0	0	0	0	0	45	0	0	45	107
2:45 PM	2	0	0	0	2	0	67	0	0	67	0	0	0	0	0	0	64	0	0	64	133
3:00 PM	0	0	0	0	0	0	64	0	0	64	0	0	0	0	0	1	52	0	0	53	117
3:15 PM	0	0	1	0	1	0	51	0	0	51	0	0	0	0	0	0	73	0	0	73	125
Total Volume	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
% Approach Total	66.7	0.0	33.3	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.4	99.6	0.0	0.0		
PHF	0.250	0.000	0.250	0.000	0.375	0.000	0.910	0.000	0.000	0.910	0.000	0.000	0.000	0.000	0.000	0.250	0.801	0.000	0.000	0.805	0.906
Entering Leg	2	0	1	0	3	0	244	0	0	244	0	0	0	0	0	1	234	0	0	235	482
Exiting Leg	0					235					1					246					482
Total	3					479					1					481					964

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	6
2:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	2	0	0	0	2	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	10
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
3:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	9
Grand Total	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
Approach %	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	10.5	0.0	0.0	0.0	10.5	0.0	47.4	0.0	0.0	47.4	0.0	0.0	0.0	0.0	0.0	0.0	42.1	0.0	0.0	42.1	
Exiting Leg Total	0					8					0					11					19
Buses	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
% Buses	100.0	0.0	0.0	0.0	100.0	0.0	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1
Exiting Leg Total	0					0					0					4					4
Single-Unit Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	55.6	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	87.5	0.0	0.0	87.5	63.2
Exiting Leg Total	0					7					0					5					12
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	12.5	15.8
Exiting Leg Total	0					1					0					2					3

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	6
2:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
3:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total Volume	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
% Approach Total	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.667	0.792
Buses	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Buses %	100.0	0.0	0.0	0.0	100.0	0.0	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1
Single-Unit Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	55.6	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	87.5	0.0	0.0	87.5	63.2
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	12.5	15.8
Buses	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Single-Unit Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Entering Leg	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	19
Buses	0					0					0					4					4
Single-Unit Trucks	0					7					0					5					12
Articulated Trucks	0					1					0					2					3
Total Exiting Leg	0					8					0					11					19

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Buses

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Approach %	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	50.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0					0					0					4					4

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
% Approach Total	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333
Entering Leg	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Exiting Leg	0					0					0					4					4
Total	2					2					0					4					8

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Single-Unit Trucks

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
2:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
Grand Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	41.7	0.0	0.0	41.7	0.0	0.0	0.0	0.0	0.0	0.0	58.3	0.0	0.0	58.3	
Exiting Leg Total	0					7					0					5					12

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
2:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total Volume	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.583	0.750
Entering Leg	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Exiting Leg	0					7					0					5					12
Total	0					12					0					12					24

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Articulated Trucks

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3	
Exiting Leg Total	0					1					0					2					3

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway					Lowell Street					Driveway					Lowell Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.375
Entering Leg	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Exiting Leg	0					1					0					2					3
Total	0					3					0					3					6

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:15 PM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4		
Total	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4		
Grand Total	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4		
Approach %	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0	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	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Exiting Leg Total	2							0							2							0							4				

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:15 PM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4		
Total Volume	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4		
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0					
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250			
Entering Leg	0							0							2							0							4				
Exiting Leg	2							0							2							0							4				
Total	4							0							4							0							8				

PDI File #: **217901 F**
 Location: **N: Dolbeare School Western Driveway S: Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Pedestrians

	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	8	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	8	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Grand Total	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	9	
Approach %	0	0	0	0	0	100		0	0	0	0	0	0	0		0	0	0	0	80	20			0	0	0	0	0	0	0			
Total %	0	0	0	0	0	44.4	44.4	0	0	0	0	0	0	0	0	0	0	0	0	44.4	11.1	55.6		0	0	0	0	0	0	0	0		
Exiting Leg Total	4							0							5							0							9				

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Western Driveway								Lowell Street								Driveway								Lowell Street								Total
	from North								from East								from South								from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total		Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	8	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total Volume	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	9	
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	80.0	20.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.333	0.333	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.281	
Entering Leg	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5		0	0	0	0	0	0	0	0	9	
Exiting Leg	4							0							5							0							9				
Total	8							0							10							0							18				

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	11	78	0	89	62	9	0	71	160
8:15 AM	0	0	0	0	27	93	0	120	83	21	0	104	224
8:30 AM	0	0	0	0	2	59	0	61	67	0	0	67	128
8:45 AM	0	2	0	2	3	63	0	66	72	0	0	72	140
Total	0	2	0	2	43	293	0	336	284	30	0	314	652
Grand Total	0	2	0	2	43	293	0	336	284	30	0	314	652
Approach %	0.0	100.0	0.0		12.8	87.2	0.0		90.4	9.6	0.0		
Total %	0.0	0.3	0.0	0.3	6.6	44.9	0.0	51.5	43.6	4.6	0.0	48.2	
Exiting Leg Total	73				286				293				652
Cars	0	1	0	1	41	279	0	320	276	28	0	304	625
% Cars	0.0	50.0	0.0	50.0	95.3	95.2	0.0	95.2	97.2	93.3	0.0	96.8	95.9
Exiting Leg Total	69				277				279				625
Heavy Vehicles	0	1	0	1	2	14	0	16	8	2	0	10	27
% Heavy Vehicles	0.0	50.0	0.0	50.0	4.7	4.8	0.0	4.8	2.8	6.7	0.0	3.2	4.1
Exiting Leg Total	4				9				14				27

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	11	78	0	89	62	9	0	71	160
8:15 AM	0	0	0	0	27	93	0	120	83	21	0	104	224
8:30 AM	0	0	0	0	2	59	0	61	67	0	0	67	128
8:45 AM	0	2	0	2	3	63	0	66	72	0	0	72	140
Total Volume	0	2	0	2	43	293	0	336	284	30	0	314	652
% Approach Total	0.0	100.0	0.0		12.8	87.2	0.0		90.4	9.6	0.0		
PHF	0.000	0.250	0.000	0.250	0.398	0.788	0.000	0.700	0.855	0.357	0.000	0.755	0.728
Cars	0	1	0	1	41	279	0	320	276	28	0	304	625
Cars %	0.0	50.0	0.0	50.0	95.3	95.2	0.0	95.2	97.2	93.3	0.0	96.8	95.9
Heavy Vehicles	0	1	0	1	2	14	0	16	8	2	0	10	27
Heavy Vehicles %	0.0	50.0	0.0	50.0	4.7	4.8	0.0	4.8	2.8	6.7	0.0	3.2	4.1
Cars Enter Leg	0	1	0	1	41	279	0	320	276	28	0	304	625
Heavy Enter Leg	0	1	0	1	2	14	0	16	8	2	0	10	27
Total Entering Leg	0	2	0	2	43	293	0	336	284	30	0	314	652
Cars Exiting Leg	69				277				279				625
Heavy Exiting Leg	4				9				14				27
Total Exiting Leg	73				286				293				652

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	10	75	0	85	60	8	0	68	153
8:15 AM	0	0	0	0	27	88	0	115	80	20	0	100	215
8:30 AM	0	0	0	0	2	56	0	58	64	0	0	64	122
8:45 AM	0	1	0	1	2	60	0	62	72	0	0	72	135
Total	0	1	0	1	41	279	0	320	276	28	0	304	625
Grand Total	0	1	0	1	41	279	0	320	276	28	0	304	625
Approach %	0.0	100.0	0.0		12.8	87.2	0.0		90.8	9.2	0.0		
Total %	0.0	0.2	0.0	0.2	6.6	44.6	0.0	51.2	44.2	4.5	0.0	48.6	
Exiting Leg Total				69				277				279	625

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	10	75	0	85	60	8	0	68	153
8:15 AM	0	0	0	0	27	88	0	115	80	20	0	100	215
8:30 AM	0	0	0	0	2	56	0	58	64	0	0	64	122
8:45 AM	0	1	0	1	2	60	0	62	72	0	0	72	135
Total Volume	0	1	0	1	41	279	0	320	276	28	0	304	625
% Approach Total	0.0	100.0	0.0		12.8	87.2	0.0		90.8	9.2	0.0		
PHF	0.000	0.250	0.000	0.250	0.380	0.793	0.000	0.696	0.863	0.350	0.000	0.760	0.727
Entering Leg	0	1	0	1	41	279	0	320	276	28	0	304	625
Exiting Leg				69				277				279	625
Total				70				597				583	1250

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	1	3	0	4	2	1	0	3	7
8:15 AM	0	0	0	0	0	5	0	5	3	1	0	4	9
8:30 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
8:45 AM	0	1	0	1	1	3	0	4	0	0	0	0	5
Total	0	1	0	1	2	14	0	16	8	2	0	10	27
Grand Total	0	1	0	1	2	14	0	16	8	2	0	10	27
Approach %	0.0	100.0	0.0		12.5	87.5	0.0		80.0	20.0	0.0		
Total %	0.0	3.7	0.0	3.7	7.4	51.9	0.0	59.3	29.6	7.4	0.0	37.0	
Exiting Leg Total	4				9				14				27
Buses	0	1	0	1	2	4	0	6	0	2	0	2	9
% Buses	0.0	100.0	0.0	100.0	100.0	28.6	0.0	37.5	0.0	100.0	0.0	20.0	33.3
Exiting Leg Total	4				1				4				9
Single-Unit Trucks	0	0	0	0	0	8	0	8	5	0	0	5	13
% Single-Unit	0.0	0.0	0.0	0.0	0.0	57.1	0.0	50.0	62.5	0.0	0.0	50.0	48.1
Exiting Leg Total	0				5				8				13
Articulated Trucks	0	0	0	0	0	2	0	2	3	0	0	3	5
% Articulated	0.0	0.0	0.0	0.0	0.0	14.3	0.0	12.5	37.5	0.0	0.0	30.0	18.5
Exiting Leg Total	0				3				2				5

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	1	3	0	4	2	1	0	3	7
8:15 AM	0	0	0	0	0	5	0	5	3	1	0	4	9
8:30 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
8:45 AM	0	1	0	1	1	3	0	4	0	0	0	0	5
Total Volume	0	1	0	1	2	14	0	16	8	2	0	10	27
% Approach Total	0.0	100.0	0.0		12.5	87.5	0.0		80.0	20.0	0.0		
PHF	0.000	0.250	0.000	0.250	0.500	0.700	0.000	0.800	0.667	0.500	0.000	0.625	0.750
Buses	0	1	0	1	2	4	0	6	0	2	0	2	9
Buses %	0.0	100.0	0.0	100.0	100.0	28.6	0.0	37.5	0.0	100.0	0.0	20.0	33.3
Single-Unit Trucks	0	0	0	0	0	8	0	8	5	0	0	5	13
Single-Unit %	0.0	0.0	0.0	0.0	0.0	57.1	0.0	50.0	62.5	0.0	0.0	50.0	48.1
Articulated Trucks	0	0	0	0	0	2	0	2	3	0	0	3	5
Articulated %	0.0	0.0	0.0	0.0	0.0	14.3	0.0	12.5	37.5	0.0	0.0	30.0	18.5
Buses	0	1	0	1	2	4	0	6	0	2	0	2	9
Single-Unit Trucks	0	0	0	0	0	8	0	8	5	0	0	5	13
Articulated Trucks	0	0	0	0	0	2	0	2	3	0	0	3	5
Total Entering Leg	0	1	0	1	2	14	0	16	8	2	0	10	27
Buses	4				1				4				9
Single-Unit Trucks	0				5				8				13
Articulated Trucks	0				3				2				5
Total Exiting Leg	4				9				14				27

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	1	1	0	2	0	1	0	1	3
8:15 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
8:45 AM	0	1	0	1	1	1	0	2	0	0	0	0	3
Total	0	1	0	1	2	4	0	6	0	2	0	2	9
Grand Total	0	1	0	1	2	4	0	6	0	2	0	2	9
Approach %	0.0	100.0	0.0		33.3	66.7	0.0		0.0	100.0	0.0		
Total %	0.0	11.1	0.0	11.1	22.2	44.4	0.0	66.7	0.0	22.2	0.0	22.2	
Exiting Leg Total				4				1				4	9

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	1	1	0	2	0	1	0	1	3
8:15 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
8:45 AM	0	1	0	1	1	1	0	2	0	0	0	0	3
Total Volume	0	1	0	1	2	4	0	6	0	2	0	2	9
% Approach Total	0.0	100.0	0.0		33.3	66.7	0.0		0.0	100.0	0.0		
PHF	0.000	0.250	0.000	0.250	0.500	1.000	0.000	0.750	0.000	0.500	0.000	0.500	0.750
Entering Leg	0	1	0	1	2	4	0	6	0	2	0	2	9
Exiting Leg				4				1				4	9
Total				5				7				6	18

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Single-Unit Trucks

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
8:15 AM	0	0	0	0	0	3	0	3	1	0	0	1	4
8:30 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	8	0	8	5	0	0	5	13
Grand Total	0	0	0	0	0	8	0	8	5	0	0	5	13
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	61.5	0.0	61.5	38.5	0.0	0.0	38.5	
Exiting Leg Total	0				5				8				13

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
8:15 AM	0	0	0	0	0	3	0	3	1	0	0	1	4
8:30 AM	0	0	0	0	0	2	0	2	2	0	0	2	4
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	8	0	8	5	0	0	5	13
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.667	0.625	0.000	0.000	0.625	0.813
Entering Leg	0				8				5				13
Exiting Leg	0				5				8				13
Total	0				13				13				26

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Articulated Trucks

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	2	0	2	3	0	0	3	5
Grand Total	0	0	0	0	0	2	0	2	3	0	0	3	5
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	40.0	0.0	40.0	60.0	0.0	0.0	60.0	
Exiting Leg Total	0				3				2				5

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	3	0	0	3	5
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.375	0.000	0.000	0.375	0.417
Entering Leg	0				2				3				5
Exiting Leg	0				3				2				5
Total	0				5				5				10

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Bicycles (on Roadway and Crosswalks)

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total	
	from North							from East						from West							
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	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	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0							0						0						0	

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total	
	from North							from East						from West							
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0							0						0						0	
Total	0							0						0						0	

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Pedestrians

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total	
	from North							from East						from West							
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	10	10	0	0	0	1	0	1	0	0	0	0	0	0	0	0	11
8:30 AM	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	3	10	13	0	0	0	1	0	1	0	0	0	0	2	0	0	2	16
Grand Total	0	0	0	3	10	13	0	0	0	1	0	1	0	0	0	0	2	0	0	2	16
Approach %	0	0	0	23.077	76.923		0	0	0	100	0		0	0	0	100	0				
Total %	0	0	0	18.75	62.5	81.25	0	0	0	6.25	0	6.25	0	0	0	12.5	0		12.5		
Exiting Leg Total	13						1						2						16		

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total	
	from North							from East						from West							
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	10	10	0	0	0	1	0	1	0	0	0	0	0	0	0	0	11
8:30 AM	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 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	3	10	13	0	0	0	1	0	1	0	0	0	0	2	0	0	2	16
% Approach Total	0.0	0.0	0.0	23.1	76.9		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	100.0	0.0				
PHF	0.000	0.000	0.000	0.250	0.250	0.325	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.364	
Entering Leg	0	0	0	3	10	13	0	0	0	1	0	1	0	0	0	0	2	0	0	2	16
Exiting Leg	13						1						2						16		
Total	26						2						4						32		

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	1	0	0	1	1	63	0	64	47	0	0	47	112
2:45 PM	1	0	0	1	1	64	0	65	66	0	0	66	132
Total	2	0	0	2	2	127	0	129	113	0	0	113	244
3:00 PM	0	0	0	0	0	67	0	67	55	0	0	55	122
3:15 PM	0	0	0	0	0	52	0	52	74	1	0	75	127
Total	0	0	0	0	0	119	0	119	129	1	0	130	249
Grand Total	2	0	0	2	2	246	0	248	242	1	0	243	493
Approach %	100.0	0.0	0.0		0.8	99.2	0.0		99.6	0.4	0.0		
Total %	0.4	0.0	0.0	0.4	0.4	49.9	0.0	50.3	49.1	0.2	0.0	49.3	
Exiting Leg Total	3				242				248				493
Cars	2	0	0	2	1	237	0	238	233	1	0	234	474
% Cars	100.0	0.0	0.0	100.0	50.0	96.3	0.0	96.0	96.3	100.0	0.0	96.3	96.1
Exiting Leg Total	2				233				239				474
Heavy Vehicles	0	0	0	0	1	9	0	10	9	0	0	9	19
% Heavy Vehicles	0.0	0.0	0.0	0.0	50.0	3.7	0.0	4.0	3.7	0.0	0.0	3.7	3.9
Exiting Leg Total	1				9				9				19

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	1	0	0	1	1	63	0	64	47	0	0	47	112
2:45 PM	1	0	0	1	1	64	0	65	66	0	0	66	132
3:00 PM	0	0	0	0	0	67	0	67	55	0	0	55	122
3:15 PM	0	0	0	0	0	52	0	52	74	1	0	75	127
Total Volume	2	0	0	2	2	246	0	248	242	1	0	243	493
% Approach Total	100.0	0.0	0.0		0.8	99.2	0.0		99.6	0.4	0.0		
PHF	0.500	0.000	0.000	0.500	0.500	0.918	0.000	0.925	0.818	0.250	0.000	0.810	0.934
Cars	2	0	0	2	1	237	0	238	233	1	0	234	474
Cars %	100.0	0.0	0.0	100.0	50.0	96.3	0.0	96.0	96.3	100.0	0.0	96.3	96.1
Heavy Vehicles	0	0	0	0	1	9	0	10	9	0	0	9	19
Heavy Vehicles %	0.0	0.0	0.0	0.0	50.0	3.7	0.0	4.0	3.7	0.0	0.0	3.7	3.9
Cars Enter Leg	2	0	0	2	1	237	0	238	233	1	0	234	474
Heavy Enter Leg	0	0	0	0	1	9	0	10	9	0	0	9	19
Total Entering Leg	2	0	0	2	2	246	0	248	242	1	0	243	493
Cars Exiting Leg	2				233				239				474
Heavy Exiting Leg	1				9				9				19
Total Exiting Leg	3				242				248				493

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	1	0	0	1	0	59	0	59	45	0	0	45	105
2:45 PM	1	0	0	1	1	63	0	64	64	0	0	64	129
Total	2	0	0	2	1	122	0	123	109	0	0	109	234
3:00 PM	0	0	0	0	0	66	0	66	52	0	0	52	118
3:15 PM	0	0	0	0	0	49	0	49	72	1	0	73	122
Total	0	0	0	0	0	115	0	115	124	1	0	125	240
Grand Total	2	0	0	2	1	237	0	238	233	1	0	234	474
Approach %	100.0	0.0	0.0		0.4	99.6	0.0		99.6	0.4	0.0		
Total %	0.4	0.0	0.0	0.4	0.2	50.0	0.0	50.2	49.2	0.2	0.0	49.4	
Exiting Leg Total	2				233				239				474

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	1	0	0	1	0	59	0	59	45	0	0	45	105
2:45 PM	1	0	0	1	1	63	0	64	64	0	0	64	129
3:00 PM	0	0	0	0	0	66	0	66	52	0	0	52	118
3:15 PM	0	0	0	0	0	49	0	49	72	1	0	73	122
Total Volume	2	0	0	2	1	237	0	238	233	1	0	234	474
% Approach Total	100.0	0.0	0.0		0.4	99.6	0.0		99.6	0.4	0.0		
PHF	0.500	0.000	0.000	0.500	0.250	0.898	0.000	0.902	0.809	0.250	0.000	0.801	0.919
Entering Leg	2	0	0	2	1	237	0	238	233	1	0	234	474
Exiting Leg	2				233				239				474
Total	4				471				473				948

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	1	4	0	5	2	0	0	2	7
2:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	0	0	0	1	5	0	6	4	0	0	4	10
3:00 PM	0	0	0	0	0	1	0	1	3	0	0	3	4
3:15 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
Total	0	0	0	0	0	4	0	4	5	0	0	5	9
Grand Total	0	0	0	0	1	9	0	10	9	0	0	9	19
Approach %	0.0	0.0	0.0		10.0	90.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	5.3	47.4	0.0	52.6	47.4	0.0	0.0	47.4	
Exiting Leg Total				1				9				9	19
Buses	0	0	0	0	1	2	0	3	0	0	0	0	3
% Buses	0.0	0.0	0.0	0.0	100.0	22.2	0.0	30.0	0.0	0.0	0.0	0.0	15.8
Exiting Leg Total				1				0				2	3
Single-Unit Trucks	0	0	0	0	0	5	0	5	8	0	0	8	13
% Single-Unit	0.0	0.0	0.0	0.0	0.0	55.6	0.0	50.0	88.9	0.0	0.0	88.9	68.4
Exiting Leg Total				0				8				5	13
Articulated Trucks	0	0	0	0	0	2	0	2	1	0	0	1	3
% Articulated	0.0	0.0	0.0	0.0	0.0	22.2	0.0	20.0	11.1	0.0	0.0	11.1	15.8
Exiting Leg Total				0				1				2	3

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	1	4	0	5	2	0	0	2	7
2:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
3:00 PM	0	0	0	0	0	1	0	1	3	0	0	3	4
3:15 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
Total Volume	0	0	0	0	1	9	0	10	9	0	0	9	19
% Approach Total	0.0	0.0	0.0		10.0	90.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.563	0.000	0.500	0.750	0.000	0.000	0.750	0.679
Buses	0	0	0	0	1	2	0	3	0	0	0	0	3
Buses %	0.0	0.0	0.0	0.0	100.0	22.2	0.0	30.0	0.0	0.0	0.0	0.0	15.8
Single-Unit Trucks	0	0	0	0	0	5	0	5	8	0	0	8	13
Single-Unit %	0.0	0.0	0.0	0.0	0.0	55.6	0.0	50.0	88.9	0.0	0.0	88.9	68.4
Articulated Trucks	0	0	0	0	0	2	0	2	1	0	0	1	3
Articulated %	0.0	0.0	0.0	0.0	0.0	22.2	0.0	20.0	11.1	0.0	0.0	11.1	15.8
Buses	0	0	0	0	1	2	0	3	0	0	0	0	3
Single-Unit Trucks	0	0	0	0	0	5	0	5	8	0	0	8	13
Articulated Trucks	0	0	0	0	0	2	0	2	1	0	0	1	3
Total Entering Leg	0	0	0	0	1	9	0	10	9	0	0	9	19
Buses				1				0				2	3
Single-Unit Trucks				0				8				5	13
Articulated Trucks				0				1				2	3
Total Exiting Leg				1				9				9	19

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Buses

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	1	1	0	2	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	0	0	0	0	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	0	0	1	2	0	3	0	0	0	0	3
Approach %	0.0	0.0	0.0		33.3	66.7	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	33.3	66.7	0.0	100.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1				0				2				3

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	1	1	0	2	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	1	2	0	3	0	0	0	0	3
% Approach Total	0.0	0.0	0.0		33.3	66.7	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.375	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	0	0	0	1	2	0	3	0	0	0	0	3
Exiting Leg	1				0				2				3
Total	1				3				2				6

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Single-Unit Trucks

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	3	0	3	3	0	0	3	6
3:00 PM	0	0	0	0	0	1	0	1	3	0	0	3	4
3:15 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	0	0	0	0	2	0	2	5	0	0	5	7
Grand Total	0	0	0	0	0	5	0	5	8	0	0	8	13
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	38.5	0.0	38.5	61.5	0.0	0.0	61.5	
Exiting Leg Total	0				8				5				13

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	3	0	3	2	0	0	2	5
2:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
3:00 PM	0	0	0	0	0	1	0	1	3	0	0	3	4
3:15 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total Volume	0	0	0	0	0	5	0	5	8	0	0	8	13
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.417	0.000	0.417	0.667	0.000	0.000	0.667	0.650
Entering Leg	0				5				8				13
Exiting Leg	0				8				5				13
Total	0				13				13				26

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Articulated Trucks

	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	0	0	0	0	0	1	0	1	1	0	0	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	2	0	2	1	0	0	1	3
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	66.7	0.0	66.7	33.3	0.0	0.0	33.3	
Exiting Leg Total	0				1				2				3

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway				Lowell Street				Lowell Street				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	1	0	0	1	3
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.250	0.000	0.000	0.250	0.375
Entering Leg	0				2				1				3
Exiting Leg	0				1				2				3
Total	0				3				3				6

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Bicycles (on Roadway and Crosswalks)

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	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	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Approach %	0.0	0.0	0.0	0.0	100.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	100.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	2							0						0						2		

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	100.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.250		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg	2							0						0						2		
Total	4							0						0						4		

PDI File #: **217901 G**
 Location: **N: Dolbeare School Eastern Driveway**
 Location: **E: Lowell Street W: Lowell Street**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Pedestrians

	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	2	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	2	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Approach %	0	0	0	50	50			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	0	50	50	100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total	4							0						0						4		

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Dolbeare School Eastern Driveway							Lowell Street						Lowell Street						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	2	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
% Approach Total	0.0	0.0	0.0	50.0	50.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.250	0.500	0.500		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	2	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Exiting Leg	4							0						0						4		
Total	8							0						0						8		

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	11	90	0	101	35	18	0	53	0	0	0	0	154
8:15 AM	9	68	0	77	74	37	0	111	0	0	0	0	188
8:30 AM	3	76	0	79	57	1	0	58	0	0	0	0	137
8:45 AM	0	72	0	72	49	1	0	50	0	0	0	0	122
Total	23	306	0	329	215	57	0	272	0	0	0	0	601
Grand Total	23	306	0	329	215	57	0	272	0	0	0	0	601
Approach %	7.0	93.0	0.0		79.0	21.0	0.0		0.0	0.0	0.0	0.0	
Total %	3.8	50.9	0.0	54.7	35.8	9.5	0.0	45.3	0.0	0.0	0.0	0.0	
Exiting Leg Total				215				306				80	601
Cars	23	292	0	315	207	57	0	264	0	0	0	0	579
% Cars	100.0	95.4	0.0	95.7	96.3	100.0	0.0	97.1	0.0	0.0	0.0	0.0	96.3
Exiting Leg Total				207				292				80	579
Heavy Vehicles	0	14	0	14	8	0	0	8	0	0	0	0	22
% Heavy Vehicles	0.0	4.6	0.0	4.3	3.7	0.0	0.0	2.9	0.0	0.0	0.0	0.0	3.7
Exiting Leg Total				8				14				0	22

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	11	90	0	101	35	18	0	53	0	0	0	0	154
8:15 AM	9	68	0	77	74	37	0	111	0	0	0	0	188
8:30 AM	3	76	0	79	57	1	0	58	0	0	0	0	137
8:45 AM	0	72	0	72	49	1	0	50	0	0	0	0	122
Total Volume	23	306	0	329	215	57	0	272	0	0	0	0	601
% Approach Total	7.0	93.0	0.0		79.0	21.0	0.0		0.0	0.0	0.0	0.0	
PHF	0.523	0.850	0.000	0.814	0.726	0.385	0.000	0.613	0.000	0.000	0.000	0.000	0.799
Cars	23	292	0	315	207	57	0	264	0	0	0	0	579
Cars %	100.0	95.4	0.0	95.7	96.3	100.0	0.0	97.1	0.0	0.0	0.0	0.0	96.3
Heavy Vehicles	0	14	0	14	8	0	0	8	0	0	0	0	22
Heavy Vehicles %	0.0	4.6	0.0	4.3	3.7	0.0	0.0	2.9	0.0	0.0	0.0	0.0	3.7
Cars Enter Leg	23	292	0	315	207	57	0	264	0	0	0	0	579
Heavy Enter Leg	0	14	0	14	8	0	0	8	0	0	0	0	22
Total Entering Leg	23	306	0	329	215	57	0	272	0	0	0	0	601
Cars Exiting Leg				207				292				80	579
Heavy Exiting Leg				8				14				0	22
Total Exiting Leg				215				306				80	601

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	11	84	0	95	35	18	0	53	0	0	0	0	148
8:15 AM	9	67	0	76	69	37	0	106	0	0	0	0	182
8:30 AM	3	72	0	75	56	1	0	57	0	0	0	0	132
8:45 AM	0	69	0	69	47	1	0	48	0	0	0	0	117
Total	23	292	0	315	207	57	0	264	0	0	0	0	579
Grand Total	23	292	0	315	207	57	0	264	0	0	0	0	579
Approach %	7.3	92.7	0.0		78.4	21.6	0.0		0.0	0.0	0.0		
Total %	4.0	50.4	0.0	54.4	35.8	9.8	0.0	45.6	0.0	0.0	0.0	0.0	
Exiting Leg Total				207				292				80	579

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	11	84	0	95	35	18	0	53	0	0	0	0	148
8:15 AM	9	67	0	76	69	37	0	106	0	0	0	0	182
8:30 AM	3	72	0	75	56	1	0	57	0	0	0	0	132
8:45 AM	0	69	0	69	47	1	0	48	0	0	0	0	117
Total Volume	23	292	0	315	207	57	0	264	0	0	0	0	579
% Approach Total	7.3	92.7	0.0		78.4	21.6	0.0		0.0	0.0	0.0		
PHF	0.523	0.869	0.000	0.829	0.750	0.385	0.000	0.623	0.000	0.000	0.000	0.000	0.795
Entering Leg	23	292	0	315	207	57	0	264	0	0	0	0	579
Exiting Leg				207				292				80	579
Total				522				556				80	1158

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	6	0	6	0	0	0	0	0	0	0	0	6
8:15 AM	0	1	0	1	5	0	0	5	0	0	0	0	6
8:30 AM	0	4	0	4	1	0	0	1	0	0	0	0	5
8:45 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
Total	0	14	0	14	8	0	0	8	0	0	0	0	22
Grand Total	0	14	0	14	8	0	0	8	0	0	0	0	22
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	63.6	0.0	63.6	36.4	0.0	0.0	36.4	0.0	0.0	0.0	0.0	
Exiting Leg Total	8				14				0				22
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	0	11	0	11	5	0	0	5	0	0	0	0	16
% Single-Unit	0.0	78.6	0.0	78.6	62.5	0.0	0.0	62.5	0.0	0.0	0.0	0.0	72.7
Exiting Leg Total	5				11				0				16
Articulated Trucks	0	3	0	3	3	0	0	3	0	0	0	0	6
% Articulated	0.0	21.4	0.0	21.4	37.5	0.0	0.0	37.5	0.0	0.0	0.0	0.0	27.3
Exiting Leg Total	3				3				0				6

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	6	0	6	0	0	0	0	0	0	0	0	6
8:15 AM	0	1	0	1	5	0	0	5	0	0	0	0	6
8:30 AM	0	4	0	4	1	0	0	1	0	0	0	0	5
8:45 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
Total Volume	0	14	0	14	8	0	0	8	0	0	0	0	22
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.583	0.000	0.583	0.400	0.000	0.000	0.400	0.000	0.000	0.000	0.000	0.917
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	11	0	11	5	0	0	5	0	0	0	0	16
Single-Unit %	0.0	78.6	0.0	78.6	62.5	0.0	0.0	62.5	0.0	0.0	0.0	0.0	72.7
Articulated Trucks	0	3	0	3	3	0	0	3	0	0	0	0	6
Articulated %	0.0	21.4	0.0	21.4	37.5	0.0	0.0	37.5	0.0	0.0	0.0	0.0	27.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	11	0	11	5	0	0	5	0	0	0	0	16
Articulated Trucks	0	3	0	3	3	0	0	3	0	0	0	0	6
Total Entering Leg	0	14	0	14	8	0	0	8	0	0	0	0	22
Buses	0				0				0				0
Single-Unit Trucks	5				11				0				16
Articulated Trucks	3				3				0				6
Total Exiting Leg	8				14				0				22

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	1	0	1	2	0	0	2	0	0	0	0	0	3
8:30 AM	0	4	0	4	1	0	0	1	0	0	0	0	0	5
8:45 AM	0	3	0	3	2	0	0	2	0	0	0	0	0	5
Total	0	11	0	11	5	0	0	5	0	0	0	0	0	16
Grand Total	0	11	0	11	5	0	0	5	0	0	0	0	0	16
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	68.8	0.0	68.8	31.3	0.0	0.0	31.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				5				11					0	16

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	1	0	1	2	0	0	2	0	0	0	0	0	3
8:30 AM	0	4	0	4	1	0	0	1	0	0	0	0	0	5
8:45 AM	0	3	0	3	2	0	0	2	0	0	0	0	0	5
Total Volume	0	11	0	11	5	0	0	5	0	0	0	0	0	16
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.688	0.000	0.688	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.800
Entering Leg	0	11	0	11	5	0	0	5	0	0	0	0	0	16
Exiting Leg				5				11					0	16
Total				16				16					0	32

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	3	0	0	3	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	3	3	0	0	3	0	0	0	0	0	6
Grand Total	0	3	0	3	3	0	0	3	0	0	0	0	0	6
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	50.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				3				3					0	6

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	3	0	0	3	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	0	3	3	0	0	3	0	0	0	0	0	6
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	3	0	3	3	0	0	3	0	0	0	0	0	6
Exiting Leg				3				3					0	6
Total				6				6					0	12

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	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	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	1	6	7	0	0	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	0	0	0	4	3	7	0	0	0	0	0	0	0	0	0	2	1	3	10
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	5	9	14	0	0	0	0	0	0	0	0	0	3	2	5	19
Grand Total	0	0	0	5	9	14	0	0	0	0	0	0	0	0	0	3	2	5	19
Approach %	0	0	0	35.714	64.286		0	0	0	0	0	0	0	0	0	60	40		
Total %	0	0	0	26.316	47.368	73.684	0	0	0	0	0	0	0	0	0	15.789	10.526	26.316	
Exiting Leg Total	14						0						5						19

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	1	6	7	0	0	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	0	0	0	4	3	7	0	0	0	0	0	0	0	0	0	2	1	3	10
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	5	9	14	0	0	0	0	0	0	0	0	0	3	2	5	19
% Approach Total	0.0	0.0	0.0	35.7	64.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	40.0		
PHF	0.000	0.000	0.000	0.313	0.375	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.500	0.417	0.475
Entering Leg	0	0	0	5	9	14	0	0	0	0	0	0	0	0	0	3	2	5	19
Exiting Leg	14						0						5						19
Total	28						0						10						38

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	1	58	0	59	74	2	0	76	0	0	0	0	135
2:45 PM	0	66	0	66	103	3	0	106	0	0	0	0	172
Total	1	124	0	125	177	5	0	182	0	0	0	0	307
3:00 PM	1	46	0	47	80	1	0	81	0	0	0	0	128
3:15 PM	0	70	0	70	85	1	0	86	0	0	0	0	156
Total	1	116	0	117	165	2	0	167	0	0	0	0	284
Grand Total	2	240	0	242	342	7	0	349	0	0	0	0	591
Approach %	0.8	99.2	0.0		98.0	2.0	0.0		0.0	0.0	0.0		
Total %	0.3	40.6	0.0	40.9	57.9	1.2	0.0	59.1	0.0	0.0	0.0	0.0	
Exiting Leg Total				342				240				9	591
Cars	2	236	0	238	333	7	0	340	0	0	0	0	578
% Cars	100.0	98.3	0.0	98.3	97.4	100.0	0.0	97.4	0.0	0.0	0.0	0.0	97.8
Exiting Leg Total				333				236				9	578
Heavy Vehicles	0	4	0	4	9	0	0	9	0	0	0	0	13
% Heavy Vehicles	0.0	1.7	0.0	1.7	2.6	0.0	0.0	2.6	0.0	0.0	0.0	0.0	2.2
Exiting Leg Total				9				4				0	13

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	1	58	0	59	74	2	0	76	0	0	0	0	135
2:45 PM	0	66	0	66	103	3	0	106	0	0	0	0	172
3:00 PM	1	46	0	47	80	1	0	81	0	0	0	0	128
3:15 PM	0	70	0	70	85	1	0	86	0	0	0	0	156
Total Volume	2	240	0	242	342	7	0	349	0	0	0	0	591
% Approach Total	0.8	99.2	0.0		98.0	2.0	0.0		0.0	0.0	0.0		
PHF	0.500	0.857	0.000	0.864	0.830	0.583	0.000	0.823	0.000	0.000	0.000	0.000	0.859
Cars	2	236	0	238	333	7	0	340	0	0	0	0	578
Cars %	100.0	98.3	0.0	98.3	97.4	100.0	0.0	97.4	0.0	0.0	0.0	0.0	97.8
Heavy Vehicles	0	4	0	4	9	0	0	9	0	0	0	0	13
Heavy Vehicles %	0.0	1.7	0.0	1.7	2.6	0.0	0.0	2.6	0.0	0.0	0.0	0.0	2.2
Cars Enter Leg	2	236	0	238	333	7	0	340	0	0	0	0	578
Heavy Enter Leg	0	4	0	4	9	0	0	9	0	0	0	0	13
Total Entering Leg	2	240	0	242	342	7	0	349	0	0	0	0	591
Cars Exiting Leg				333				236				9	578
Heavy Exiting Leg				9				4				0	13
Total Exiting Leg				342				240				9	591

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	1	56	0	57	71	2	0	73	0	0	0	0	130
2:45 PM	0	66	0	66	102	3	0	105	0	0	0	0	171
Total	1	122	0	123	173	5	0	178	0	0	0	0	301
3:00 PM	1	45	0	46	75	1	0	76	0	0	0	0	122
3:15 PM	0	69	0	69	85	1	0	86	0	0	0	0	155
Total	1	114	0	115	160	2	0	162	0	0	0	0	277
Grand Total	2	236	0	238	333	7	0	340	0	0	0	0	578
Approach %	0.8	99.2	0.0		97.9	2.1	0.0		0.0	0.0	0.0		
Total %	0.3	40.8	0.0	41.2	57.6	1.2	0.0	58.8	0.0	0.0	0.0	0.0	
Exiting Leg Total				333				236				9	578

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	1	56	0	57	71	2	0	73	0	0	0	0	130
2:45 PM	0	66	0	66	102	3	0	105	0	0	0	0	171
3:00 PM	1	45	0	46	75	1	0	76	0	0	0	0	122
3:15 PM	0	69	0	69	85	1	0	86	0	0	0	0	155
Total Volume	2	236	0	238	333	7	0	340	0	0	0	0	578
% Approach Total	0.8	99.2	0.0		97.9	2.1	0.0		0.0	0.0	0.0		
PHF	0.500	0.855	0.000	0.862	0.816	0.583	0.000	0.810	0.000	0.000	0.000	0.000	0.845
Entering Leg	2	236	0	238	333	7	0	340	0	0	0	0	578
Exiting Leg				333				236				9	578
Total				571				576				9	1156

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
2:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	2	0	2	4	0	0	4	0	0	0	0	6
3:00 PM	0	1	0	1	5	0	0	5	0	0	0	0	6
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	5	0	0	5	0	0	0	0	7
Grand Total	0	4	0	4	9	0	0	9	0	0	0	0	13
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	30.8	0.0	30.8	69.2	0.0	0.0	69.2	0.0	0.0	0.0	0.0	
Exiting Leg Total	9				4				0				13
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Buses	0.0	25.0	0.0	25.0	11.1	0.0	0.0	11.1	0.0	0.0	0.0	0.0	15.4
Exiting Leg Total	1				1				0				2
Single-Unit Trucks	0	3	0	3	8	0	0	8	0	0	0	0	11
% Single-Unit	0.0	75.0	0.0	75.0	88.9	0.0	0.0	88.9	0.0	0.0	0.0	0.0	84.6
Exiting Leg Total	8				3				0				11
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
2:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
3:00 PM	0	1	0	1	5	0	0	5	0	0	0	0	6
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	4	0	4	9	0	0	9	0	0	0	0	13
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.500	0.450	0.000	0.000	0.450	0.000	0.000	0.000	0.000	0.542
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
Buses %	0.0	25.0	0.0	25.0	11.1	0.0	0.0	11.1	0.0	0.0	0.0	0.0	15.4
Single-Unit Trucks	0	3	0	3	8	0	0	8	0	0	0	0	11
Single-Unit %	0.0	75.0	0.0	75.0	88.9	0.0	0.0	88.9	0.0	0.0	0.0	0.0	84.6
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
Single-Unit Trucks	0	3	0	3	8	0	0	8	0	0	0	0	11
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	4	0	4	9	0	0	9	0	0	0	0	13
Buses	1				1				0				2
Single-Unit Trucks	8				3				0				11
Articulated Trucks	0				0				0				0
Total Exiting Leg	9				4				0				13

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Buses

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Grand Total	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	50.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1				1				0				2	

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	0	2
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Exiting Leg	1				1				0				2	
Total	2				2				0				4	

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Single-Unit Trucks

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
2:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	2	0	2	4	0	0	4	0	0	0	0	6
3:00 PM	0	0	0	0	4	0	0	4	0	0	0	0	4
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	4	0	0	4	0	0	0	0	5
Grand Total	0	3	0	3	8	0	0	8	0	0	0	0	11
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	27.3	0.0	27.3	72.7	0.0	0.0	72.7	0.0	0.0	0.0	0.0	
Exiting Leg Total	8				3				0				11

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
2:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
3:00 PM	0	0	0	0	4	0	0	4	0	0	0	0	4
3:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	3	0	3	8	0	0	8	0	0	0	0	11
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.375	0.000	0.375	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.550
Entering Leg	0	3	0	3	8	0	0	8	0	0	0	0	11
Exiting Leg	8				3				0				11
Total	11				11				0				22

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Articulated Trucks

	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Northern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: 217901 H
 Location: N: Vernon Street S: Vernon Street
 Location: W: Dolbeare School Northern Driveway
 City, State: Wakefield, MA
 Client: GPI/ S. Theriault
 Site Code: NEX-2020177
 Count Date: Wednesday, May 12, 2021
 Start Time: 2:30 PM
 End Time: 3:30 PM



Bicycles (on Roadway and Crosswalks)

	Vernon Street							Vernon Street							Dolbeare School Northern Driveway							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	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	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	1							0							0							1

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street							Vernon Street							Dolbeare School Northern Driveway							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Exiting Leg	1							0							0							1
Total	1							1							0							2

PDI File #: **217901 H**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Northern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Pedestrians

	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	8
2:45 PM	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	3	0	3	7
Total	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	8	3	11	15
3:00 PM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
Total	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	2	4	6
Grand Total	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	10	5	15	21
Approach %	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	66.667	33.333		
Total %	0	0	0	28.571	0	28.571	0	0	0	0	0	0	0	0	0	47.619	23.81	71.429	
Exiting Leg Total	6						0						15						21

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street						Vernon Street						Dolbeare School Northern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	8
2:45 PM	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	3	0	3	7
3:00 PM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
Total Volume	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	10	5	15	21
% Approach Total	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	33.3		
PHF	0.000	0.000	0.000	0.375	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.417	0.469	0.656
Entering Leg	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	10	5	15	21
Exiting Leg	6						0						15						21
Total	12						0						30						42

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	2	85	1	88	59	4	0	63	8	1	0	9	160
8:15 AM	0	66	0	66	92	1	0	93	44	13	0	57	216
8:30 AM	0	74	0	74	59	0	0	59	2	0	0	2	135
8:45 AM	0	70	0	70	51	0	0	51	0	0	0	0	121
Total	2	295	1	298	261	5	0	266	54	14	0	68	632
Grand Total	2	295	1	298	261	5	0	266	54	14	0	68	632
Approach %	0.7	99.0	0.3		98.1	1.9	0.0		79.4	20.6	0.0		
Total %	0.3	46.7	0.2	47.2	41.3	0.8	0.0	42.1	8.5	2.2	0.0	10.8	
Exiting Leg Total				276				349				7	632
Cars	2	277	0	279	252	5	0	257	54	14	0	68	604
% Cars	100.0	93.9	0.0	93.6	96.6	100.0	0.0	96.6	100.0	100.0	0.0	100.0	95.6
Exiting Leg Total				266				331				7	604
Heavy Vehicles	0	18	1	19	9	0	0	9	0	0	0	0	28
% Heavy Vehicles	0.0	6.1	100.0	6.4	3.4	0.0	0.0	3.4	0.0	0.0	0.0	0.0	4.4
Exiting Leg Total				10				18				0	28

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

8:00 AM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	2	85	1	88	59	4	0	63	8	1	0	9	160
8:15 AM	0	66	0	66	92	1	0	93	44	13	0	57	216
8:30 AM	0	74	0	74	59	0	0	59	2	0	0	2	135
8:45 AM	0	70	0	70	51	0	0	51	0	0	0	0	121
Total Volume	2	295	1	298	261	5	0	266	54	14	0	68	632
% Approach Total	0.7	99.0	0.3		98.1	1.9	0.0		79.4	20.6	0.0		
PHF	0.250	0.868	0.250	0.847	0.709	0.313	0.000	0.715	0.307	0.269	0.000	0.298	0.731
Cars	2	277	0	279	252	5	0	257	54	14	0	68	604
Cars %	100.0	93.9	0.0	93.6	96.6	100.0	0.0	96.6	100.0	100.0	0.0	100.0	95.6
Heavy Vehicles	0	18	1	19	9	0	0	9	0	0	0	0	28
Heavy Vehicles %	0.0	6.1	100.0	6.4	3.4	0.0	0.0	3.4	0.0	0.0	0.0	0.0	4.4
Cars Enter Leg	2	277	0	279	252	5	0	257	54	14	0	68	604
Heavy Enter Leg	0	18	1	19	9	0	0	9	0	0	0	0	28
Total Entering Leg	2	295	1	298	261	5	0	266	54	14	0	68	632
Cars Exiting Leg				266				331				7	604
Heavy Exiting Leg				10				18				0	28
Total Exiting Leg				276				349				7	632

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	2	80	0	82	58	4	0	62	8	1	0	9	153
8:15 AM	0	62	0	62	88	1	0	89	44	13	0	57	208
8:30 AM	0	69	0	69	58	0	0	58	2	0	0	2	129
8:45 AM	0	66	0	66	48	0	0	48	0	0	0	0	114
Total	2	277	0	279	252	5	0	257	54	14	0	68	604
Grand Total	2	277	0	279	252	5	0	257	54	14	0	68	604
Approach %	0.7	99.3	0.0		98.1	1.9	0.0		79.4	20.6	0.0		
Total %	0.3	45.9	0.0	46.2	41.7	0.8	0.0	42.5	8.9	2.3	0.0	11.3	
Exiting Leg Total				266				331				7	604

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	2	80	0	82	58	4	0	62	8	1	0	9	153
8:15 AM	0	62	0	62	88	1	0	89	44	13	0	57	208
8:30 AM	0	69	0	69	58	0	0	58	2	0	0	2	129
8:45 AM	0	66	0	66	48	0	0	48	0	0	0	0	114
Total Volume	2	277	0	279	252	5	0	257	54	14	0	68	604
% Approach Total	0.7	99.3	0.0		98.1	1.9	0.0		79.4	20.6	0.0		
PHF	0.250	0.866	0.000	0.851	0.716	0.313	0.000	0.722	0.307	0.269	0.000	0.298	0.726
Entering Leg	2	277	0	279	252	5	0	257	54	14	0	68	604
Exiting Leg				266				331				7	604
Total				545				588				75	1208

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	5	1	6	1	0	0	1	0	0	0	0	7
8:15 AM	0	4	0	4	4	0	0	4	0	0	0	0	8
8:30 AM	0	5	0	5	1	0	0	1	0	0	0	0	6
8:45 AM	0	4	0	4	3	0	0	3	0	0	0	0	7
Total	0	18	1	19	9	0	0	9	0	0	0	0	28
Grand Total	0	18	1	19	9	0	0	9	0	0	0	0	28
Approach %	0.0	94.7	5.3		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	64.3	3.6	67.9	32.1	0.0	0.0	32.1	0.0	0.0	0.0	0.0	
Exiting Leg Total				10				18					28
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total				0				0					0
Single-Unit Trucks	0	15	1	16	5	0	0	5	0	0	0	0	21
% Single-Unit	0.0	83.3	100.0	84.2	55.6	0.0	0.0	55.6	0.0	0.0	0.0	0.0	75.0
Exiting Leg Total				6				15					21
Articulated Trucks	0	3	0	3	4	0	0	4	0	0	0	0	7
% Articulated	0.0	16.7	0.0	15.8	44.4	0.0	0.0	44.4	0.0	0.0	0.0	0.0	25.0
Exiting Leg Total				4				3					7

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	5	1	6	1	0	0	1	0	0	0	0	7
8:15 AM	0	4	0	4	4	0	0	4	0	0	0	0	8
8:30 AM	0	5	0	5	1	0	0	1	0	0	0	0	6
8:45 AM	0	4	0	4	3	0	0	3	0	0	0	0	7
Total Volume	0	18	1	19	9	0	0	9	0	0	0	0	28
% Approach Total	0.0	94.7	5.3		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.900	0.250	0.792	0.563	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.875
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	15	1	16	5	0	0	5	0	0	0	0	21
Single-Unit %	0.0	83.3	100.0	84.2	55.6	0.0	0.0	55.6	0.0	0.0	0.0	0.0	75.0
Articulated Trucks	0	3	0	3	4	0	0	4	0	0	0	0	7
Articulated %	0.0	16.7	0.0	15.8	44.4	0.0	0.0	44.4	0.0	0.0	0.0	0.0	25.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	15	1	16	5	0	0	5	0	0	0	0	21
Articulated Trucks	0	3	0	3	4	0	0	4	0	0	0	0	7
Total Entering Leg	0	18	1	19	9	0	0	9	0	0	0	0	28
Buses				0				0					0
Single-Unit Trucks				6				15					21
Articulated Trucks				4				3					7
Total Exiting Leg				10				18				0	28

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	3	1	4	1	0	0	1	0	0	0	0	5
8:15 AM	0	3	0	3	1	0	0	1	0	0	0	0	4
8:30 AM	0	5	0	5	1	0	0	1	0	0	0	0	6
8:45 AM	0	4	0	4	2	0	0	2	0	0	0	0	6
Total	0	15	1	16	5	0	0	5	0	0	0	0	21
Grand Total	0	15	1	16	5	0	0	5	0	0	0	0	21
Approach %	0.0	93.8	6.3		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	71.4	4.8	76.2	23.8	0.0	0.0	23.8	0.0	0.0	0.0	0.0	
Exiting Leg Total				6				15					21

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
8:00 AM	0	3	1	4	1	0	0	1	0	0	0	0	5
8:15 AM	0	3	0	3	1	0	0	1	0	0	0	0	4
8:30 AM	0	5	0	5	1	0	0	1	0	0	0	0	6
8:45 AM	0	4	0	4	2	0	0	2	0	0	0	0	6
Total Volume	0	15	1	16	5	0	0	5	0	0	0	0	21
% Approach Total	0.0	93.8	6.3		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.750	0.250	0.800	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.875
Entering Leg	0	15	1	16	5	0	0	5	0	0	0	0	21
Exiting Leg				6				15					21
Total				22				20					42

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	1	0	1	3	0	0	3	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	3	0	3	4	0	0	4	0	0	0	0	0	7
Grand Total	0	3	0	3	4	0	0	4	0	0	0	0	0	7
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	42.9	0.0	42.9	57.1	0.0	0.0	57.1	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				4				3					0	7

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
8:00 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	1	0	1	3	0	0	3	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	3	0	3	4	0	0	4	0	0	0	0	0	7
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.375	0.000	0.375	0.333	0.000	0.000	0.333	0.000	0.000	0.000	0.000	0.000	0.438
Entering Leg	0	3	0	3	4	0	0	4	0	0	0	0	0	7
Exiting Leg				4				3					0	7
Total				7				7					0	14

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**



Bicycles (on Roadway and Crosswalks)

	Vernon Street							Vernon Street							Dolbeare School Southern Driveway							Total	
	from North							from South							from West								
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Left	U-Turn	CW-NB	CW-SB	Total			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	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	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0							0							0							0	

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street							Vernon Street							Dolbeare School Southern Driveway							Total	
	from North							from South							from West								
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Left	U-Turn	CW-NB	CW-SB	Total			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0							0							0							0	
Total	0							0							0							0	

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **8:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Vernon Street						Vernon Street						Dolbeare School Southern Driveway						Total	
	from North						from South						from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6	
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50			
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	100		
Exiting Leg Total	0						0						0						6	6

Peak Hour Analysis from 08:00 AM to 09:00 AM begins at:

	Vernon Street						Vernon Street						Dolbeare School Southern Driveway						Total	
	from North						from South						from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.375	0.375	0.375	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	6	
Exiting Leg	0						0						0						6	6
Total	0						0						0						12	12

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	66	0	66	70	0	0	70	11	4	0	15	151
2:45 PM	0	66	0	66	102	0	0	102	9	3	0	12	180
Total	0	132	0	132	172	0	0	172	20	7	0	27	331
3:00 PM	0	48	0	48	78	0	0	78	3	4	0	7	133
3:15 PM	0	68	0	68	85	0	0	85	8	1	0	9	162
Total	0	116	0	116	163	0	0	163	11	5	0	16	295
Grand Total	0	248	0	248	335	0	0	335	31	12	0	43	626
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		72.1	27.9	0.0		
Total %	0.0	39.6	0.0	39.6	53.5	0.0	0.0	53.5	5.0	1.9	0.0	6.9	
Exiting Leg Total				347				279				0	626
Cars	0	243	0	243	325	0	0	325	30	12	0	42	610
% Cars	0.0	98.0	0.0	98.0	97.0	0.0	0.0	97.0	96.8	100.0	0.0	97.7	97.4
Exiting Leg Total				337				273				0	610
Heavy Vehicles	0	5	0	5	10	0	0	10	1	0	0	1	16
% Heavy Vehicles	0.0	2.0	0.0	2.0	3.0	0.0	0.0	3.0	3.2	0.0	0.0	2.3	2.6
Exiting Leg Total				10				6				0	16

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	66	0	66	70	0	0	70	11	4	0	15	151
2:45 PM	0	66	0	66	102	0	0	102	9	3	0	12	180
3:00 PM	0	48	0	48	78	0	0	78	3	4	0	7	133
3:15 PM	0	68	0	68	85	0	0	85	8	1	0	9	162
Total Volume	0	248	0	248	335	0	0	335	31	12	0	43	626
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		72.1	27.9	0.0		
PHF	0.000	0.912	0.000	0.912	0.821	0.000	0.000	0.821	0.705	0.750	0.000	0.717	0.869
Cars	0	243	0	243	325	0	0	325	30	12	0	42	610
Cars %	0.0	98.0	0.0	98.0	97.0	0.0	0.0	97.0	96.8	100.0	0.0	97.7	97.4
Heavy Vehicles	0	5	0	5	10	0	0	10	1	0	0	1	16
Heavy Vehicles %	0.0	2.0	0.0	2.0	3.0	0.0	0.0	3.0	3.2	0.0	0.0	2.3	2.6
Cars Enter Leg	0	243	0	243	325	0	0	325	30	12	0	42	610
Heavy Enter Leg	0	5	0	5	10	0	0	10	1	0	0	1	16
Total Entering Leg	0	248	0	248	335	0	0	335	31	12	0	43	626
Cars Exiting Leg				337				273				0	610
Heavy Exiting Leg				10				6				0	16
Total Exiting Leg				347				279				0	626

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Cars

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	64	0	64	68	0	0	68	11	4	0	15	147
2:45 PM	0	66	0	66	99	0	0	99	8	3	0	11	176
Total	0	130	0	130	167	0	0	167	19	7	0	26	323
3:00 PM	0	47	0	47	75	0	0	75	3	4	0	7	129
3:15 PM	0	66	0	66	83	0	0	83	8	1	0	9	158
Total	0	113	0	113	158	0	0	158	11	5	0	16	287
Grand Total	0	243	0	243	325	0	0	325	30	12	0	42	610
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		71.4	28.6	0.0		
Total %	0.0	39.8	0.0	39.8	53.3	0.0	0.0	53.3	4.9	2.0	0.0	6.9	
Exiting Leg Total				337				273				0	610

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	64	0	64	68	0	0	68	11	4	0	15	147
2:45 PM	0	66	0	66	99	0	0	99	8	3	0	11	176
3:00 PM	0	47	0	47	75	0	0	75	3	4	0	7	129
3:15 PM	0	66	0	66	83	0	0	83	8	1	0	9	158
Total Volume	0	243	0	243	325	0	0	325	30	12	0	42	610
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		71.4	28.6	0.0		
PHF	0.000	0.920	0.000	0.920	0.821	0.000	0.000	0.821	0.682	0.750	0.000	0.700	0.866
Entering Leg	0	243	0	243	325	0	0	325	30	12	0	42	610
Exiting Leg				337				273				0	610
Total				580				598				42	1220

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
2:45 PM	0	0	0	0	3	0	0	3	1	0	0	1	4
Total	0	2	0	2	5	0	0	5	1	0	0	1	8
3:00 PM	0	1	0	1	3	0	0	3	0	0	0	0	4
3:15 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
Total	0	3	0	3	5	0	0	5	0	0	0	0	8
Grand Total	0	5	0	5	10	0	0	10	1	0	0	1	16
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	31.3	0.0	31.3	62.5	0.0	0.0	62.5	6.3	0.0	0.0	6.3	
Exiting Leg Total	10				6				0				16
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
% Buses	0.0	20.0	0.0	20.0	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	12.5
Exiting Leg Total	1				1				0				2
Single-Unit Trucks	0	4	0	4	8	0	0	8	1	0	0	1	13
% Single-Unit	0.0	80.0	0.0	80.0	80.0	0.0	0.0	80.0	100.0	0.0	0.0	100.0	81.3
Exiting Leg Total	8				5				0				13
Articulated Trucks	0	0	0	0	1	0	0	1	0	0	0	0	1
% Articulated	0.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	6.3
Exiting Leg Total	1				0				0				1

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
2:45 PM	0	0	0	0	3	0	0	3	1	0	0	1	4
3:00 PM	0	1	0	1	3	0	0	3	0	0	0	0	4
3:15 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
Total Volume	0	5	0	5	10	0	0	10	1	0	0	1	16
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.625	0.000	0.625	0.833	0.000	0.000	0.833	0.250	0.000	0.000	0.250	1.000
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
Buses %	0.0	20.0	0.0	20.0	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	12.5
Single-Unit Trucks	0	4	0	4	8	0	0	8	1	0	0	1	13
Single-Unit %	0.0	80.0	0.0	80.0	80.0	0.0	0.0	80.0	100.0	0.0	0.0	100.0	81.3
Articulated Trucks	0	0	0	0	1	0	0	1	0	0	0	0	1
Articulated %	0.0	0.0	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	6.3
Buses	0	1	0	1	1	0	0	1	0	0	0	0	2
Single-Unit Trucks	0	4	0	4	8	0	0	8	1	0	0	1	13
Articulated Trucks	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Entering Leg	0	5	0	5	10	0	0	10	1	0	0	1	16
Buses	1				1				0				2
Single-Unit Trucks	8				5				0				13
Articulated Trucks	1				0				0				1
Total Exiting Leg	10				6				0				16

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Buses

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Grand Total	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	50.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1				1				0				2	

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	0	2
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Exiting Leg	1				1				0				2	
Total	2				2				0				4	

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Single-Unit Trucks

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
2:45 PM	0	0	0	0	3	0	0	3	1	0	0	1	4
Total	0	2	0	2	5	0	0	5	1	0	0	1	8
3:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
3:15 PM	0	2	0	2	1	0	0	1	0	0	0	0	3
Total	0	2	0	2	3	0	0	3	0	0	0	0	5
Grand Total	0	4	0	4	8	0	0	8	1	0	0	1	13
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	30.8	0.0	30.8	61.5	0.0	0.0	61.5	7.7	0.0	0.0	7.7	
Exiting Leg Total	8				5				0				13

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
2:30 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
2:45 PM	0	0	0	0	3	0	0	3	1	0	0	1	4
3:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
3:15 PM	0	2	0	2	1	0	0	1	0	0	0	0	3
Total Volume	0	4	0	4	8	0	0	8	1	0	0	1	13
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.500	0.667	0.000	0.000	0.667	0.250	0.000	0.000	0.250	0.813
Entering Leg	0	4	0	4	8	0	0	8	1	0	0	1	13
Exiting Leg	8				5				0				13
Total	12				13				1				26

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**
 Class:



Articulated Trucks

	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	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
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Approach %	0.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0		
Exiting Leg Total					1				0				1	

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street				Vernon Street				Dolbeare School Southern Driveway				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000		0.250
Entering Leg	0				1				0				1	
Exiting Leg	1				0				0				1	
Total	1				1				0				2	

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Bicycles (on Roadway and Crosswalks)

	Vernon Street							Vernon Street							Dolbeare School Southern Driveway							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	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	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	
Grand Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1							0							0							1

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street							Vernon Street							Dolbeare School Southern Driveway							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total		Thru	Left	U-Turn	CW-WB	CW-EB	Total		Right	Left	U-Turn	CW-NB	CW-SB	Total		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	
Exiting Leg	1							0							0							1
Total	1							1							0							2

PDI File #: **217901 I**
 Location: **N: Vernon Street S: Vernon Street**
 Location: **W: Dolbeare School Southern Driveway**
 City, State: **Wakefield, MA**
 Client: **GPI/ S. Theriault**
 Site Code: **NEX-2020177**
 Count Date: **Wednesday, May 12, 2021**
 Start Time: **2:30 PM**
 End Time: **3:30 PM**



Pedestrians

	Vernon Street						Vernon Street						Dolbeare School Southern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
2:45 PM	0	0	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	1	1	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	5
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	80		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	80	100	
Exiting Leg Total	0						0						5						5

Peak Hour Analysis from 02:30 PM to 03:30 PM begins at:

2:30 PM	Vernon Street						Vernon Street						Dolbeare School Southern Driveway						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	5
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	80.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.333	0.313	0.313
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	5
Exiting Leg	0						0						5						5
Total	0						0						10						10

TRAFFIC-VOLUME ADJUSTMENT DATA

Traffic Volume Adjustments Summary

	<u>Calculated</u>	<u>Used</u>
COVID-19 Adjustment	3.9%	4%
Seasonal Adjustment	-3.8%	0%
Historical Growth	0.8%	1%

NOTES

Traffic counts were conducted on Wednesday, May 12, 2021.

COVID-19 Adjustment

Station 4423 - Route 128, north of Route 129 - Wakefield

		Daily Traffic Volumes (vpd)					
		May 2019		May 2021			
Tues	5/7/2019	147,863	5/4/2021	141,942			
Wed	5/8/2019	158,475	5/5/2021	141,838			
Thurs	5/9/2019	157,853	5/6/2021	155,944			
Tues	5/14/2019	148,916	5/11/2021	151,050			
Wed	5/15/2019	161,345	5/12/2021	155,321	3.9%		
Thurs	5/16/2019	161,411	5/13/2021	158,099			
Tues	5/21/2019	152,751	5/18/2021	153,304			
Wed	5/22/2019	157,796	5/19/2021	151,637			
Thurs	5/23/2019	162,825	5/20/2021	156,362			
		156,582	151,722	3.2%	Average		

Date of TMCs

ADT by Day of Week by Month for 1/1/2019 - 12/31/2019

Criteria: From 1/1/1900 To 12/31/2049 12:00:00 AM

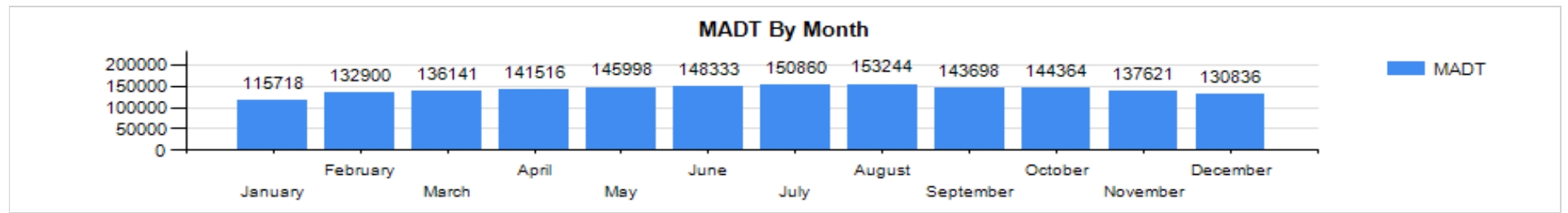
District
Community Wakefield
County Middlesex
Factor Group U1-Essex

Location ID 5099
Direction 2-WAY
RoadBed ML

Located On YANKEE DIVISION HIGHWAY
AADT 140822
Collection Type HPMS
Functional Class (1) Interstate

	Average Daily Number of Vehicles							Avg. Day Day (Mon-Sun)	Avg. Day as % of Year Avg.	Avg. Weekday (Mon-Thu)	Avg. Day as % of Avg. Weekday (Mon-Thu)	Avg. Weekday (Mon-Fri)	Avg. Day as % of Avg. Weekday (Mon-Fri)
	Sun	Mon	Tue	Wed	Thu	Fri	Sat						
JAN			84,823		137,038	149,793	91,220	115,718	82.60%	110,931	104.32%	123,885	93.41%
FEB	108,014	126,452	133,928	142,013	138,146	149,128	132,626	132,900	94.86%	135,135	98.35%	137,933	96.35%
MAR	114,754	120,876	144,267	146,390	148,244	151,402	127,057	136,141	97.17%	139,944	97.28%	142,236	95.72%
APR	123,432	142,429	141,925	146,400	149,331	160,284	126,817	141,516	101.01%	145,021	97.58%	148,074	95.57%
MAY	126,596	137,805	144,968	153,233	154,885	157,713	146,789	145,998	104.21%	147,723	98.83%	149,721	97.51%
JUN	118,029	151,344	147,551	155,410	160,288	161,890	143,825	148,333	105.87%	153,648	96.54%	155,297	95.52%
JUL	131,143	150,494	152,376	153,013	158,760	159,622	150,621	150,860	107.68%	153,661	98.18%	154,853	97.42%
AUG	134,556	154,078	153,653	156,284	161,569	162,553	150,022	153,244	109.38%	156,396	97.98%	157,627	97.22%
SEP	130,315	146,614	149,634	143,188	142,342	149,107	144,694	143,698	102.57%	145,445	98.80%	146,177	98.30%
OCT	124,972	143,216	145,560	146,425	147,167	155,043	148,171	144,364	103.04%	145,592	99.16%	147,482	97.89%
NOV	109,137	140,502	143,690	144,900	137,894	149,817	137,412	137,621	98.23%	141,747	97.09%	143,361	96.00%
DEC	114,013	135,227	138,424	112,237	136,763	148,637	130,558	130,836	93.39%	130,663	100.13%	134,258	97.45%
Year	121,360	140,822	140,067	145,408	147,702	154,582	135,818	140,102		142,159	98.55%	145,075	96.57%

-3.8%



NOTE: VALUES ARE ROUNDED; TOTALS AND PERCENTS MAY NOT ADD UP.

Traffic Growth Rate^a

Location	Year										Annual Rate
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
STATION 4848 - READING - ROUTE 28, NORTH OF MINOT STREET			14,788			13,378			15,214		0.5%
STATION 4137 - WAKEFIELD - ROUTE 128, NORTH OF NORTH AVENUE	133,858	114,891	120,613	153,445		129,714	134,790	140,043	140,579	137,985	0.9%
STATION 4423 - WAKEFIELD - ROUTE 128, NORTH OF ROUTE 129	135,116	132,541	134,997	134,946		141,707	143,419	147,386	144,627	143,036	0.7%
STATION 4121 - WAKEFIELD - ROUTE 128, NORTH OF MAIN STREET	130,226	122,700	135,088	137,350		134,579	138,422	140,727	139,400	142,046	1.0%

^a Source: Based upon historical data; MassDOT Transportation Data Management System.

Average Annual Growth Rate **0.8%**

MASSDOT CRASH RATE WORKSHEETS

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wakefield COUNT DATE : May-21

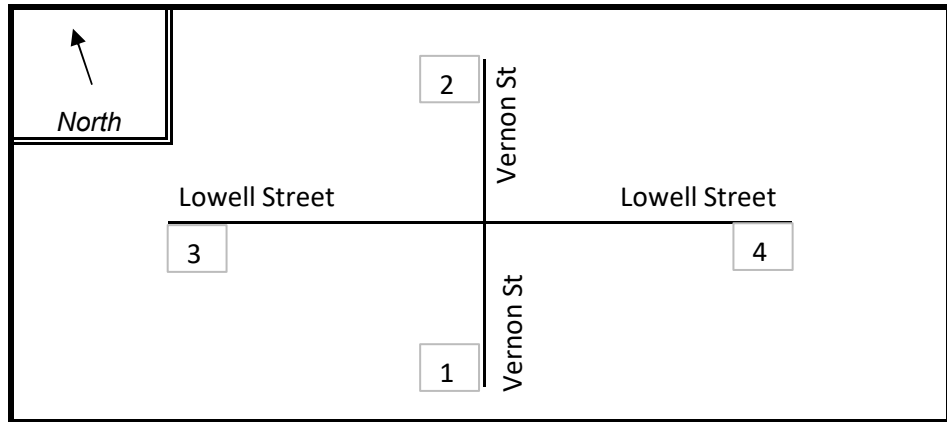
DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Lowell Street

MINOR STREET(S) : Vernon 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 (AM/PM) :	344	297	317	283		1,241

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

0.20

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

Comments : Based on weekday PM peak hour volumes

Project Title & Date: 356 Lowell Street - Wakefield, MA



SEGMENT CRASH RATE WORKSHEET

CITY/TOWN : Wakefield COUNTY DATE : May-21

DISTRICT : 4

~ SEGMENT DATA ~

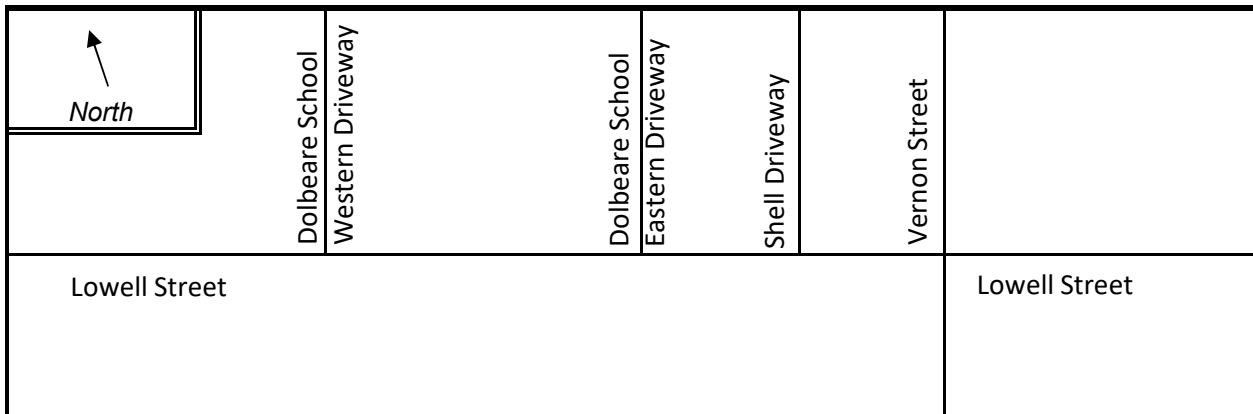
ROADWAY NAME: Lowell Street

START POINT: Dolbeare School Western Driveway

END POINT: Vernon Street

FUNCTIONAL CLASSIFICATION OF ROADWAY: Urban Minor Arterial

ROADWAY DIAGRAM (LABEL ROADWAY AND CROSS STREETS)



AVERAGE DAILY TRAFFIC

SEGMENT LENGTH IN MILES (L): **0.15**

AVERAGE DAILY TRAFFIC VOLUME (V): 6,411

TOTAL # OF CRASHES: 6 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR (A): **1.20**

CRASH RATE CALCULATION : **3.42** RATE = $\frac{(A * 1,000,000)}{(L * V * 365)}$

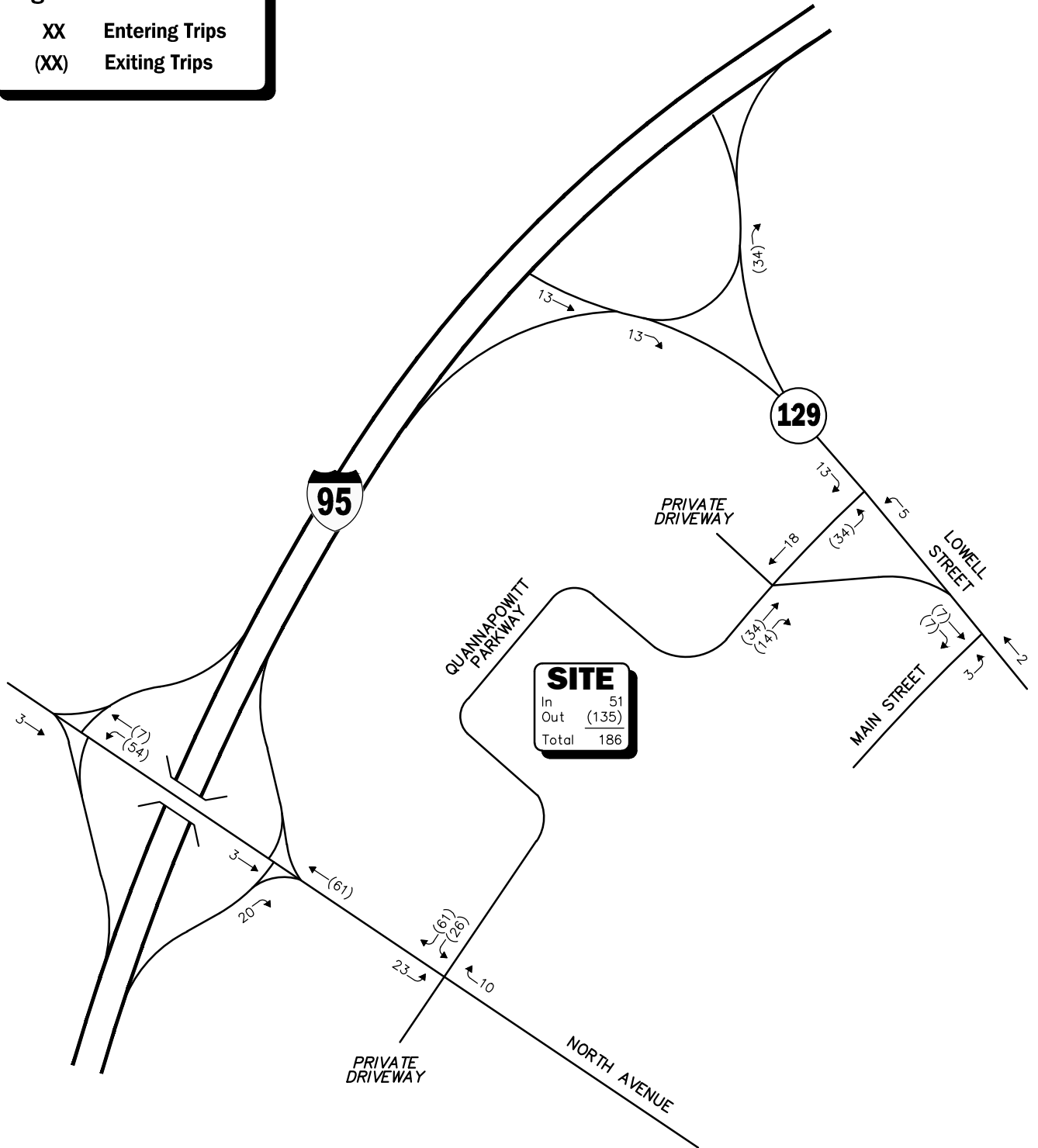
Comments : Average Daily Traffic Volume based on weekday PM peak hour using K-Factor of 0.09

Project Title & Date: 356 Lowell Street - Wakefield, MA

BACKGROUND DEVELOPMENT DATA

Legend:

- XX Entering Trips
- (XX) Exiting Trips



SITE	
In	51
Out	(135)
Total	186

 Not To Scale

Figure 8

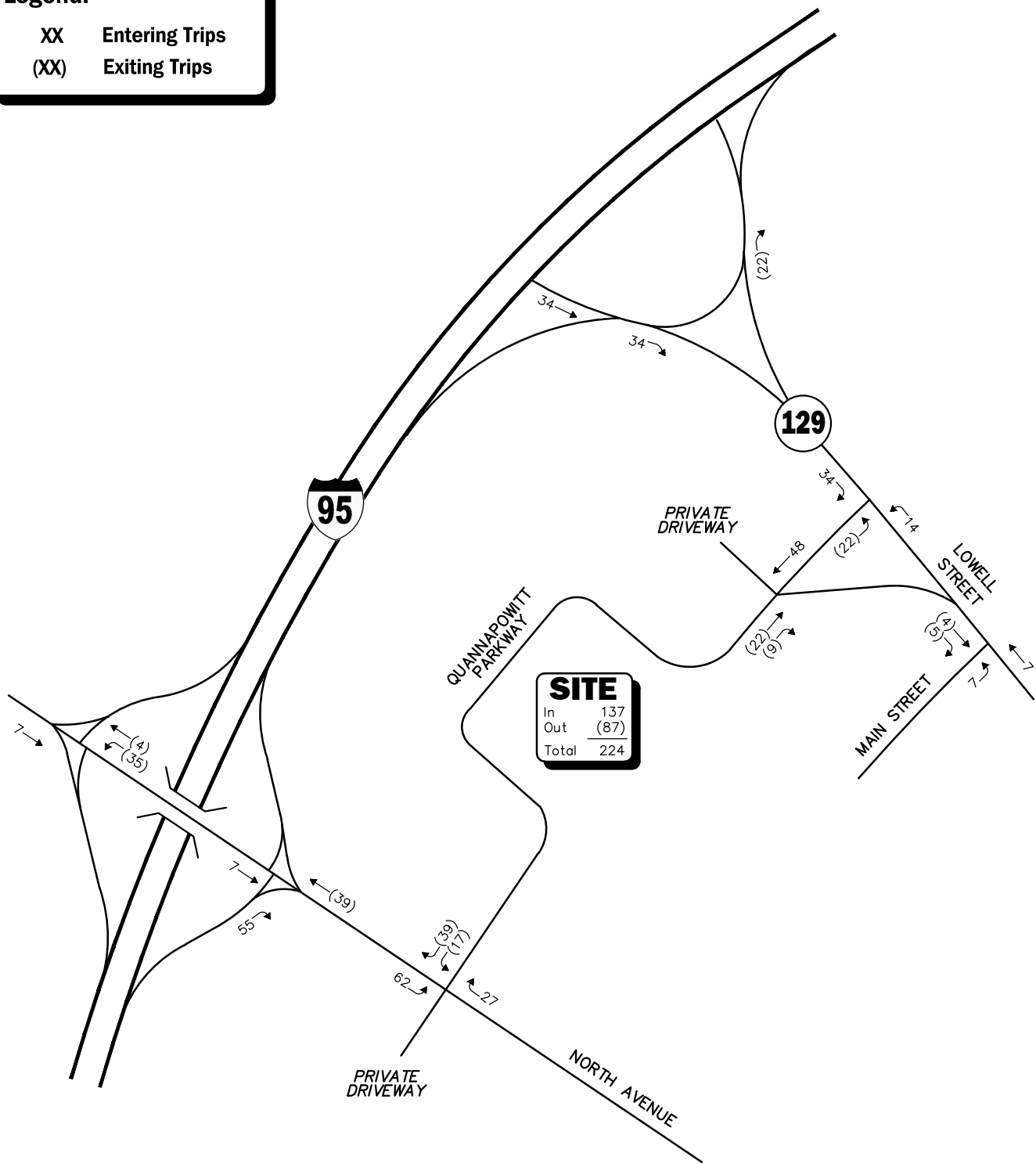


**Project Generated
Weekday Morning
Peak Hour Traffic Volumes**

R:\8542\2021\8542NNT1.dwg, 2/24/2021 5:36:31 PM

Legend:

- XX Entering Trips
- (XX) Exiting Trips



Not To Scale

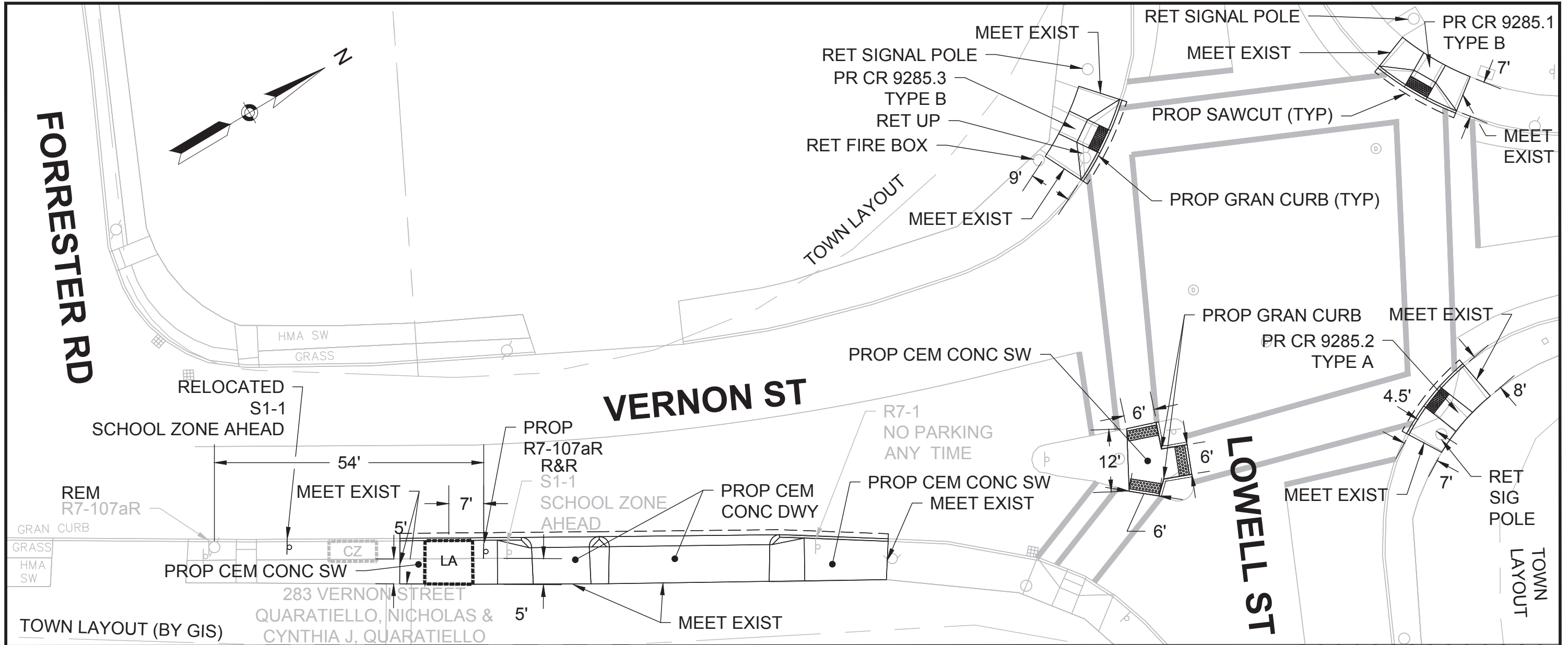


Figure 9

**Project Generated
Weekday Evening
Peak Hour Traffic Volumes**

MBTA IMPROVEMENT PLANS

I:\eng\1872242 MBTA Bus System GEC TO2\High Priority Stops\HD\DWG\PLT\1872242 - PLOT - G - WAKEFIELD - 2.dwg, Plotted: Jan 15, 2021 - 8:58pm



INSET 2 ON WAK-G-6 STOP ID NO. 9285 MIDBLOCK

TOWN LAYOUT BASED ON GIS

NOTES:
 1. BASEMAP INFORMATION IS APPROXIMATE AND CERTAIN FEATURES ARE EXCLUDED FOR DRAWING CLARITY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS.



T MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
 BUS STOP ACCESSIBILITY AND SAFETY IMPROVEMENTS
 MBTA CONTRACT NO.

VERNON ST@ LOWELL ST
 WAKEFIELD - STOP ID NO. 9285
 343 LOWELL ST OPP DOLBEARE SCHOOL
 WAKEFIELD - STOP ID PAIR NO. 9266
 GENERAL IMPROVEMENT PLAN

MASS. BAY TRANSPORTATION AUTHORITY
 APPROVED BY

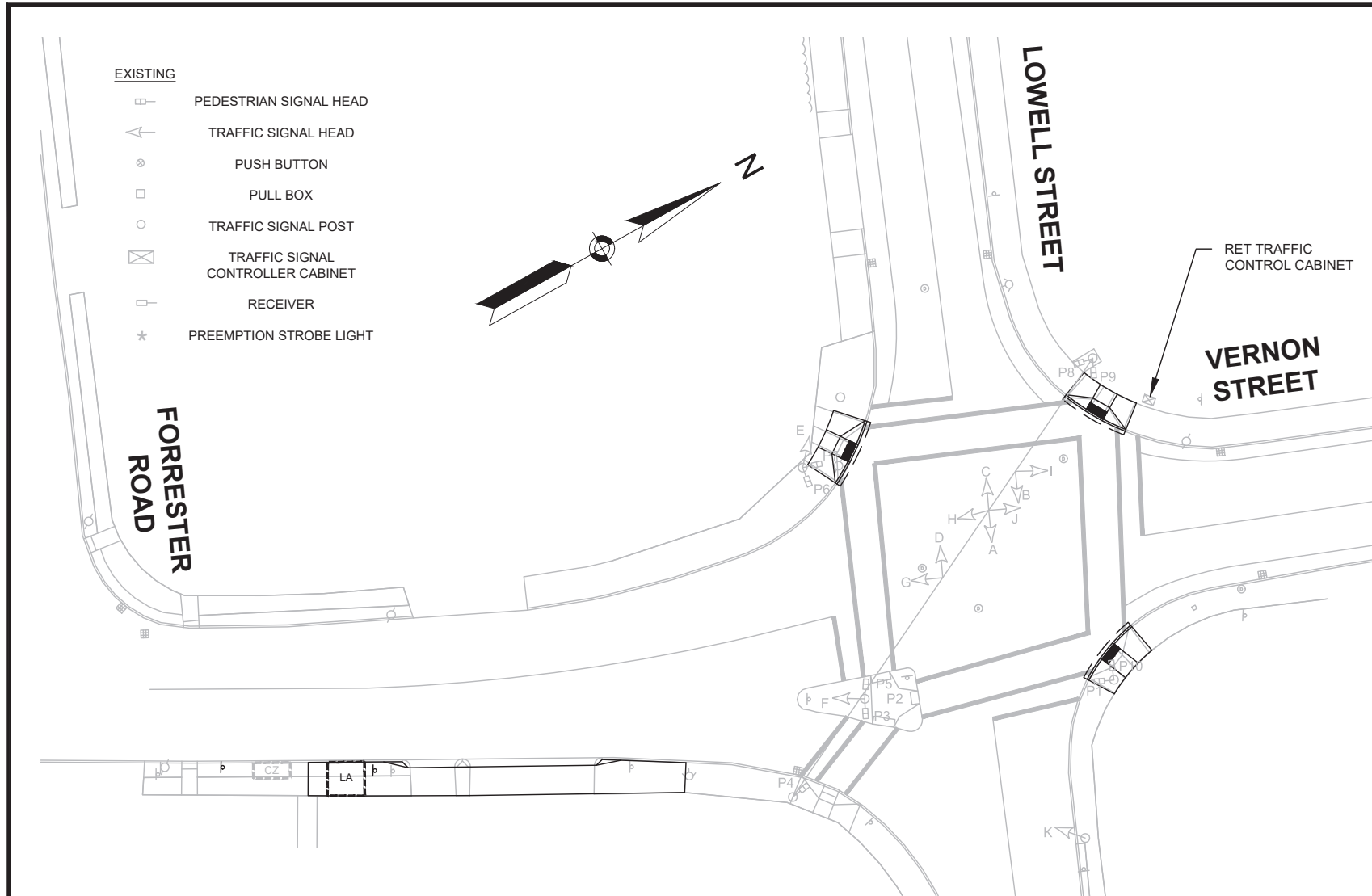
DRAFT
 NOT FOR CONSTRUCTION



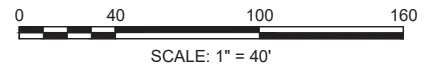
ISSUE	DATE	DESCRIPTION	BY	CHKD	APP

SCALE: AS NOTED	DESIGN BY: NRW	DRAWN BY: NRW	CHECK BY: AMS	PLAN NO.	PROJECT MANAGER
DATE: 1/15/2021				SHEET WAK-G-6B	ISSUE (X)

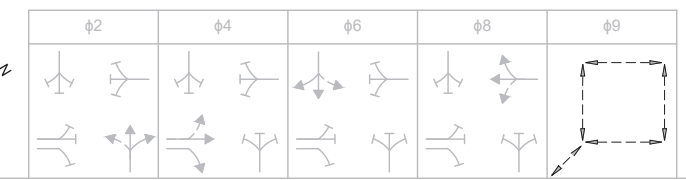
\\beast\eng\eng\18722-42.mba bus system.gis\18722-42 - PLOT - T - WAKEFIELD.dwg - PLOT - Jan 15, 2021 - 6:05pm



- EXISTING**
- ☐ PEDESTRIAN SIGNAL HEAD
 - ☐ TRAFFIC SIGNAL HEAD
 - ⊙ PUSH BUTTON
 - ☐ PULL BOX
 - TRAFFIC SIGNAL POST
 - ☒ TRAFFIC SIGNAL CONTROLLER CABINET
 - ☐ RECEIVER
 - * PREEMPTION STROBE LIGHT



NOTE:
1. EXISTING FEATURES SHOWN ARE APPROXIMATE. CONTRACTOR RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS.

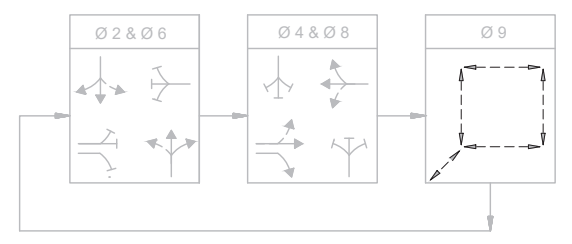


SEQUENCE AND TIMING FOR PRETIMED SIGNAL CONTROL (ISOLATED)

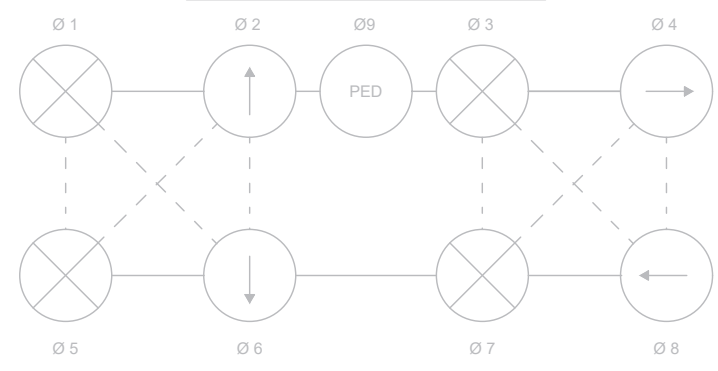
	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	FLASH OP
LOWELL STREET	WB	A,B	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
LOWELL STREET	EB	C,D,E	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FR
VERNON STREET	NB	F,G,H,K	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
VERNON STREET	SB	I,J	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	FY
PEDESTRIAN	ALL	P1-P10	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
*TIMING IN SECONDS																		
*MINIMUM GREEN (INITIAL)																		
*PASSAGE TIME (VEHICLE)																		
*MAXIMUM 1																		
*MAXIMUM 2																		
YELLOW CLEARANCE																		
RED CLEARANCE																		
WALK (W)																		
PEDESTRIAN CLEARANCE																		
*RECALL																		
*MEMORY																		

*NOTE: EXISTING VEHICULAR SIGNAL TIMINGS TO BE RETAINED

PREFERENTIAL PHASING SEQUENCE

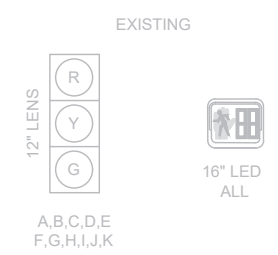


NEMA DUAL RING PHASING



NEMA DUAL RING PHASING NOTES:
1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

SIGNAL IDENTIFICATION



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BUS STOP ACCESSIBILITY AND SAFETY IMPROVEMENTS
MBTA CONTRACT NO.

VERNON ST @ LOWELL ST
WAKEFIELD - STOP ID NO. 9285
343 LOWELL ST OPP DOLBEARE SCHOOL
WAKEFIELD - STOP ID PAIR NO. 9266

GENERAL IMPROVEMENT PLAN

MASS. BAY TRANSPORTATION AUTHORITY
APPROVED BY

ISSUE	DATE	DESCRIPTION	BY	CHKD	APP

DRAFT
NOT FOR CONSTRUCTION



SCALE: AS NOTED	DESIGN BY: SMG	DRAWN BY: SMG	CHECK BY: PV	PLAN NO.	ISSUE
DATE: 01/15/2021				SHEET WAK-T-6	X

TRIP-GENERATION CALCULATIONS

Trip Generation Estimates

	PROPOSED			EXISTING	ADDITIONAL								
	<u>Total External Trips</u>			<u>Total Trips</u>	<u>Total Trips</u>			<u>Pass-By Trips</u>			<u>Total New Trips</u>		
	Gas/C-Store	Coffee	Total	Gas/C-Store	Gas/C-Store	Coffee	Total	Gas/C-Store	Coffee	Total	Gas/C-Store	Coffee	Total
Weekday Daily													
In	1,413	138	1,551	--	--	--	--	--	--	--	--	--	--
Out	<u>1,437</u>	<u>114</u>	<u>1,551</u>	--	--	--	--	--	--	--	--	--	--
Total	2,850	252	3,102	--	--	--	--	--	--	--	--	--	--
Weekday AM													
In	133	24	157	67	66	24	90	54	15	69	12	9	21
Out	<u>122</u>	<u>34</u>	<u>156</u>	<u>46</u>	<u>76</u>	<u>34</u>	<u>110</u>	<u>54</u>	<u>15</u>	<u>69</u>	<u>22</u>	<u>19</u>	<u>41</u>
Total	255	58	313	113	142	58	200	108	30	138	34	28	62
Weekday PM													
In	118	10	128	31	87	10	97	66	5	71	21	5	26
Out	<u>121</u>	<u>8</u>	<u>129</u>	<u>31</u>	<u>90</u>	<u>8</u>	<u>98</u>	<u>66</u>	<u>5</u>	<u>71</u>	<u>24</u>	<u>3</u>	<u>27</u>
Total	239	18	257	62	177	18	195	132	10	142	45	8	53

	Pass-By Rates	
	LUC 853	LUC 934
AM	76%	50%
PM	75%	55%

TOTAL SITE-GENERATED TRIPS PER USE

		<u>Retail</u>	<u>Restaurant</u>	<u>Entertainment</u>	<u>Residential</u>	<u>Hotel</u>	<u>Office</u>	<u>Total</u>			
ITE Land Use Codes:		945	936								
Size:		4,121	879	100,000	600	350	230,000	5,000	LUC 945	LUC 945	
Measurement:		SF	SF	SEATS	UNITS	ROOMS	SF		12	4,121	
									VFPS	SF	AVERAGE
Weekday Daily	Entering	1,493	194	0	0	0	0	1,687	1,543	1,443	1,493
	Exiting	<u>1,493</u>	<u>194</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,687</u>	<u>1,543</u>	<u>1,443</u>	<u>1,493</u>
	Total	2986	388	0	0	0	0	3,374	3,086	2,886	2,986
Weekday AM Peak Hour	Entering	139	42	0	0	0	0	181	162	116	139
	Exiting	<u>140</u>	<u>40</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>180</u>	<u>162</u>	<u>117</u>	<u>140</u>
	Total	279	82	0	0	0	0	361	324	233	279
Weekday PM Peak Hour	Entering	124	14	0	0	0	0	138	136	112	124
	Exiting	<u>125</u>	<u>14</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>139</u>	<u>137</u>	<u>113</u>	<u>125</u>
	Total	249	28	0	0	0	0	277	273	225	249
Saturday Daily	Entering	1,596	317	0	0	0	0	1,913	1,750	1,442	1,596
	Exiting	<u>1,596</u>	<u>317</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,913</u>	<u>1,750</u>	<u>1,442</u>	<u>1,596</u>
	Total	3192	634	0	0	0	0	3,826	3,500	2,884	3,192
Saturday Midday Peak Hour	Entering	129	24	0	0	0	0	153	125	132	129
	Exiting	<u>126</u>	<u>26</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>152</u>	<u>120</u>	<u>132</u>	<u>126</u>
	Total	255	50	0	0	0	0	305	245	264	255

Name of Development: 356 Lowell Street - Wakefield, MA
 Date: 2/10/2022
 Analyst: Susannah E. Theriault, P.E.

Note: Fill in cells highlighted in blue only. All others calculated automatically

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 945 - Convenience Store/Gas Station

Subcategory: GFA (4-5.5k)

General Urban/Suburban

Average Vehicle Trips Ends vs: Vehicle Fueling Positions

Independent Variable (X): 12

AVERAGE WEEKDAY DAILY

$$T = 257.13 * (X)$$

$$T = 257.13 * 12$$

$$T = 3085.56$$

$$T = 3,086 \text{ vehicle trips}$$

with 50% (1,543 vpd) entering and 50% (1,543 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 27.04 * (X)$$

$$T = 27.04 * 12$$

$$T = 324.48$$

$$T = 324 \text{ vehicle trips}$$

with 50% (162 vph) entering and 50% (162 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 22.76 * (X)$$

$$T = 22.76 * 12$$

$$T = 273.12$$

$$T = 273 \text{ vehicle trips}$$

with 50% (136 vph) entering and 50% (137 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 945 - Convenience Store/Gas Station

Subcategory: VFP (9-15vfps)

General Urban/Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Floor Area

Independent Variable (X): 4.121

AVERAGE WEEKDAY DAILY

$$T = 700.43 * (X)$$

$$T = 700.43 * 4.121$$

$$T = 2886.47$$

$$T = 2,886 \text{ vehicle trips}$$

with 50% (1,443 vpd) entering and 50% (1,443 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 56.52 * (X)$$

$$T = 56.52 * 4.121$$

$$T = 232.92$$

$$T = 233 \text{ vehicle trips}$$

with 50% (116 vph) entering and 50% (117 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 54.52 * (X)$$

$$T = 54.52 * 4.121$$

$$T = 224.68$$

$$T = 225 \text{ vehicle trips}$$

with 50% (112 vph) entering and 50% (113 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 936 - Coffee Donut Shop without Drive-Through Window

General Urban/Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area

Independent Variable (X): 0.879

AVERAGE WEEKDAY DAILY

$$\frac{\text{ITE LUC 937 Weekday Daily Trip Rate}}{\text{ITE LUC 937 Weekday Evening Trip Rate}} = \frac{\text{ITE LUC 936 Weekday Daily Trip Rate}}{\text{ITE LUC 936 Weekday Evening Trip Rate}}$$

$$\frac{533.57}{38.99} = \frac{(Y)}{32.29} \quad Y = 441.88$$

$$T = Y * 0.879$$

$$T = 388.41$$

$$T = 388 \text{ vehicle trips}$$

with 50% (194 vph) entering and 50% (194 vph) exiting.

(same distribution split as ITE LUC 937 during the weekday daily period)

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 93.08 * (X)$$

$$T = 93.08 * 0.879$$

$$T = 81.82$$

$$T = 82 \text{ vehicle trips}$$

with 51% (42 vph) entering and 49% (40 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 32.29 * (X)$$

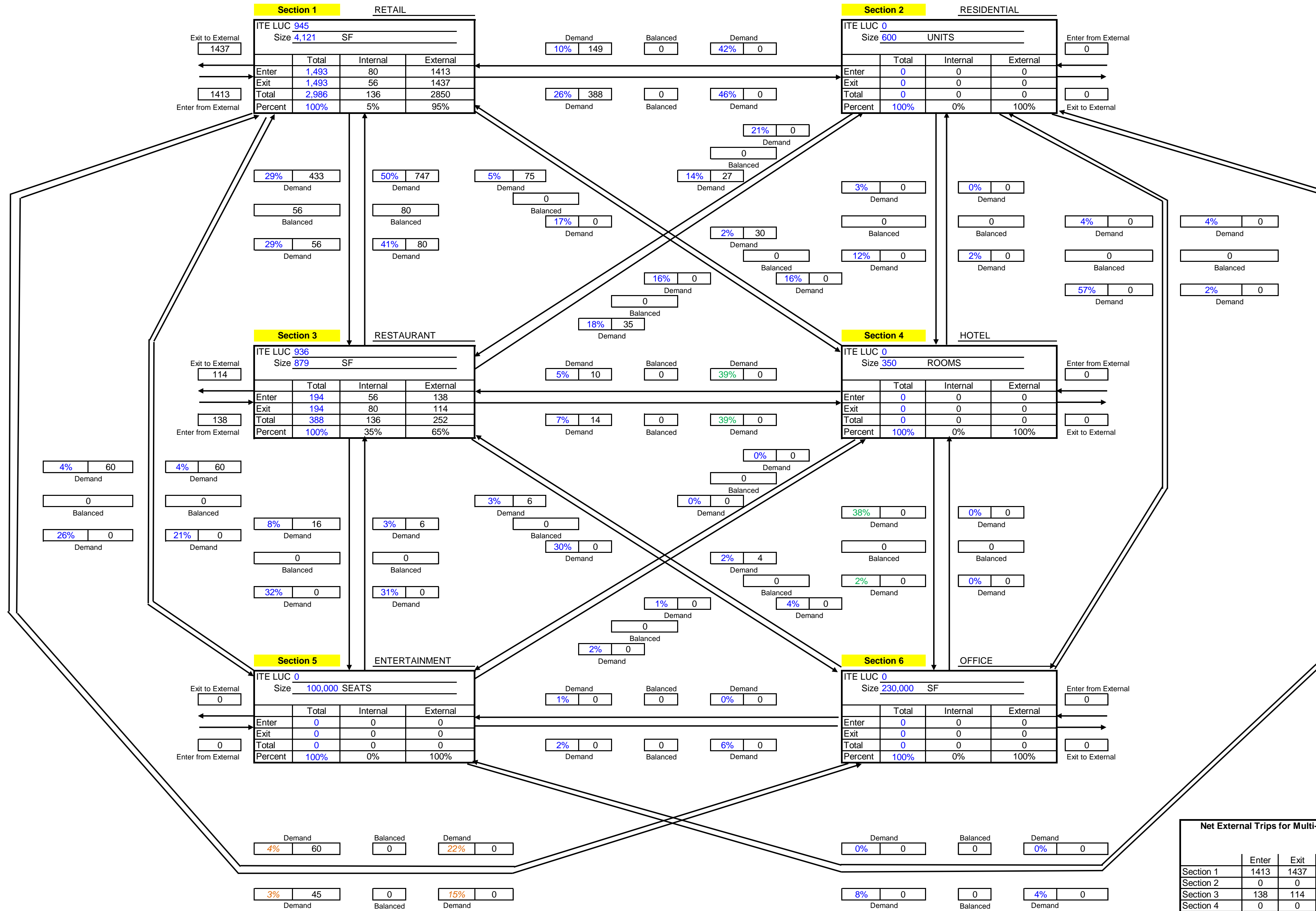
$$T = 32.29 * 0.879$$

$$T = 28.38$$

$$T = 28 \text{ vehicle trips}$$

with 50% (14 vph) entering and 50% (14 vph) exiting.

**MULTI-USE DEVELOPMENT
 TRIP GENERATION
 AND INTERNAL CAPTURE SUMMARY**

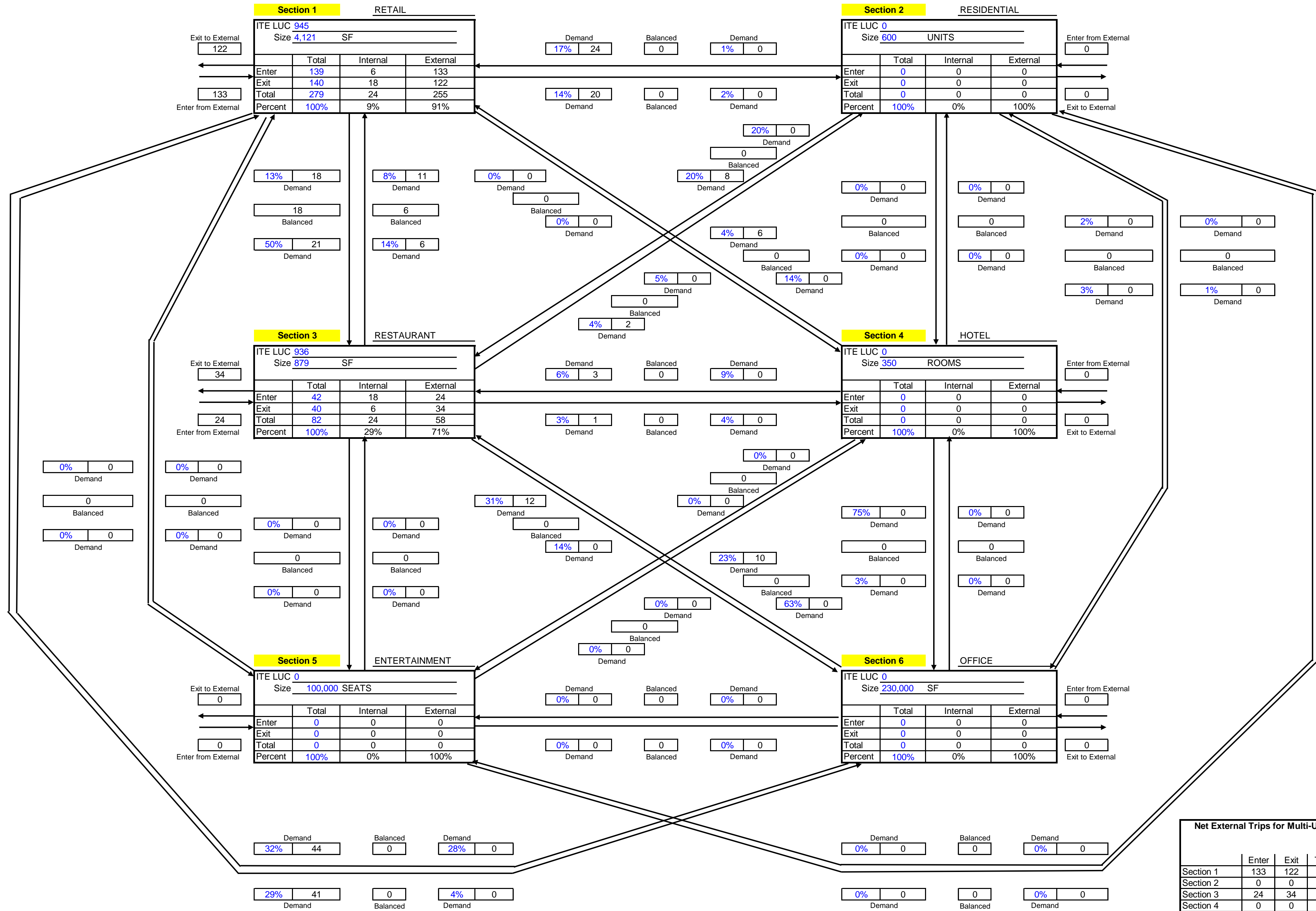


	Enter	Exit	Total	Single-Use Trip Gen Est.
Section 1	1413	1437	2850	2986
Section 2	0	0	0	0
Section 3	138	114	252	388
Section 4	0	0	0	0
Section 5	0	0	0	0
Section 6	0	0	0	0
TOTAL	1551	1551	3102	3374

Internal Capture
8%

Based on Weekday PM from ITE Trip Generation Handbook, 3rd Edition, August 2014.
 Based on an average of Weekday AM or PM from ITE Trip Generation Handbook, 3rd Edition, August 2014.

**MULTI-USE DEVELOPMENT
 TRIP GENERATION
 AND INTERNAL CAPTURE SUMMARY**

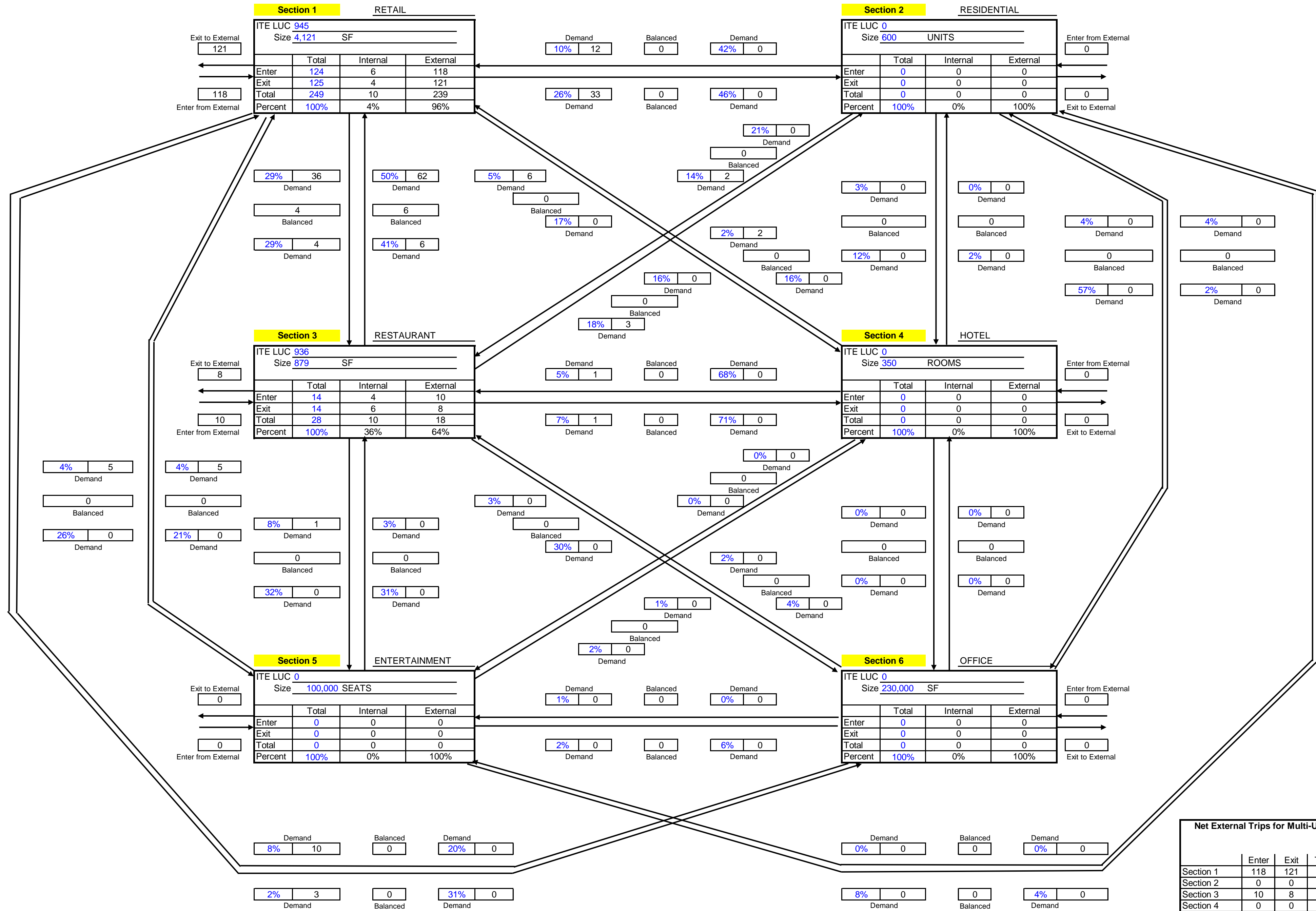


	Enter	Exit	Total	Single-Use Trip Gen Est.
Section 1	133	122	255	279
Section 2	0	0	0	0
Section 3	24	34	58	82
Section 4	0	0	0	0
Section 5	0	0	0	0
Section 6	0	0	0	0
TOTAL	157	156	313	361

Internal Capture **13%**

Based on ITE Trip Generation Handbook, 3rd Edition, August 2014.

**MULTI-USE DEVELOPMENT
 TRIP GENERATION
 AND INTERNAL CAPTURE SUMMARY**



	Enter	Exit	Total	Single-Use Trip Gen Est.
Section 1	118	121	239	249
Section 2	0	0	0	0
Section 3	10	8	18	28
Section 4	0	0	0	0
Section 5	0	0	0	0
Section 6	0	0	0	0
TOTAL	128	129	257	277

Internal Capture **7%**

Based on ITE Trip Generation Handbook, 3rd Edition, August 2014.

Vehicle Pass-By Rates by Land Use

Source: ITE Trip Generation Manual, 11th Edition

Land Use Code	945									
Land Use	Convenience Store/Gas Station									
Setting	General Urban/Suburban									
Time Period	Weekday AM Peak Period									
# Data Sites	16 Sites with between 2 and 8 VFP					28 Sites with between 9 and 20 VFP				
Average Pass-By Rate	60% for Sites with between 2 and 8 VFP					76% for Sites with between 9 and 20 VFP				
Pass-By Characteristics for Individual Sites										
GFA (000)	VFP	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
						Primary (%)	Diverted (%)	Total (%)		
2	8	Maryland	1992	46	87	13	0	13	2235	25
2.1	6	Maryland	1992	26	58	23	19	42	2080	25
2.1	6	Maryland	1992	26	58	23	19	42	2080	25
2.2	8	Maryland	1992	31	47	34	19	53	1785	25
2.2	< 8	Indiana	1993	79	56	6	38	44	635	2
2.2	8	Maryland	1992	35	78	9	13	22	7080	25
2.3	6	Maryland	1992	37	32	41	27	68	2080	25
2.3	< 8	Kentucky	1993	58	64	5	31	36	1255	2
2.3	6	Maryland	1992	37	32	41	27	68	2080	25
2.4	< 8	Kentucky	1993	—	48	17	35	52	1210	2
2.6	< 8	Kentucky	1993	—	72	15	13	28	940	2
2.8	< 8	Kentucky	1993	—	54	11	35	46	1240	2
3	< 8	Indiana	1993	62	74	10	16	26	790	2
3.6	< 8	Kentucky	1993	49	67	4	29	33	1985	2
3.7	< 8	Kentucky	1993	49	66	16	18	34	990	2
4.694	12	Maryland	2000	—	72	—	—	28	2440	30
4.694	12	Maryland	2000	—	78	—	—	22	1561	30
4.694	12	Maryland	2000	—	79	—	—	21	2764	30
4.848	12	Virginia	2000	—	55	—	—	45	1398	30
5.06	12	Pennsylvania	2000	—	84	—	—	16	3219	30
5.242	12	Virginia	2000	—	74	—	—	26	1160	30
5.242	12	Virginia	2000	—	71	—	—	29	548	30
5.488	12	Delaware	2000	—	80	—	—	20	—	30
5.5	12	Pennsylvania	2000	—	85	—	—	15	2975	30
4.2	< 8	Kentucky	1993	47	62	19	19	38	1705	2
4.694	16	Maryland	2000	—	90	—	—	10	2278	30
4.694	16	Delaware	2000	—	74	—	—	26	2185	30
4.694	16	Delaware	2000	—	58	—	—	42	962	30
4.694	16	Delaware	2000	—	84	—	—	16	2956	30
4.694	16	New Jersey	2000	—	79	—	—	21	1859	30
4.694	20	Delaware	2000	—	84	—	—	16	3864	30
4.848	16	Virginia	2000	—	68	—	—	32	2106	30
4.848	16	Virginia	2000	—	85	—	—	15	2676	30
4.848	16	Virginia	2000	—	75	—	—	25	3244	30
4.848	16	Virginia	2000	—	71	—	—	29	1663	30
4.993	16	Pennsylvania	2000	—	75	—	—	25	1991	30
5.094	16	New Jersey	2000	—	86	—	—	14	1260	30
5.5	16	Pennsylvania	2000	—	82	—	—	18	1570	30
5.543	16	Pennsylvania	2000	—	84	—	—	16	1933	30
5.565	16	Pennsylvania	2000	—	77	—	—	23	2262	30
5.565	16	Pennsylvania	2000	—	68	—	—	32	2854	30
5.565	16	New Jersey	2000	—	58	—	—	42	1253	30
5.565	16	New Jersey	2000	—	79	—	—	21	1928	30
5.565	16	New Jersey	2000	---	84	---	---	16	1953	30

Vehicle Pass-By Rates by Land Use

Source: ITE Trip Generation Manual, 11th Edition

Land Use Code	945									
Land Use	Convenience Store/Gas Station									
Setting	General Urban/Suburban									
Time Period	Weekday PM Peak Period									
# Data Sites	12 Sites with between 2 and 8 VFP					28 Sites with between 9 and 20 VFP				
Average Pass-By Rate	56% for Sites with between 2 and 8 VFP					75% for Sites with between 9 and 20 VFP				
Pass-By Characteristics for Individual Sites										
GFA (000)	VFP	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
						Primary (%)	Diverted (%)	Total (%)		
2.1	8	Maryland	1992	31	52	13	35	48	1785	25
2.1	6	Maryland	1992	30	53	20	27	47	1060	25
2.2	< 8	Indiana	1993	115	48	16	36	52	820	2
2.3	< 8	Kentucky	1993	67	57	16	27	43	1954	2
2.3	6	Maryland	1992	55	40	11	49	60	2760	25
2.4	< 8	Kentucky	1993	—	58	13	29	42	2655	2
2.6	< 8	Kentucky	1993	68	67	15	18	33	950	2
2.8	< 8	Kentucky	1993	—	62	11	27	38	2875	2
3	< 8	Indiana	1993	80	65	15	20	35	1165	2
3.6	< 8	Kentucky	1993	60	56	17	27	44	2505	2
3.7	< 8	Kentucky	1993	70	61	16	23	39	2175	2
4.2	< 8	Kentucky	1993	61	58	26	16	42	2300	2
4.694	12	Maryland	2000	—	78	—	—	22	3549	30
4.694	12	Maryland	2000	—	67	—	—	33	2272	30
4.694	12	Maryland	2000	—	66	—	—	34	3514	30
4.848	12	Virginia	2000	—	71	—	—	29	2350	30
5.06	12	Pennsylvania	2000	—	91	—	—	9	4181	30
5.242	12	Virginia	2000	—	70	—	—	30	2445	30
5.242	12	Virginia	2000	—	56	—	—	44	950	30
5.488	12	Delaware	2000	—	73	—	—	27	—	30
5.5	12	Pennsylvania	2000	—	84	—	—	16	4025	30
4.694	16	Maryland	2000	—	89	—	—	11	2755	30
4.694	16	Delaware	2000	—	73	—	—	27	1858	30
4.694	16	Delaware	2000	—	59	—	—	41	1344	30
4.694	16	Delaware	2000	—	72	—	—	28	3434	30
4.694	16	New Jersey	2000	—	81	—	—	19	1734	30
4.694	20	Delaware	2000	—	76	—	—	24	1616	30
4.848	16	Virginia	2000	—	67	—	—	33	2.954	30
4.848	16	Virginia	2000	—	78	—	—	22	3086	30
4.848	16	Virginia	2000	—	83	—	—	17	4143	30
4.848	16	Virginia	2000	—	73	—	—	27	2534	30
4.993	16	Pennsylvania	2000	—	72	—	—	28	2917	30
5.094	16	New Jersey	2000	—	86	—	—	14	1730	30
5.5	16	Pennsylvania	2000	—	90	—	—	10	2616	30
5.543	16	Pennsylvania	2000	—	87	—	—	13	2363	30
5.565	16	Pennsylvania	2000	—	81	—	—	19	2770	30
5.565	16	Pennsylvania	2000	—	76	—	—	24	3362	30
5.565	16	New Jersey	2000	—	61	—	—	39	1713	30
5.565	16	New Jersey	2000	—	86	—	—	14	1721	30
5.565	16	New Jersey	2000	---	81	---	---	19	2227	30

CAPACITY ANALYSIS METHODOLOGY

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).⁸ The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

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

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table A-1 summarizes the relationship between level of service and average control delay.

⁸ *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	Unsignalized Intersection Criteria Average Control Delay (Seconds per Vehicle)	Signalized Intersection Criteria Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

Source *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.
 Pages 10-16, 20-6, and 17-2.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

CAPACITY AND QUEUE ANALYSIS WORKSHEETS

Lane Group	Ø9
<hr/>	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	30%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
<hr/>	
Intersection Summary	
<hr/>	

1: Vernon Street & Lowell Street
Queues

2021 Existing
Timing Plan: Weekday AM


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	370	436	321	65	392
v/c Ratio	0.85	0.96	0.89	0.14	1.14
Control Delay	47.8	65.9	56.4	22.7	122.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	65.9	56.4	22.7	122.5
Queue Length 50th (ft)	182	225	161	25	~244
Queue Length 95th (ft)	#240	#300	#239	47	#400
Internal Link Dist (ft)	92	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	436	452	362	462	344
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.96	0.89	0.14	1.14

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	40	198	47	46	218	63	71	176	50	74	231	40	
Future Volume (vph)	40	198	47	46	218	63	71	176	50	74	231	40	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5			4.5			4.5	4.5		4.5		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.98			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1764			1784			1743	1553		1769		
Flt Permitted		0.83			0.85			0.69	1.00		0.65		
Satd. Flow (perm)		1466			1520			1219	1553		1156		
Peak-hour factor, PHF	0.77	0.77	0.77	0.75	0.75	0.75	0.77	0.77	0.77	0.88	0.88	0.88	
Adj. Flow (vph)	52	257	61	61	291	84	92	229	65	84	262	45	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	370	0	0	436	0	0	321	65	0	392	0	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.30			0.30			0.30	0.30		0.30		
Clearance Time (s)		4.5			4.5			4.5	4.5		4.5		
Lane Grp Cap (vph)		436			452			362	462		344		
v/s Ratio Prot													
v/s Ratio Perm		0.25			c0.29			0.26	0.04		c0.34		
v/c Ratio		0.85			0.96			0.89	0.14		1.14		
Uniform Delay, d1		27.7			29.1			28.1	21.6		29.5		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		18.3			34.4			25.8	0.6		92.0		
Delay (s)		46.0			63.4			54.0	22.3		121.5		
Level of Service		D			E			D	C		F		
Approach Delay (s)		46.0			63.4			48.6			121.5		
Approach LOS		D			E			D			F		
Intersection Summary													
HCM 2000 Control Delay			70.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			84.0									Sum of lost time (s)	12.0
Intersection Capacity Utilization			67.0%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													










2: Lowell Street & Western Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	289	327	3	0	17
Future Volume (Veh/h)	13	289	327	3	0	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.72	0.72	0.47	0.47
Hourly flow rate (vph)	15	340	454	4	0	36
Pedestrians		147	145		147	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		14	14		14	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			324			
pX, platoon unblocked	0.87				0.87	0.87
vC, conflicting volume	605				1118	750
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	477				1063	643
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	88
cM capacity (veh/h)	824				159	309
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	355	458	36			
Volume Left	15	0	0			
Volume Right	0	4	36			
cSH	824	1700	309			
Volume to Capacity	0.02	0.27	0.12			
Queue Length 95th (ft)	1	0	10			
Control Delay (s)	0.6	0.0	18.2			
Lane LOS	A		C			
Approach Delay (s)	0.6	0.0	18.2			
Approach LOS			C			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			45.7%		ICU Level of Service	A
Analysis Period (min)			15			

















3: Lowell Street & Eastern Site Driveway HCM Unsignalized Intersection Capacity Analysis

2021 Existing
Timing Plan: Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	285	316	13	0	14
Future Volume (Veh/h)	4	285	316	13	0	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.72	0.72	0.35	0.35
Hourly flow rate (vph)	5	335	439	18	0	40
Pedestrians		91	91		91	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		9	9		9	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			172			
pX, platoon unblocked	0.81				0.81	0.81
vC, conflicting volume	548				975	630
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330				855	431
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	91
cM capacity (veh/h)	922				224	427
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	340	457	40			
Volume Left	5	0	0			
Volume Right	0	18	40			
cSH	922	1700	427			
Volume to Capacity	0.01	0.27	0.09			
Queue Length 95th (ft)	0	0	8			
Control Delay (s)	0.2	0.0	14.3			
Lane LOS	A		B			
Approach Delay (s)	0.2	0.0	14.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			37.9%		ICU Level of Service	A
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	2	2	0	8	11	264	3	3	340	21
Future Volume (Veh/h)	3	0	2	2	0	8	11	264	3	3	340	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.73	0.73	0.73	0.82	0.82	0.82
Hourly flow rate (vph)	5	0	3	2	0	10	15	362	4	4	415	26
Pedestrians		17			2			17			17	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			0			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								260				
pX, platoon unblocked	0.90	0.90		0.90	0.90	0.90				0.90		
vC, conflicting volume	874	851	462	852	862	383	458			368		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	803	777	462	778	789	256	458			239		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	99	99			100		
cM capacity (veh/h)	254	286	584	270	282	694	1096			1200		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	12	381	445								
Volume Left	5	2	15	4								
Volume Right	3	10	4	26								
cSH	322	550	1096	1200								
Volume to Capacity	0.02	0.02	0.01	0.00								
Queue Length 95th (ft)	2	2	1	0								
Control Delay (s)	16.5	11.7	0.5	0.1								
Lane LOS	C	B	A	A								
Approach Delay (s)	16.5	11.7	0.5	0.1								
Approach LOS	C	B										
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			35.6%		ICU Level of Service				A			
Analysis Period (min)			15									

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	4	0	0	0	1	272	6	2	341	1
Future Volume (Veh/h)	6	0	4	0	0	0	1	272	6	2	341	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.25	0.25	0.25	0.73	0.73	0.73	0.82	0.82	0.82
Hourly flow rate (vph)	12	0	8	0	0	0	1	373	8	2	416	1
Pedestrians		19						19			19	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		2						2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	838	822	454	826	819	396	436			381		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	741	724	454	728	720	235	436			218		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	100	100	100	100			100		
cM capacity (veh/h)	277	303	588	284	305	693	1114			1190		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	20	382	419									
Volume Left	12	1	2									
Volume Right	8	8	1									
cSH	352	1114	1190									
Volume to Capacity	0.06	0.00	0.00									
Queue Length 95th (ft)	5	0	0									
Control Delay (s)	15.9	0.0	0.1									
Lane LOS	C	A	A									
Approach Delay (s)	15.9	0.0	0.1									
Approach LOS	C											
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			34.1%		ICU Level of Service				A			
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

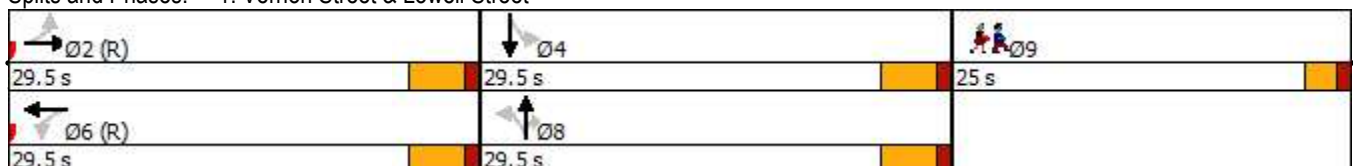
2021 Existing
Timing Plan: Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	198	60	60	154	69	54	238	52	52	193	52
Future Volume (vph)	59	198	60	60	154	69	54	238	52	52	193	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		172			1489			1047			152	
Travel Time (s)		5.9			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.93	0.93	0.93	0.86	0.86	0.86	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.5	11.5		11.5	11.5		11.5	11.5	11.5	11.5	11.5	
Total Split (s)	29.5	29.5		29.5	29.5		29.5	29.5	29.5	29.5	29.5	
Total Split (%)	35.1%	35.1%		35.1%	35.1%		35.1%	35.1%	35.1%	35.1%	35.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		4.5			4.5			4.5	4.5		4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 84
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
<hr/>	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	30%
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
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Intersection Summary	
<hr/>	

1: Vernon Street & Lowell Street
Queues

2021 Existing
Timing Plan: Weekday PM


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	353	305	340	60	313
v/c Ratio	0.79	0.72	0.76	0.13	0.82
Control Delay	41.9	37.5	39.3	22.7	46.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	37.5	39.3	22.7	46.6
Queue Length 50th (ft)	170	143	161	23	152
Queue Length 95th (ft)	#307	#257	#265	49	#292
Internal Link Dist (ft)	92	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	447	426	450	452	383
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.72	0.76	0.13	0.82

Intersection Summary

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










1: Vernon Street & Lowell Street HCM Signalized Intersection Capacity Analysis

2021 Existing
Timing Plan: Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	59	198	60	60	154	69	54	238	52	52	193	52	
Future Volume (vph)	59	198	60	60	154	69	54	238	52	52	193	52	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5			4.5			4.5	4.5		4.5		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	0.98		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.97			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1754			1770			1772	1520		1763		
Flt Permitted		0.85			0.80			0.85	1.00		0.73		
Satd. Flow (perm)		1505			1433			1516	1520		1290		
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.86	0.86	0.86	0.95	0.95	0.95	
Adj. Flow (vph)	66	220	67	65	166	74	63	277	60	55	203	55	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	353	0	0	305	0	0	340	60	0	313	0	
Confl. Bikes (#/hr)									1				
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.30			0.30			0.30	0.30		0.30		
Clearance Time (s)		4.5			4.5			4.5	4.5		4.5		
Lane Grp Cap (vph)		447			426			451	452		383		
v/s Ratio Prot													
v/s Ratio Perm		c0.23			0.21			0.22	0.04		c0.24		
v/c Ratio		0.79			0.72			0.75	0.13		0.82		
Uniform Delay, d1		27.1			26.3			26.7	21.6		27.4		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		13.3			9.9			11.1	0.6		17.4		
Delay (s)		40.3			36.2			37.8	22.2		44.7		
Level of Service		D			D			D	C		D		
Approach Delay (s)		40.3			36.2			35.5			44.7		
Approach LOS		D			D			D			D		
Intersection Summary													
HCM 2000 Control Delay			39.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.56										
Actuated Cycle Length (s)			84.0									Sum of lost time (s)	12.0
Intersection Capacity Utilization			65.3%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													










2: Lowell Street & Western Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	312	255	1	2	2
Future Volume (Veh/h)	3	312	255	1	2	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.83	0.83	0.33	0.33
Hourly flow rate (vph)	3	347	307	1	6	6
Pedestrians		15	15		15	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			324			
pX, platoon unblocked						
vC, conflicting volume	323				690	338
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	323				690	338
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1230				401	689
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	350	308	12			
Volume Left	3	0	6			
Volume Right	0	1	6			
cSH	1230	1700	507			
Volume to Capacity	0.00	0.18	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.1	0.0	12.3			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	12.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			32.7%		ICU Level of Service	A
Analysis Period (min)			15			

3: Lowell Street & Eastern Site Driveway HCM Unsignalized Intersection Capacity Analysis

2021 Existing
Timing Plan: Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	311	254	6	6	2
Future Volume (Veh/h)	3	311	254	6	6	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.83	0.83	0.50	0.50
Hourly flow rate (vph)	3	346	306	7	12	4
Pedestrians		10	13		13	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			172			
pX, platoon unblocked						
vC, conflicting volume	326				688	332
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	326				688	332
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1230				404	698
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	349	313	16			
Volume Left	3	0	12			
Volume Right	0	7	4			
cSH	1230	1700	452			
Volume to Capacity	0.00	0.18	0.04			
Queue Length 95th (ft)	0	0	3			
Control Delay (s)	0.1	0.0	13.3			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	13.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			31.6%		ICU Level of Service	A
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	4	4	0	3	4	360	2	1	283	11
Future Volume (Veh/h)	6	0	4	4	0	3	4	360	2	1	283	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.35	0.35	0.35	0.85	0.85	0.85	0.95	0.95	0.95
Hourly flow rate (vph)	12	0	8	11	0	9	5	424	2	1	298	12
Pedestrians		10			5			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								260				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	770	757	324	764	762	440	320			431		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651	636	324	644	641	267	320			256		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	97	100	99	100			100		
cM capacity (veh/h)	315	336	708	321	333	658	1239			1129		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	20	20	431	311								
Volume Left	12	11	5	1								
Volume Right	8	9	2	12								
cSH	405	417	1239	1129								
Volume to Capacity	0.05	0.05	0.00	0.00								
Queue Length 95th (ft)	4	4	0	0								
Control Delay (s)	14.3	14.1	0.1	0.0								
Lane LOS	B	B	A	A								
Approach Delay (s)	14.3	14.1	0.1	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			34.8%		ICU Level of Service					A		
Analysis Period (min)			15									

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2021 Existing
 Timing Plan: Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	7	0	0	0	2	364	0	0	290	1
Future Volume (Veh/h)	2	0	7	0	0	0	2	364	0	0	290	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.25	0.25	0.25	0.85	0.85	0.85	0.95	0.95	0.95
Hourly flow rate (vph)	3	0	9	0	0	0	2	428	0	0	305	1
Pedestrians		9						9			9	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	756	746	324	756	747	437	315			428		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	624	613	324	624	614	249	315			238		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	100			100		
cM capacity (veh/h)	332	345	710	331	345	670	1246			1139		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	12	430	306									
Volume Left	3	2	0									
Volume Right	9	0	1									
cSH	553	1246	1139									
Volume to Capacity	0.02	0.00	0.00									
Queue Length 95th (ft)	2	0	0									
Control Delay (s)	11.7	0.1	0.0									
Lane LOS	B	A										
Approach Delay (s)	11.7	0.1	0.0									
Approach LOS	B											
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			33.3%			ICU Level of Service				A		
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

2028 No-Build
Timing Plan: Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	217	51	49	236	67	76	189	54	79	248	43
Future Volume (vph)	44	217	51	49	236	67	76	189	54	79	248	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		172			1489			1047			152	
Travel Time (s)		5.9			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	






Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 91
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed

Splits and Phases: 1: Vernon Street & Lowell Street

02 (R) 31 s	04 31 s	09 29 s
06 (R) 31 s	08 31 s	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Intersection Summary	


















					
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	339	383	288	59	403
v/c Ratio	0.85	0.92	0.92	0.14	1.31
Control Delay	52.0	62.1	69.1	26.0	190.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	62.1	69.1	26.0	190.8
Queue Length 50th (ft)	184	214	161	26	~301
Queue Length 95th (ft)	#334	#385	#316	56	#478
Internal Link Dist (ft)	92	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	401	416	312	426	308
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.92	0.92	0.14	1.31

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	44	217	51	49	236	67	76	189	54	79	248	43	
Future Volume (vph)	44	217	51	49	236	67	76	189	54	79	248	43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.98			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1765			1785			1743	1553		1768		
Flt Permitted		0.82			0.84			0.64	1.00		0.63		
Satd. Flow (perm)		1461			1516			1139	1553		1125		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	48	236	55	53	257	73	83	205	59	86	270	47	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	339	0	0	383	0	0	288	59	0	403	0	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.27			0.27			0.27	0.27		0.27		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Grp Cap (vph)		401			416			312	426		309		
v/s Ratio Prot													
v/s Ratio Perm		0.23			c0.25			0.25	0.04		c0.36		
v/c Ratio		0.85			0.92			0.92	0.14		1.30		
Uniform Delay, d1		31.2			32.0			32.1	24.9		33.0		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		19.2			28.1			34.6	0.7		158.5		
Delay (s)		50.4			60.1			66.7	25.6		191.5		
Level of Service		D			E			E	C		F		
Approach Delay (s)		50.4			60.1			59.7			191.5		
Approach LOS		D			E			E			F		
Intersection Summary													
HCM 2000 Control Delay			93.7									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			74.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													










2: Lowell Street & Western Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	316	353	3	0	17
Future Volume (Veh/h)	13	316	353	3	0	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	343	384	3	0	18
Pedestrians		147	145		147	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		14	14		14	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			324			
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	534				1048	680
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398				985	564
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	95
cM capacity (veh/h)	883				177	343
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	357	387	18			
Volume Left	14	0	0			
Volume Right	0	3	18			
cSH	883	1700	343			
Volume to Capacity	0.02	0.23	0.05			
Queue Length 95th (ft)	1	0	4			
Control Delay (s)	0.5	0.0	16.1			
Lane LOS	A		C			
Approach Delay (s)	0.5	0.0	16.1			
Approach LOS			C			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			47.1%	ICU Level of Service		A
Analysis Period (min)			15			

3: Lowell Street & Eastern Site Driveway HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
Timing Plan: Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	312	342	13	0	14
Future Volume (Veh/h)	4	312	342	13	0	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	339	372	14	0	15
Pedestrians		91	91		91	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		9	9		9	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			172			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	477				908	561
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	281				795	381
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	991				251	469
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	343	386	15			
Volume Left	4	0	0			
Volume Right	0	14	15			
cSH	991	1700	469			
Volume to Capacity	0.00	0.23	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.1	0.0	12.9			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	12.9			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			39.3%		ICU Level of Service	A
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	2	2	0	8	11	285	3	3	365	21
Future Volume (Veh/h)	3	0	2	2	0	8	11	285	3	3	365	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	3	0	2	2	0	9	12	310	3	3	397	23
Pedestrians		17			2			17			17	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			0			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								260				
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	793	770	442	771	780	330	437			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	721	696	442	696	707	211	437			194		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	99	99			100		
cM capacity (veh/h)	292	323	599	311	319	743	1115			1260		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	5	11	325	423								
Volume Left	3	2	12	3								
Volume Right	2	9	3	23								
cSH	368	593	1115	1260								
Volume to Capacity	0.01	0.02	0.01	0.00								
Queue Length 95th (ft)	1	1	1	0								
Control Delay (s)	14.9	11.2	0.4	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	14.9	11.2	0.4	0.1								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			36.8%		ICU Level of Service					A		
Analysis Period (min)			15									

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	4	0	0	0	1	293	6	2	366	1
Future Volume (Veh/h)	6	0	4	0	0	0	1	293	6	2	366	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	7	0	4	0	0	0	1	318	7	2	398	1
Pedestrians		19						19			19	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		2						2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	764	748	436	749	746	340	418			325		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	669	652	436	652	648	191	418			174		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	100	100	100	100			100		
cM capacity (veh/h)	314	338	602	326	340	744	1131			1254		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	11	326	401									
Volume Left	7	1	2									
Volume Right	4	7	1									
cSH	380	1131	1254									
Volume to Capacity	0.03	0.00	0.00									
Queue Length 95th (ft)	2	0	0									
Control Delay (s)	14.7	0.0	0.1									
Lane LOS	B	A	A									
Approach Delay (s)	14.7	0.0	0.1									
Approach LOS	B											
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			35.5%		ICU Level of Service				A			
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

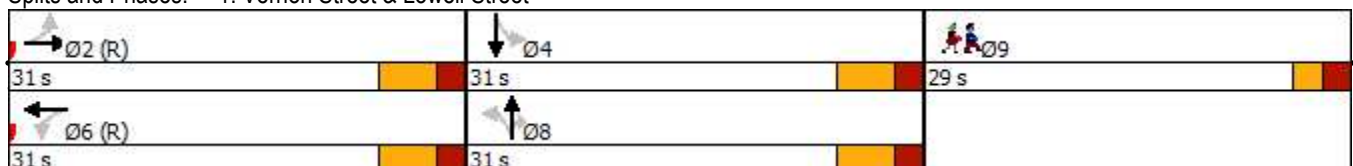
2028 No-Build
Timing Plan: Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	215	65	64	169	74	60	255	56	56	207	57
Future Volume (vph)	63	215	65	64	169	74	60	255	56	56	207	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		172			1489			1047			152	
Travel Time (s)		5.9			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 91
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Intersection Summary	



















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	373	334	342	61	348
v/c Ratio	0.96	0.92	0.90	0.15	1.16
Control Delay	72.2	65.5	60.1	26.2	135.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	65.5	60.1	26.2	135.3
Queue Length 50th (ft)	212	187	189	27	~239
Queue Length 95th (ft)	#390	#351	#350	58	#407
Internal Link Dist (ft)	92	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	387	362	381	417	300
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	0.92	0.90	0.15	1.16

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	63	215	65	64	169	74	60	255	56	56	207	57	
Future Volume (vph)	63	215	65	64	169	74	60	255	56	56	207	57	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	0.98		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.97			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1754			1771			1771	1520		1763		
Flt Permitted		0.80			0.74			0.78	1.00		0.61		
Satd. Flow (perm)		1411			1317			1389	1520		1092		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	68	234	71	70	184	80	65	277	61	61	225	62	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	373	0	0	334	0	0	342	61	0	348	0	
Confl. Bikes (#/hr)									1				
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.27			0.27			0.27	0.27		0.27		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Grp Cap (vph)		387			361			381	417		300		
v/s Ratio Prot													
v/s Ratio Perm		c0.26			0.25			0.25	0.04		c0.32		
v/c Ratio		0.96			0.93			0.90	0.15		1.16		
Uniform Delay, d1		32.6			32.1			31.8	24.9		33.0		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		37.5			31.7			26.4	0.7		102.5		
Delay (s)		70.1			63.8			58.1	25.7		135.5		
Level of Service		E			E			E	C		F		
Approach Delay (s)		70.1			63.8			53.2			135.5		
Approach LOS		E			E			D			F		
Intersection Summary													
HCM 2000 Control Delay			79.6									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			73.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													










2: Lowell Street & Western Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	338	281	1	2	2
Future Volume (Veh/h)	3	338	281	1	2	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	367	305	1	2	2
Pedestrians		15	15		15	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			324			
pX, platoon unblocked						
vC, conflicting volume	321				708	336
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	321				708	336
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1232				391	691
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	370	306	4			
Volume Left	3	0	2			
Volume Right	0	1	2			
cSH	1232	1700	500			
Volume to Capacity	0.00	0.18	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.1	0.0	12.3			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	12.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			34.1%		ICU Level of Service	A
Analysis Period (min)			15			


















3: Lowell Street & Eastern Site Driveway HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
Timing Plan: Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	337	280	6	6	2
Future Volume (Veh/h)	3	337	280	6	6	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	366	304	7	7	2
Pedestrians		10	13		13	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			172			
pX, platoon unblocked						
vC, conflicting volume	324				706	330
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				706	330
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1232				395	700
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	369	311	9			
Volume Left	3	0	7			
Volume Right	0	7	2			
cSH	1232	1700	437			
Volume to Capacity	0.00	0.18	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.1	0.0	13.4			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	13.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			33.0%		ICU Level of Service	A
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	6	0	4	4	0	3	4	386	2	1	306	11	
Future Volume (Veh/h)	6	0	4	4	0	3	4	386	2	1	306	11	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
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	
Hourly flow rate (vph)	7	0	4	4	0	3	4	420	2	1	333	12	
Pedestrians		10			5			10			10		
Lane Width (ft)		12.0			12.0			12.0			12.0		
Walking Speed (ft/s)		3.5			3.5			3.5			3.5		
Percent Blockage		1			0			1			1		
Right turn flare (veh)													
Median type								None			None		
Median storage (veh)													
Upstream signal (ft)								260					
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85			
vC, conflicting volume	793	786	359	789	791	436	355			427			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	669	661	359	665	667	250	355			240			
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	98	100	99	99	100	100	100			100			
cM capacity (veh/h)	306	322	677	310	319	666	1203			1134			
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total	11	7	426	346									
Volume Left	7	4	4	1									
Volume Right	4	3	2	12									
cSH	382	402	1203	1134									
Volume to Capacity	0.03	0.02	0.00	0.00									
Queue Length 95th (ft)	2	1	0	0									
Control Delay (s)	14.7	14.1	0.1	0.0									
Lane LOS	B	B	A	A									
Approach Delay (s)	14.7	14.1	0.1	0.0									
Approach LOS	B	B											
Intersection Summary													
Average Delay			0.4										
Intersection Capacity Utilization			36.2%		ICU Level of Service					A			
Analysis Period (min)			15										

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 No-Build
 Timing Plan: Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	7	0	0	0	2	390	0	0	313	1
Future Volume (Veh/h)	2	0	7	0	0	0	2	390	0	0	313	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	2	0	8	0	0	0	2	424	0	0	340	1
Pedestrians		9						9			9	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.84	0.84		0.84	0.84	0.84				0.84		
vC, conflicting volume	786	778	358	786	778	433	350			424		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	653	642	358	651	642	233	350			222		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	100	100	100	100			100		
cM capacity (veh/h)	315	329	679	314	329	677	1210			1144		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	10	426	341									
Volume Left	2	2	0									
Volume Right	8	0	1									
cSH	551	1210	1144									
Volume to Capacity	0.02	0.00	0.00									
Queue Length 95th (ft)	1	0	0									
Control Delay (s)	11.7	0.1	0.0									
Lane LOS	B	A										
Approach Delay (s)	11.7	0.1	0.0									
Approach LOS	B											
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			34.7%			ICU Level of Service				A		
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

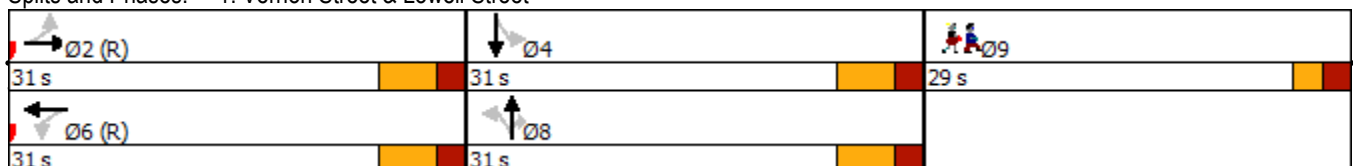
2028 Build
Timing Plan: Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43
Future Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		325			1489			1047			152	
Travel Time (s)		11.1			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 91
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
<hr/>	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
<hr/>	
Intersection Summary	
<hr/>	


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	339	389	294	59	424
v/c Ratio	0.85	0.93	0.94	0.14	1.43
Control Delay	52.6	64.2	72.9	26.0	241.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	64.2	72.9	26.0	241.9
Queue Length 50th (ft)	184	218	165	26	~333
Queue Length 95th (ft)	#335	#394	#324	56	#513
Internal Link Dist (ft)	245	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	399	417	312	426	296
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.93	0.94	0.14	1.43

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43	
Future Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.98			0.97			1.00	0.85		0.99		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1765			1783			1745	1553		1768		
Flt Permitted		0.82			0.85			0.64	1.00		0.60		
Satd. Flow (perm)		1453			1518			1138	1553		1081		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	48	236	55	53	260	76	83	211	59	97	280	47	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	339	0	0	389	0	0	294	59	0	424	0	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.27			0.27			0.27	0.27		0.27		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Grp Cap (vph)		399			417			312	426		296		
v/s Ratio Prot													
v/s Ratio Perm		0.23			c0.26			0.26	0.04		c0.39		
v/c Ratio		0.85			0.93			0.94	0.14		1.43		
Uniform Delay, d1		31.2			32.2			32.3	24.9		33.0		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		19.7			30.1			38.2	0.7		213.0		
Delay (s)		51.0			62.2			70.4	25.6		246.0		
Level of Service		D			E			E	C		F		
Approach Delay (s)		51.0			62.2			62.9			246.0		
Approach LOS		D			E			E			F		
Intersection Summary													
HCM 2000 Control Delay			111.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.79										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			76.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

2: Lowell Street & Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	296	320	38	16	61
Future Volume (Veh/h)	38	296	320	38	16	61
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	322	348	41	17	66
Pedestrians		147	145		147	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		14	14		14	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			325			
pX, platoon unblocked	0.86				0.86	0.86
vC, conflicting volume	536				1064	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	382				995	529
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				90	81
cM capacity (veh/h)	881				167	353
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	363	389	83			
Volume Left	41	0	17			
Volume Right	0	41	66			
cSH	881	1700	287			
Volume to Capacity	0.05	0.23	0.29			
Queue Length 95th (ft)	4	0	29			
Control Delay (s)	1.5	0.0	22.5			
Lane LOS	A		C			
Approach Delay (s)	1.5	0.0	22.5			
Approach LOS			C			
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			60.9%	ICU Level of Service		B
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	0	12	2	0	8	15	275	3	3	346	45
Future Volume (Veh/h)	23	0	12	2	0	8	15	275	3	3	346	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	25	0	13	2	0	9	16	299	3	3	376	49
Pedestrians		17			2			17			17	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			0			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								260				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	782	760	434	771	782	320	442			304		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	718	693	434	706	718	213	442			197		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	98	99	100	99	99			100		
cM capacity (veh/h)	296	327	606	303	317	749	1110			1271		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	38	11	318	428								
Volume Left	25	2	16	3								
Volume Right	13	9	3	49								
cSH	359	591	1110	1271								
Volume to Capacity	0.11	0.02	0.01	0.00								
Queue Length 95th (ft)	9	1	1	0								
Control Delay (s)	16.2	11.2	0.6	0.1								
Lane LOS	C	B	A	A								
Approach Delay (s)	16.2	11.2	0.6	0.1								
Approach LOS	C	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			40.5%		ICU Level of Service					A		
Analysis Period (min)			15									

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	33	0	0	0	20	282	6	2	357	1
Future Volume (Veh/h)	11	0	33	0	0	0	20	282	6	2	357	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	12	0	36	0	0	0	22	307	7	2	388	1
Pedestrians		19						19			19	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		2						2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	785	770	426	802	766	330	408			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	689	671	426	708	668	172	408			154		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	94	100	100	100	98			100		
cM capacity (veh/h)	299	322	610	278	324	759	1141			1268		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	48	336	391									
Volume Left	12	22	2									
Volume Right	36	7	1									
cSH	484	1141	1268									
Volume to Capacity	0.10	0.02	0.00									
Queue Length 95th (ft)	8	1	0									
Control Delay (s)	13.3	0.7	0.1									
Lane LOS	B	A	A									
Approach Delay (s)	13.3	0.7	0.1									
Approach LOS	B											
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			44.5%		ICU Level of Service				A			
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

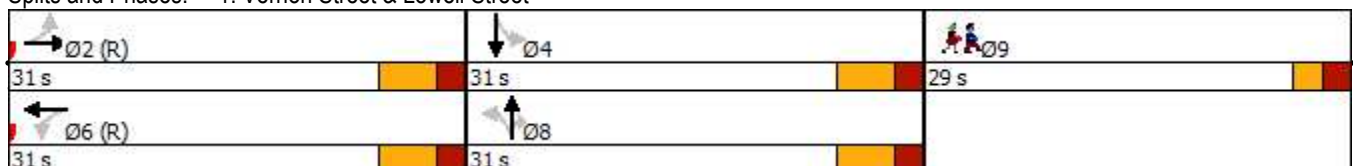
2028 Build
Timing Plan: Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57
Future Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		325			1489			1047			152	
Travel Time (s)		11.1			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	

Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 91
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
<hr/>	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
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Intersection Summary	
<hr/>	


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	373	341	350	61	362
v/c Ratio	0.97	0.94	0.92	0.15	1.30
Control Delay	74.1	68.6	64.1	26.2	188.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	68.6	64.1	26.2	188.5
Queue Length 50th (ft)	212	191	195	27	~269
Queue Length 95th (ft)	#391	#359	#363	58	#439
Internal Link Dist (ft)	245	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	384	363	380	417	279
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.94	0.92	0.15	1.30

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57	
Future Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	0.98		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.97			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1754			1770			1772	1520		1763		
Flt Permitted		0.79			0.74			0.77	1.00		0.57		
Satd. Flow (perm)		1401			1322			1384	1520		1018		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	68	234	71	70	187	84	65	285	61	67	233	62	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	373	0	0	341	0	0	350	61	0	362	0	
Confl. Bikes (#/hr)									1				
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.0			25.0			25.0	25.0		25.0		
Effective Green, g (s)		25.0			25.0			25.0	25.0		25.0		
Actuated g/C Ratio		0.27			0.27			0.27	0.27		0.27		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Grp Cap (vph)		384			363			380	417		279		
v/s Ratio Prot													
v/s Ratio Perm		c0.27			0.26			0.25	0.04		c0.36		
v/c Ratio		0.97			0.94			0.92	0.15		1.30		
Uniform Delay, d1		32.6			32.3			32.0	24.9		33.0		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		39.3			34.1			30.0	0.7		157.7		
Delay (s)		71.9			66.4			62.0	25.7		190.7		
Level of Service		E			E			E	C		F		
Approach Delay (s)		71.9			66.4			56.6			190.7		
Approach LOS		E			E			E			F		
Intersection Summary													
HCM 2000 Control Delay			95.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.75										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			74.6%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

















2: Lowell Street & Site Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	317	264	25	26	26
Future Volume (Veh/h)	30	317	264	25	26	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	345	287	27	28	28
Pedestrians		15	15		15	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			325			
pX, platoon unblocked						
vC, conflicting volume	329				742	330
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	329				742	330
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	96
cM capacity (veh/h)	1224				365	695
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	378	314	56			
Volume Left	33	0	28			
Volume Right	0	27	28			
cSH	1224	1700	479			
Volume to Capacity	0.03	0.18	0.12			
Queue Length 95th (ft)	2	0	10			
Control Delay (s)	0.9	0.0	13.5			
Lane LOS	A		B			
Approach Delay (s)	0.9	0.0	13.5			
Approach LOS			B			
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			51.4%		ICU Level of Service	A
Analysis Period (min)			15			
















4: Vernon Street & Northern Site Driveway/FNA Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	0	10	4	0	3	9	368	2	1	289	35
Future Volume (Veh/h)	31	0	10	4	0	3	9	368	2	1	289	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	34	0	11	4	0	3	10	400	2	1	314	38
Pedestrians		10			5			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								260				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	779	772	353	782	790	416	362			407		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	656	648	353	659	669	231	362			220		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	99	100	100	99			100		
cM capacity (veh/h)	313	327	682	309	318	685	1196			1157		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	45	7	412	353								
Volume Left	34	4	10	1								
Volume Right	11	3	2	38								
cSH	360	404	1196	1157								
Volume to Capacity	0.12	0.02	0.01	0.00								
Queue Length 95th (ft)	11	1	1	0								
Control Delay (s)	16.4	14.1	0.3	0.0								
Lane LOS	C	B	A	A								
Approach Delay (s)	16.4	14.1	0.3	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			39.0%		ICU Level of Service					A		
Analysis Period (min)			15									

5: Vernon Street & Southern Site Driveway/Wakefield Place Driveway
 HCM Unsignalized Intersection Capacity Analysis

2028 Build
 Timing Plan: Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	31	0	0	0	28	374	0	0	302	1
Future Volume (Veh/h)	5	0	31	0	0	0	28	374	0	0	302	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	0	34	0	0	0	30	407	0	0	328	1
Pedestrians		9						9			9	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								152				
pX, platoon unblocked	0.84	0.84		0.84	0.84	0.84				0.84		
vC, conflicting volume	814	804	346	838	805	416	338			407		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	679	668	346	709	669	204	338			193		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	95	100	100	100	98			100		
cM capacity (veh/h)	295	309	689	270	308	698	1222			1164		
Direction, Lane #	EB 1	NB 1	SB 1									
Volume Total	39	437	329									
Volume Left	5	30	0									
Volume Right	34	0	1									
cSH	588	1222	1164									
Volume to Capacity	0.07	0.02	0.00									
Queue Length 95th (ft)	5	2	0									
Control Delay (s)	11.6	0.8	0.0									
Lane LOS	B	A										
Approach Delay (s)	11.6	0.8	0.0									
Approach LOS	B											
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization			53.1%		ICU Level of Service				A			
Analysis Period (min)			15									

1: Vernon Street & Lowell Street Timings

2028 Build with Improvements

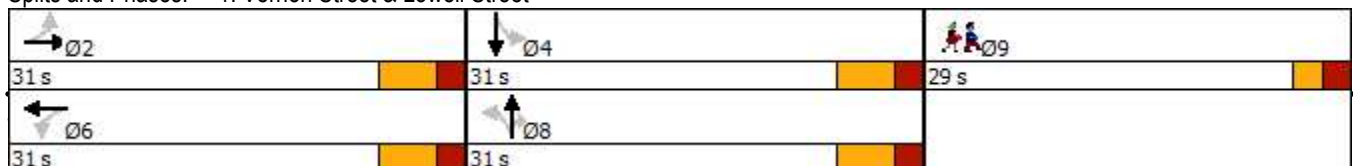
Timing Plan: Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43
Future Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		325			1489			1047			152	
Travel Time (s)		11.1			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None	None	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 67.8
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Intersection Summary	


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	339	389	294	59	424
v/c Ratio	0.56	0.63	0.59	0.10	0.80
Control Delay	23.9	25.8	26.0	17.7	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	25.8	26.0	17.7	35.5
Queue Length 50th (ft)	93	110	81	13	131
Queue Length 95th (ft)	#310	#373	#292	56	#461
Internal Link Dist (ft)	245	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	606	619	501	586	527
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.63	0.59	0.10	0.80

Intersection Summary

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

1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 Build with Improvements
 Timing Plan: Weekday AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43	
Future Volume (vph)	44	217	51	49	239	70	76	194	54	89	258	43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.98			0.97			1.00	0.85		0.99		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1765			1783			1745	1553		1768		
Flt Permitted		0.90			0.91			0.75	1.00		0.78		
Satd. Flow (perm)		1605			1640			1328	1553		1398		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	48	236	55	53	260	76	83	211	59	97	280	47	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	339	0	0	389	0	0	294	59	0	424	0	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.6			25.6			25.6	25.6		25.6		
Effective Green, g (s)		25.6			25.6			25.6	25.6		25.6		
Actuated g/C Ratio		0.36			0.36			0.36	0.36		0.36		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		579			592			479	560		504		
v/s Ratio Prot													
v/s Ratio Perm		0.21			c0.24			0.22	0.04		c0.30		
v/c Ratio		0.59			0.66			0.61	0.11		0.84		
Uniform Delay, d1		18.4			19.0			18.6	15.0		20.8		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		4.3			5.6			2.3	0.1		12.1		
Delay (s)		22.6			24.6			20.9	15.1		32.8		
Level of Service		C			C			C	B		C		
Approach Delay (s)		22.6			24.6			20.0			32.8		
Approach LOS		C			C			B			C		
Intersection Summary													
HCM 2000 Control Delay			25.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			70.9									Sum of lost time (s)	16.0
Intersection Capacity Utilization			76.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

1: Vernon Street & Lowell Street Timings

2028 Build with Improvements

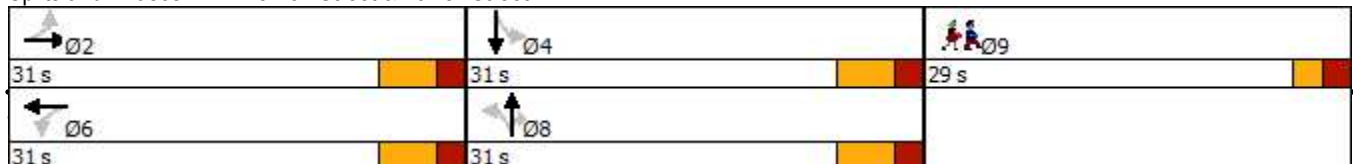
Timing Plan: Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57
Future Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		75	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		20			20			20			20	
Link Distance (ft)		325			1489			1047			152	
Travel Time (s)		11.1			50.8			35.7			5.2	
Confl. Peds. (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		13.0	13.0	13.0	13.0	13.0	
Total Split (s)	31.0	31.0		31.0	31.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		34.1%	34.1%	34.1%	34.1%	34.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None	None	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 91
 Actuated Cycle Length: 67.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Vernon Street & Lowell Street



Lane Group	Ø9
<hr/>	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	32%
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
<hr/>	
Intersection Summary	
<hr/>	


















	→	←	↑	↗	↓
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	373	341	350	61	362
v/c Ratio	0.64	0.60	0.60	0.11	0.67
Control Delay	26.7	25.6	25.3	17.8	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	25.6	25.3	17.8	28.1
Queue Length 50th (ft)	106	95	98	14	104
Queue Length 95th (ft)	#368	#329	#336	58	#369
Internal Link Dist (ft)	245	1409	967		72
Turn Bay Length (ft)				75	
Base Capacity (vph)	582	567	583	573	542
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.60	0.60	0.11	0.67

Intersection Summary

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

1: Vernon Street & Lowell Street
 HCM Signalized Intersection Capacity Analysis

2028 Build with Improvements
 Timing Plan: Weekday PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57	
Future Volume (vph)	63	215	65	64	172	77	60	262	56	62	214	57	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00		
Frbp, ped/bikes		1.00			1.00			1.00	0.98		1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00		
Frt		0.97			0.97			1.00	0.85		0.98		
Flt Protected		0.99			0.99			0.99	1.00		0.99		
Satd. Flow (prot)		1754			1770			1772	1520		1763		
Flt Permitted		0.87			0.84			0.87	1.00		0.81		
Satd. Flow (perm)		1544			1504			1547	1520		1438		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	68	234	71	70	187	84	65	285	61	67	233	62	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	373	0	0	341	0	0	350	61	0	362	0	
Confl. Bikes (#/hr)									1				
Heavy Vehicles (%)	0%	4%	11%	2%	2%	5%	16%	4%	4%	6%	5%	0%	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA		
Protected Phases		2			6			8			4		
Permitted Phases	2			6			8		8	4			
Actuated Green, G (s)		25.6			25.6			25.6	25.6		25.6		
Effective Green, g (s)		25.6			25.6			25.6	25.6		25.6		
Actuated g/C Ratio		0.36			0.36			0.36	0.36		0.36		
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0		
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0		
Lane Grp Cap (vph)		557			543			558	548		519		
v/s Ratio Prot													
v/s Ratio Perm		c0.24			0.23			0.23	0.04		c0.25		
v/c Ratio		0.67			0.63			0.63	0.11		0.70		
Uniform Delay, d1		19.1			18.7			18.7	15.1		19.3		
Progression Factor		1.00			1.00			1.00	1.00		1.00		
Incremental Delay, d2		6.3			5.4			2.2	0.1		4.1		
Delay (s)		25.4			24.1			20.9	15.2		23.4		
Level of Service		C			C			C	B		C		
Approach Delay (s)		25.4			24.1			20.1			23.4		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			23.1									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.64										
Actuated Cycle Length (s)			70.9									Sum of lost time (s)	16.0
Intersection Capacity Utilization			74.6%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Transportation Impact Assessment

Proposed Residential Development
Wakefield, Massachusetts

Prepared for:

Wakefield Associates, Inc.
544 Salem Street
Wakefield, Massachusetts

December 2021

Prepared by:

 **Vanasse &
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EXECUTIVE SUMMARY

DESCRIPTION OF PROJECT

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) to identify traffic impacts associated with a proposed 38-unit residential development to be located at 572-590 North Avenue in Wakefield, Massachusetts (the “Project”). The purpose of this TIA is to review existing and future traffic conditions in the vicinity of the site, determine the traffic impact from the proposed Project at key intersections expected to experience increased traffic levels from the Project, and review the need for improvements to mitigate the Project’s traffic impact.

PROPOSED PROJECT

Currently, the site is undeveloped and is bounded by North Avenue to the east, the Massachusetts Bay Transit Authority (MBTA) Haverhill Line of the commuter rail system to the west, residential properties to the north, and the Knights of Columbus facility to the south. The Project proposes to construct a four-story, 38-unit multifamily residential building on-site. Parking will be provided on-site via a surface parking lot with 58 spaces. Access to the site will be provided via a new full-access curb cut onto North Avenue.

EXISTING CONDITIONS

A comprehensive field inventory was conducted to collect existing roadway geometrics, traffic volumes, operating characteristics, speed limits, and sight distances, as well as land use information. Traffic volumes were collected in October 2021 at the North Avenue at Wolcott Street/Linda Road intersection.

FUTURE CONDITIONS

Traffic volumes within the study area were projected to 2028, which reflect a seven-year planning horizon consistent with State traffic study guidelines. These conditions incorporate traffic growth due to general background traffic increases as well as development projects currently being proposed/permitted or under construction and expected to generate traffic in the future. This condition is referred to as the No-Build condition.

PROJECT-GENERATED TRAFFIC

The Project is expected to generate 172 vehicle trips on an average weekday (two-way, 24-hour volume), with 14 vehicle trips (3 entering and 11 exiting) expected during the weekday morning peak hour. During the weekday evening peak hour, the Project is expected to generate 15 vehicle trips (9 entering and 6 exiting).

The projected vehicle trips were distributed onto area roadways based on existing travel patterns and the U.S. Census Journey-to-Work data for Wakefield, Massachusetts. Traffic-volume increases due to the Project were shown to range from 0.3 to 0.6 percent during the peak periods and are expected to be less during other hours of the day.

The Project-generated traffic was added to the No-Build condition to assess future operations of the roadways and intersections in the study area.

TRAFFIC OPERATIONS ANALYSIS

In future conditions, intersection operations are generally preserved with minimal increases to delay on the various approaches and no changes to critical movement level of service. The addition of Project-related traffic to the study area roadways and intersections is not anticipated to significantly impact traffic operations within the study area over No-Build conditions.

RECOMMENDATIONS AND CONCLUSIONS

Site Recommendations

The site driveway onto North Avenue should be placed under STOP-sign control, with painted STOP bars on the drives at the STOP-sign locations. All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Devices (MUTCD)*¹ and be shorter than 24 inches or be placed outside of the sight lines for drivers exiting the driveway and those approaching the driveway on North Avenue. Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sight lines. Vegetation within sight triangle areas should be shorter than 24 inches or be placed outside of the sight lines for drivers exiting the driveway and those approaching the driveway on North Avenue. A 5-foot wide concrete sidewalk is proposed along the site frontage that would connect to a 4-foot wide sidewalk on-site that creates a pedestrian path to the front entrance of the building and to the parking field on the south and west sides of the building.

Transportation Demand Management (TDM) Plan

Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents and employees of the restaurant. A “welcome packet” will be provided to residents and restaurant employees detailing available public transportation services, bicycle and walking alternatives, and available commuter options. Consideration should be given to installing accommodations for the charging of electric vehicles by residents of the Project. The Applicant will also consider coordinating with the Town

¹*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, DC; 2009.

and other area projects on the provision of shuttle bus service in the event that an area shuttle bus service become available.

Based on the above, VAI has concluded that the Project can be safely accommodated with minimal impact on the area road network.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) in order to identify the traffic impacts associated with a proposed residential redevelopment to be located at 572-590 North Avenue in Wakefield, Massachusetts. This report identifies and analyzes existing and future traffic conditions both with and without the Project and reviews access requirements, potential off-site improvements, and safety considerations.

STUDY METHODOLOGY

This study was prepared in accordance with the State guidelines for Transportation Impact Assessments (TIAs); and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometry, observations of traffic flow, and collection of peak-period traffic counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon was selected for these analyses consistent with state guidelines for the preparation of TIAs. The traffic analysis conducted in stage two identifies projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any are necessary, based on the results from stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in October 2021. The field investigation consisted of an inventory of existing roadway geometrics, as well as posted speed limits, and land use information within the study area. The study area for the Project contains the major roadways which provide access to the Project, as well as the intersections which are expected to accommodate the majority of Project-related traffic. The study area is graphically depicted on Figure 1.

The following describes the study area roadways and intersections which are also shown on Figure 2 which summarizes existing lane use, travel lane widths, and sidewalk and crosswalk locations at the study area intersections.

GEOMETRY

Roadway

North Avenue

North Avenue is classified as a minor arterial roadway under the jurisdiction of the Town of Wakefield, Massachusetts. North Avenue runs in a general northwest-southeast direction from the town line with Reading to Main Street. Direction of travel on North Avenue is separated by a double-yellow centerline. Land use along North Avenue consists of a mix of residential and commercial properties.

Intersection

North Avenue at Wolcott Street/Linda Road

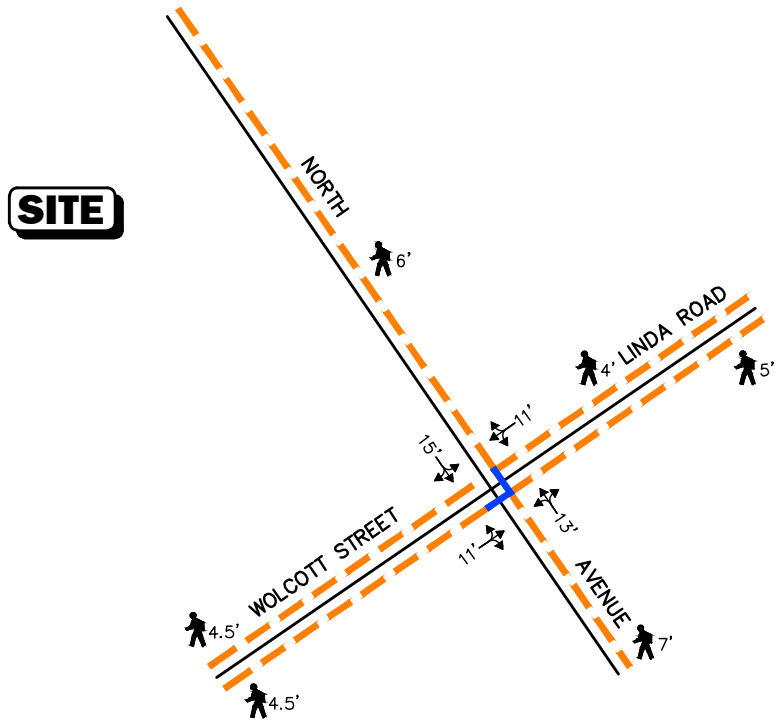
North Avenue is intersected by Wolcott Street from the west and Linda Road from the east to form this four-way intersection under STOP control. Traffic signal equipment is present at the intersection, but the minor street approaches are under flashing red control while North Avenue has a flashing green indication. Hence the intersection essentially operates as a two-way STOP control intersection. Direction of travel on North Avenue is separated by a double-yellow centerline. No demarcation is present on Wolcott Street or Linda Road that delineate direction of travel, but two-way travel is permitted. Illumination is provided via streetlights mounted on wooden utility poles.



Figure 1
Site Location Map

Legend:

- Sidewalk
- Crosswalk
- XX' ↔ Lane Use and Travel Lane Width
- 🚶 XX' Sidewalk Width



North arrow icon
Not To Scale



Figure 2

Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities

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Land use in the vicinity of this intersection consists of residential properties. This intersection is under the jurisdiction of the Town of Wakefield.

EXISTING TRAFFIC VOLUMES

In order to establish existing traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) and an automatic traffic recorder count (ATR) were completed in October 2021. The TMCs were performed from 7:00 to 9:00 AM and from 4:00 to 6:00 PM at the study area intersection. The ATR was placed on North Avenue in the vicinity of the proposed site driveway.

Traffic-Volume Adjustments

In order to develop 2021 Baseline traffic-volume conditions, the data collected required adjustment due to the effects of the COVID-19 pandemic. To achieve this, count data from the Massachusetts Department of Transportation (MassDOT) permanent count station ID 5080² located on Yankee Division Highway north of Route 1 were used. Daily count data from October 2019 and October 2021 were used to develop a COVID-19 correction factor. Based on this evaluation, the 2021 week-day daily traffic volumes were increased by 6 percent, weekday morning peak-hour traffic volumes were increased by 13 percent, and the weekday evening peak-hour traffic volumes were increased by 4 percent. The 2019 COVID-corrected traffic volumes were then grown by 1 percent per year to 2021 baseline conditions.

In addition to correction factors for COVID-19, adjustments were made to account for seasonal fluctuations in traffic. The MassDOT permanent count station ID 5080 again were used to adjust the traffic volumes for seasonal fluctuations. Based on this data, it was determined that October traffic volumes are approximately 2 percent higher than average-month conditions for this station. Therefore, traffic volumes were not decreased to average-month conditions in order to provide a conservative analysis. The 2021 Baseline traffic volumes on North Avenue are summarized in Table 1.

**Table 1
2021 BASELINE ROADWAY TRAFFIC-VOLUME SUMMARY**

Location	Weekday	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Daily Volume (vpd) ^a	Volume (vph) ^b	Percent of Daily Traffic ^c	Predominant Flow	Volume (vph)	Percent of Daily Traffic	Predominant Flow
North Avenue, near Proposed Site Driveway	19,000	1,368	7.2	53% NB	1,431	7.5	51% SB

Source: COVID-19 correction factors and seasonal adjustment applied to ATR and TMCs conducted by VAI in October 2021.
^aTwo-way daily traffic expressed in vehicles per day.
^bTwo-way peak-hour volume expressed in vehicles per hour.
^cThe percent of daily traffic that occurs during the peak hour.
 NB = northbound; SB = southbound.

²MassDOT Transportation Data Management System; Location ID 5080; Located on Yankee Division Highway (I-95) north of Route 1.

As can be seen in Table 1, North Avenue was found to accommodate approximately 19,000 vehicles per day (vpd) with 1,368 vehicles per hour (vph) during the weekday morning peak hour and 1,431 vph during the weekday evening peak hour. During the weekday morning peak hour, 53 percent of the traffic is traveling northbound and during the weekday evening peak hour 51 percent of the traffic is traveling southbound. The baseline weekday morning and weekday evening traffic volumes for the study area intersections are graphically depicted in Figure 3.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was conducted in October 2021. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of bicycle facilities. Sidewalks are provided along both sides of Wolcott Street and Linda Road and along the east side of North Avenue. The intersection of North Avenue with Wolcott Street/Linda Road has crosswalks provided across the northbound and westbound approaches. While the streets in the study area do not provide exclusive bicycle facilities, the North Avenue travel lanes can accommodate bicycles due to widths of between 13 and 15 feet per lane. North Avenue also has sharrow pavement markings indicating the roadway is meant for shared use between bicycles and motor vehicles.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the MBTA for fixed-route bus and commuter rail services. Table 2 summarizes the characteristics of these services. Schedules and fare information for the fixed-route bus and commuter rail services are provided in the Appendix.

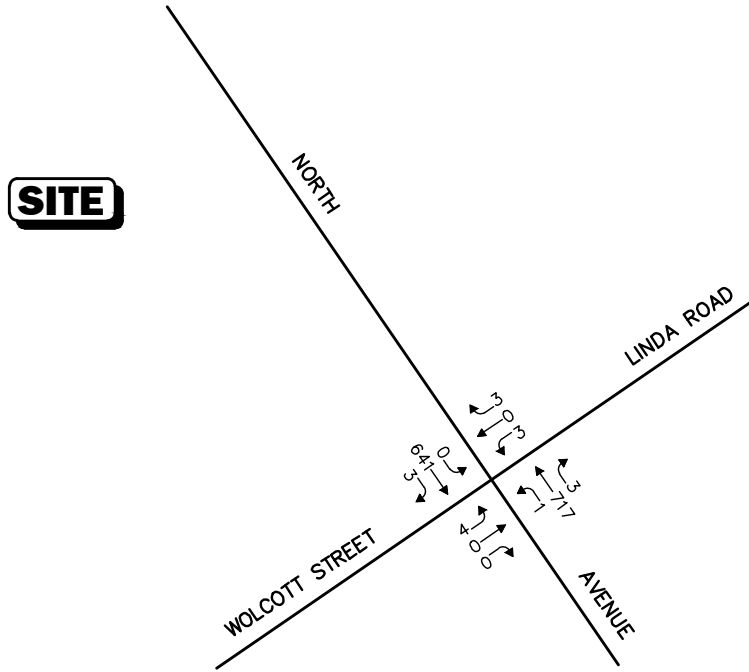
**Table 2
PUBLIC TRANSPORTATION SERVICES**

Service	Stop Closest to Site	Distance from Site	Weekday		Saturday		Sunday	
			Hours of Operation	Headway (minutes)	Hours of Operation	Headway (minutes)	Hours of Operation	Headway (minutes)
Bus Route 137: Reading Depot – Malden Center Station	North Avenue at Wolcott Street	300 feet South	4:49 AM - 11:00 PM	3-55	6:00 AM - 9:28 PM	40-55	8:00 AM - 5:46 PM	82-100
Commuter Rail: Haverhill Line	Wakefield Station	0.9 mile South	5:27 AM - 12:04 AM	45-99	5:35 AM - 12:04 AM	120-180	5:27 AM - 12:04 AM	120-180

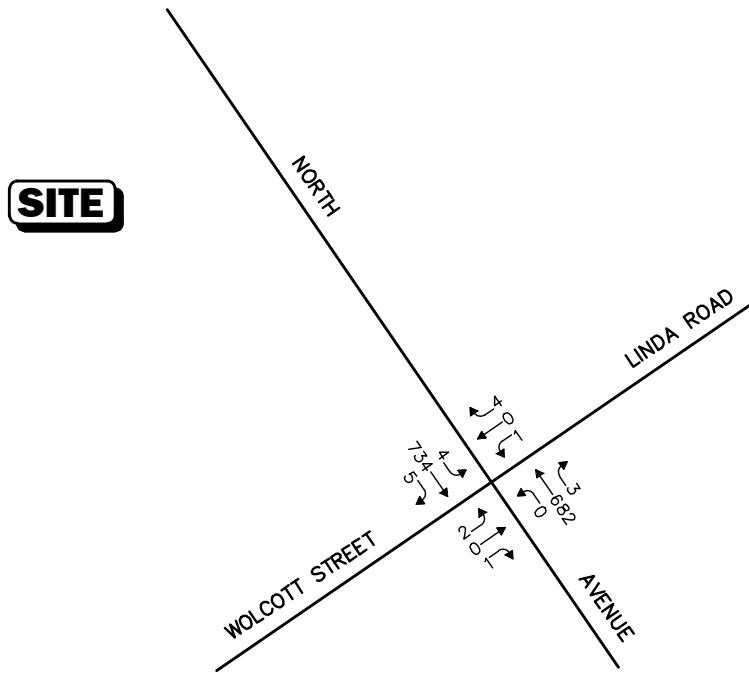
MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Safety Management/Traffic Operations Unit for the most recent five-year period available (2014 through 2018). The data is summarized in Table 3 by intersection, type, weather condition, lighting condition, pavement condition, and severity.

WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



North arrow icon
Not To Scale



Figure 3
2021 Baseline
Peak-Hour Traffic Volumes

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Table 3
MOTOR VEHICLE CRASH DATA SUMMARY

Scenario	North Avenue at Wolcott Street/Linda Road
<i>Year:</i>	
2014	0
2015	3
2016	0
2017	0
<u>2018</u>	<u>2</u>
Total	5
Average ^a	1.0
Crash Rate ^b	0.14
Significant ^c	No
<i>Type:</i>	
Angle	4
Rear-End	1
Head-On	0
Sideswipe	0
Fixed Object	0
Pedestrian	0
Bicyclist	0
<u>Unknown/Other</u>	<u>0</u>
Total	5
<i>Weather Conditions:</i>	
Clear	5
Cloudy/Rain	0
Snow/Ice	0
Fog	0
<u>Unknown/Other</u>	<u>0</u>
Total	5
<i>Lighting Conditions:</i>	
Daylight	4
Dawn/Dusk	1
Dark (lit)	0
Dark (unlit)	0
<u>Unknown/Other</u>	<u>0</u>
Total	5
<i>Pavement Conditions:</i>	
Dry	5
Wet	0
Snow/Ice	0
<u>Unknown/Other</u>	<u>0</u>
Total	5
<i>Severity:</i>	
Property Damage Only	3
Personal Injury	2
Fatality	0
<u>Unknown/Other</u>	<u>0</u>
Total	5

^aAverage number of crashes over five-year period.

^bCrash rate per million entering vehicles (mev).

^cSignificant if crash rate > 0.73 for signalized intersections or > 0.57 for unsignalized intersections (MassDOT District 4 rates).

Source: MassDOT Crash Data, 2014 through 2018.

As can be seen in Table 3, the intersection of North Avenue at Wolcott Street/Linda Road experienced a total of 5 accidents over the five-year review period, averaging 1 accident per year. The majority of the accidents were angle collisions (4 out of 5), occurred on dry pavement (5 out of 5), during the daylight (4 out of 5), in clear weather (5 out of 5), and caused property damage only (3 out of 5). In addition, no fatalities were reported over the five-year period reviewed. The crash rate for the intersection was observed to be lower than the MassDOT District 4 crash rates for unsignalized intersections.

VEHICLE SPEEDS

Existing vehicle speeds along North Avenue, near the proposed site driveway, were recorded to determine the average and 85th percentile vehicle speeds. The speed limit on North Avenue is posted at 30 miles per hour (mph) southbound in the vicinity of the site. No speed limit is posted northbound on North Avenue in the vicinity of the site. The results of the speed measurements are shown in Table 4.

**Table 4
OBSERVED VEHICLE SPEEDS – (In Miles Per Hour)**

Location/Direction	Average Speed	85 th Percentile Speed ^a
<i>North Avenue, near Proposed Site Driveway:</i>		
Northbound	32	36
Southbound	31	35

^aThe 85th percentile speed is the speed at which 85 percent of the traffic is traveling at or below. It is commonly used for setting speed limits on roadways.

As can be seen from Table 4, the average speed recorded northbound on North Avenue was 32 mph and the 85th percentile speed recorded was 36 mph. The average speed recorded southbound was 31 mph and the 85th percentile speed was 35 mph.

SIGHT DISTANCE EVALUATION

Sight distances were reviewed at the location of the proposed site driveway where it intersects with North Avenue in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)³ standards. Stopping sight distance (SSD) is the minimum distance required for an approaching driver at a height of 3.5 feet to perceive and react accordingly to a stationary object 2 feet tall in its path. The values are based on a perception and reaction time of 2.5 seconds and braking distance required under wet, level pavements. Intersection sight distance (ISD) is based on the time required to perceive, react, and complete desired exiting maneuver from a driveway once the driver decides to execute the maneuver. Values for exiting sight distance rep-

³A Policy on Geometric Design of Highway and Streets, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.

resent the time to: 1) turn left or right, in addition to accelerating to the operating speed of the roadway, without causing approaching vehicles to reduce speed by more than 10 mph, and 2) upon turning left, to clear the near half of the intersection without conflicting with the vehicles approaching from the left. When the roadway is either on an upgrade or downgrade, grade correction factors are applied. Table 5 summarizes sight distance measurements at the site driveway location.

Table 5
SIGHT DISTANCE MEASUREMENTS

Location/Sight Distance	Required Distances Based on 85 th Percentile Speed ^a	Measured Distances (Feet)
<i>North Avenue at Site Driveway</i>		
<i>Stopping Sight Distance:</i>		
Looking north to the driveway	257 ^a	600+
Looking south to the driveway	247 ^b	600+
<i>Intersection Sight Distance:</i>		
Looking north from the driveway	397 ^b	600+ ^c
Looking south from the driveway	386 ^a	600+

^aBased on northbound 85th percentile speed of 36 mph.

^bBased on southbound 85th percentile speed of 35 mph.

^cTrimming of vegetation on-site required for sight distance to be 600+ feet.

As shown in Table 5, adequate SSD and ISD are available based on the 85th percentile speeds as long as the current vegetation on-site is trimmed.

FUTURE CONDITIONS

To determine the impact of site-generated traffic volumes on the roadway network under future conditions, baseline traffic volumes in the study area were projected to the year 2028. Traffic volumes on the roadway network at that time, in the absence of the Project (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others expected to be completed by 2028. Inclusion of these factors resulted in the development of 2028 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2028 Build traffic-volume conditions.

FUTURE TRAFFIC GROWTH

Traffic growth on area roadways is a function of the expected land development impacting the study area. Several methods are used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all existing traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

In addition, we identified the location and type of planned development affecting the study area, estimated the traffic to be generated by that development, and assigned it to the area roadway network. This produces a more realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and development external to the study area would not be accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were used in this TIA.

General Background Growth

Traffic-volume data compiled by MassDOT from permanent count stations and historic traffic counts in the area were reviewed in order to determine general background traffic growth trends. Based on a review of this data and other area traffic studies, it was determined that the traffic volumes are fluctuating in the area with an average increase of approximately 0.85 percent per year. To be conservative, a 1.0 percent per year compounded annual background traffic growth rate was used to account for future traffic growth including presently unforeseen development within the study area.

Specific Development by Others

The Town of Wakefield was contacted in order to determine if there are any planned or approved specific development projects within the area that would have an impact on future traffic volumes at the study intersections. Based on these discussions, the following projects were identified for review for possible inclusion in this assessment.

62-76 Foundry Street – This development entails the construction of 58 residential units with 3,750 square feet (sf) of restaurant space and 92 on-site parking spaces to be located at 62-76 Foundry Street in Wakefield, Massachusetts. Traffic volumes from the *Transportation Impact Statement*⁴ dated April 2021 and the *Response to TAC Comments*⁵ letter dated July 14, 2021, both submitted by VAI, were added to the future condition networks.

200-400 Quannapowitt Parkway – This development entails the construction of 440 residential units with a 2,750 sf restaurant to be located at 200-400 Quannapowitt Parkway in Wakefield, Massachusetts. Traffic volumes from the *Transportation Impact Assessment*⁶ dated April 2021, the *Supplemental Traffic Analysis*⁷ memorandum dated August 30, 2021, and the *Proposed Project Program Change*⁸ letter dated October 13, 2021, all submitted by VAI, were added to the future condition networks.

44-48 Crescent Street – This development entails constructing 45 residential units and 70 on-site parking spaces. Traffic volumes from the *Traffic Impact Statement*⁹ dated February 8, 2021 and the *Response to Traffic Advisory Committee Comments*¹⁰ memorandum dated May 14, 2021, both submitted by VAI, were added to the future condition networks.

Planned Roadway Improvements

The Town of Wakefield was contacted in order to determine if there are any planned roadway improvement projects expected to be completed within the study area in the seven-year planning horizon. Based on these discussions, no roadway improvement projects beyond general maintenance are planned within the study area and study horizon.

⁴*Transportation Impact Statement – Proposed Residential Development – Wakefield, Massachusetts; Vanasse and Associates Inc.; April 2021.*

⁵*Responses to TAC Comments – Residential Development 62-76 Foundry Street Wakefield, Massachusetts; Vanasse and Associates Inc.; July 14, 2021.*

⁶*Transportation Impact Assessment – Proposed Mixed-Use Development 200 Quannapowitt Parkway – Wakefield, Massachusetts; Vanasse and Associates Inc.; April 2021.*

⁷*Supplemental Traffic Analysis – 200-400 Quannapowitt – Wakefield, Massachusetts; Vanasse and Associates Inc.; August 30, 2021.*

⁸*Proposed Project Program Change – 200-400 Quannapowitt Parkway Mixed-Use Development – Wakefield, Massachusetts; Vanasse and Associates Inc.; October 13, 2021.*

⁹*Traffic Impact Statement – Proposed Residential Development – 44-48 Crescent Street – Wakefield, Massachusetts; Vanasse and Associates Inc.; February 8, 2021.*

¹⁰*Responses to Traffic Advisory Committee Comments – 44-48 Crescent Street – Wakefield, Massachusetts; Vanasse and Associates Inc.; May 14, 2021.*

NO-BUILD TRAFFIC VOLUMES

The 2028 No-Build peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2021 Baseline peak-hour traffic volumes and incorporating traffic projections from the identified background developments. The resulting 2028 No-Build weekday morning and weekday evening peak-hour traffic-volume networks are shown on Figure 4.

PROJECT-GENERATED TRAFFIC

The Project entails constructing 38 residential units. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹¹ for Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit* were used. A summary of the expected vehicle-trip generation is provided in Table 6.

Table 6
PROJECT TRIP-GENERATION SUMMARY^a

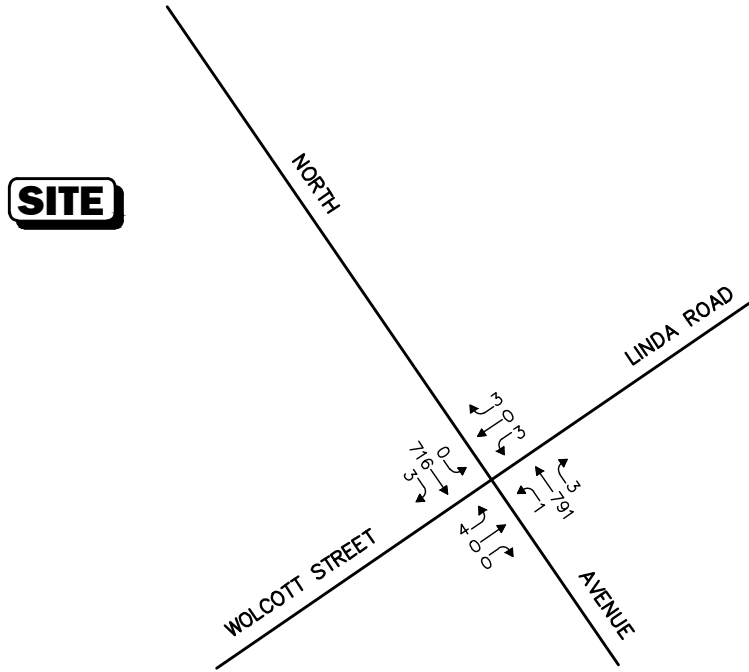
<u>Time Period/ Directional Distribution</u>	<u>Multifamily Residential^a Vehicle Trips</u>
Weekday Daily	172
<i>Weekday Morning Peak Hour:</i>	
Entering	3
<u>Exiting</u>	<u>11</u>
Total	14
<i>Weekday Evening Peak Hour:</i>	
Entering	9
<u>Exiting</u>	<u>6</u>
Total	15

^aBased on ITE LUC 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit*; 38 units.

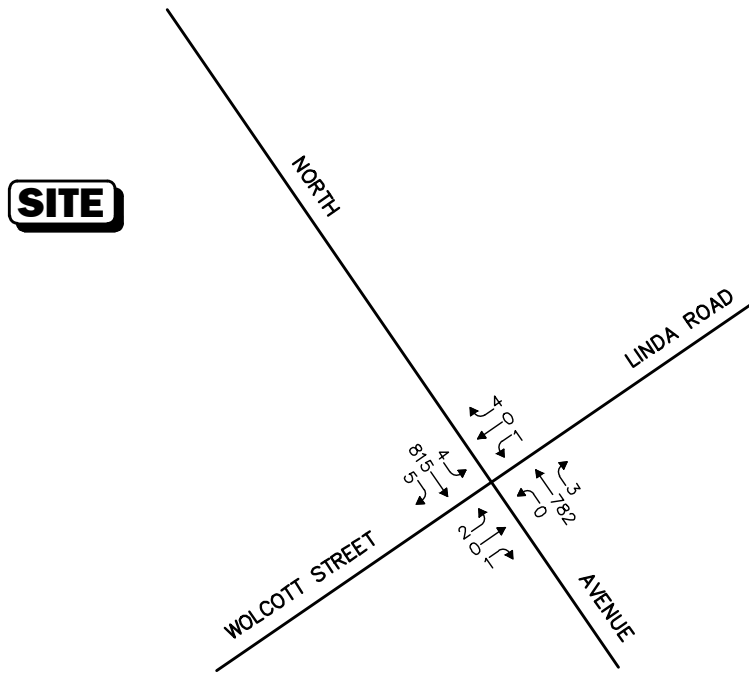
As can be seen in Table 6, the Project is expected to generate 172 vehicle trips on an average weekday (two-way, 24-hour volume), with 14 vehicle trips (3 entering and 11 exiting) expected during the weekday morning peak hour. During the weekday evening peak hour, the Project is expected to generate 15 vehicle trips (9 entering and 6 exiting).

¹¹*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; September 2021.

WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



Not To Scale



Figure 4

2028 No-Build Peak-Hour Traffic Volumes

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated trips to and from the Project was determined and was based on a review of existing travel patterns at the study area intersections and Journey-to-Work data for Wakefield obtained from the United States Census Bureau.¹² The trip distributions for the Project are summarized in Table 7 and graphically depicted on Figure 5. The weekday morning and weekday evening peak-hour traffic volumes expected to be generated by the Project were assigned on the study area roadway network as shown on Figure 6.

Table 7
TRIP-DISTRIBUTION SUMMARY

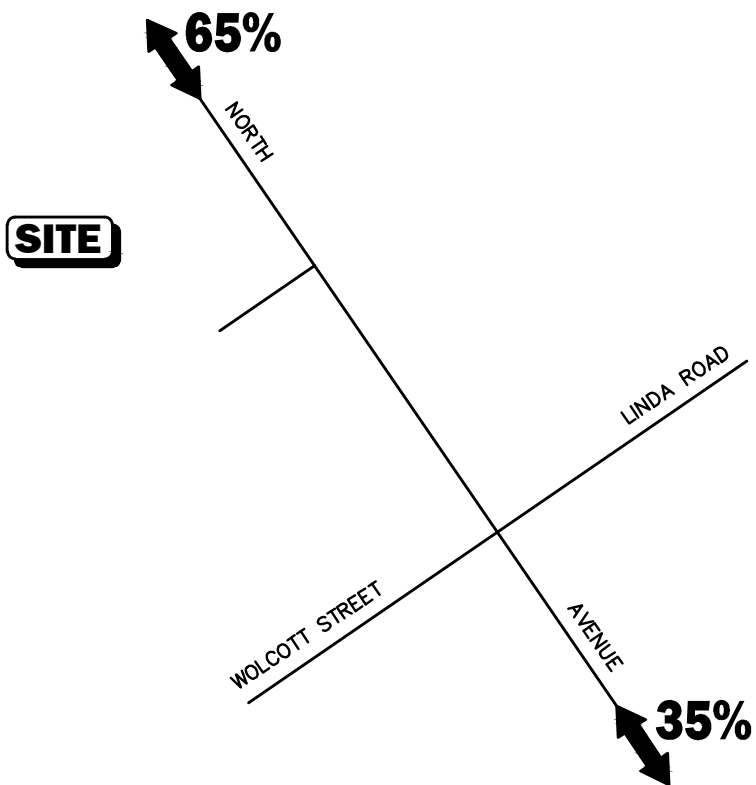
<u>Roadway</u>	<u>Direction (To/From)</u>	<u>Percent (To/From)</u>
North Avenue	North	65
North Avenue	South	<u>35</u>
TOTAL		100

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2028 Build condition networks consist of the 2028 No-Build traffic volumes with the anticipated site-generated traffic added to them. The 2028 Build weekday morning and weekday evening peak-hour traffic-volume networks are graphically depicted on Figure 7.

A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 8. These volumes are based on the expected increases from the Project.

¹²2011-2015 5-Year American Community Survey; U.S. Census Bureau; 2021.



Not To Scale

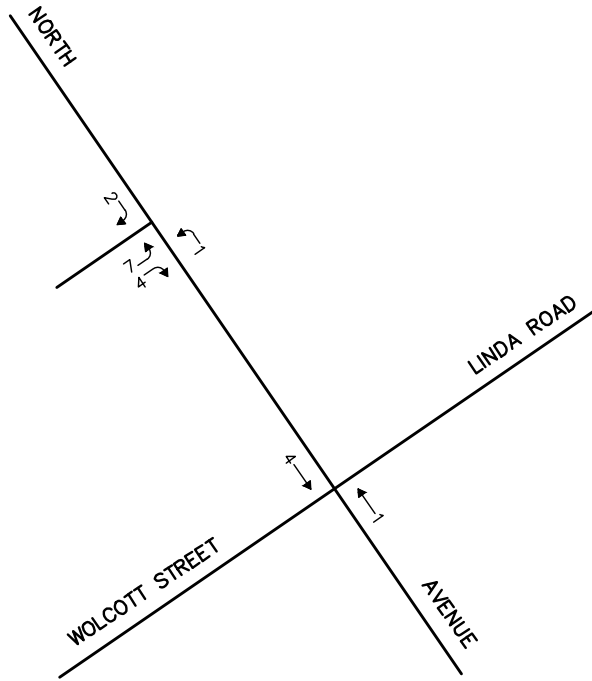
Figure 5

Trip Distribution Map



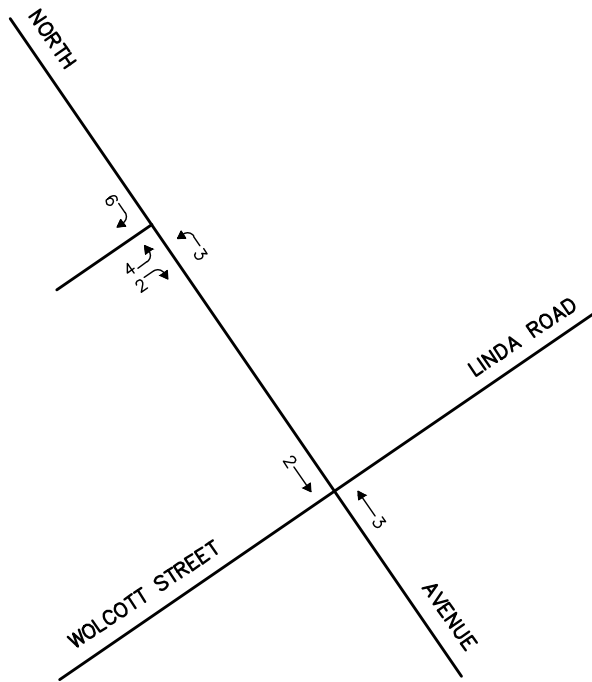
WEEKDAY MORNING PEAK HOUR

SITE	
In	3
Out	11
Total	14



WEEKDAY EVENING PEAK HOUR

SITE	
In	9
Out	6
Total	15



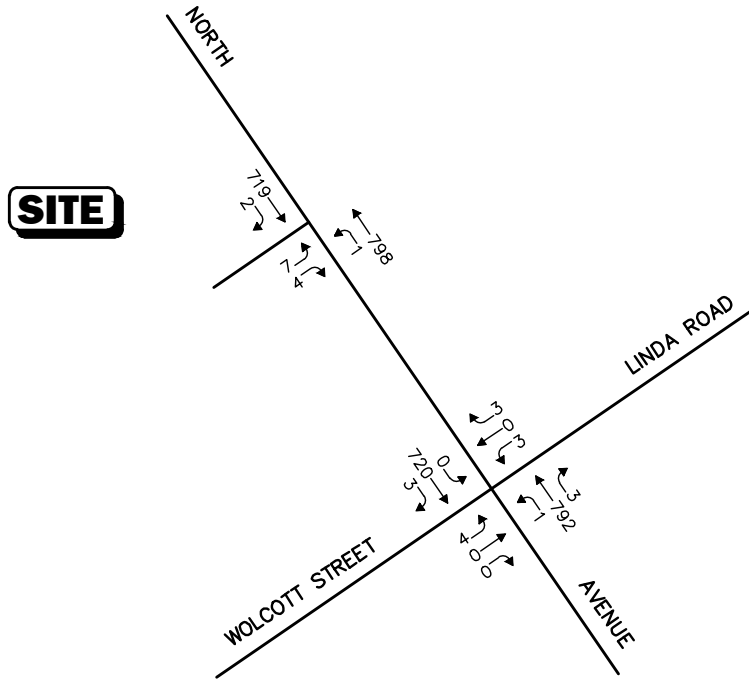
 Not To Scale

Figure 6

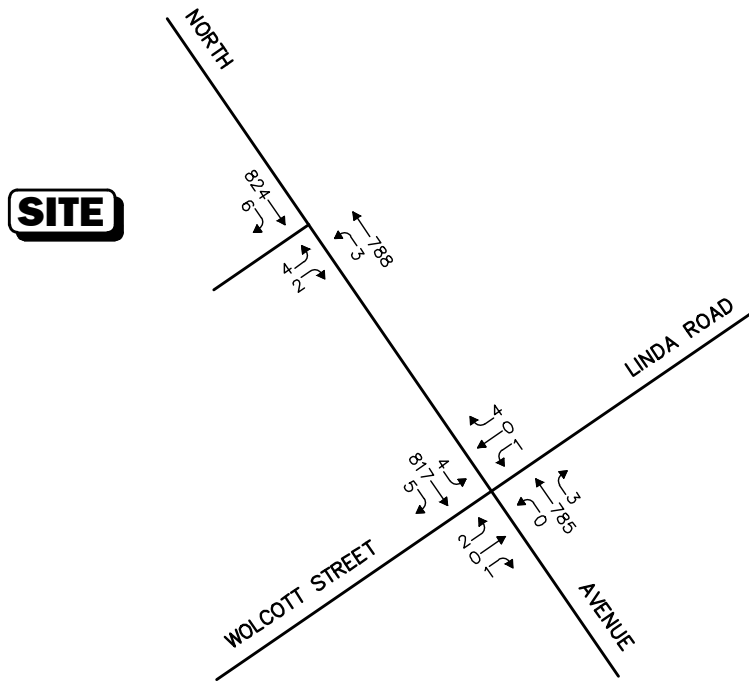


Site-Generated Peak-Hour Traffic Volumes

WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



Not To Scale



Figure 7

2028 Build Peak-Hour Traffic Volumes

Table 8
PEAK-HOUR TRAFFIC-VOLUME INCREASES^a

Location/Peak Hour	2028 No-Build	2028 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
<i>North Avenue, north of Site Driveway:</i>				
Weekday Morning	1,517	1,526	9	0.6
Weekday Evening	1,612	1,622	10	0.6
<i>North Avenue, south of Wolcott Street:</i>				
Weekday Morning	1,514	1,519	5	0.3
Weekday Evening	1,602	1,607	5	0.3

^aTwo-way traffic total.

As shown in Table 8, Project-related traffic-volume increases external to the study area relative to 2028 No-Build conditions are anticipated to range from 0.3 to 0.6 percent during the peak periods.

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build, and Build traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.¹³ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

¹³The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 6th Edition*.¹⁴ Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 6th Edition*. Table 9 summarizes the relationship between level of service and average control delay for two-way STOP-controlled and all-way STOP-controlled intersections.

Table 9
LEVEL-OF-SERVICE CRITERIA FOR
UNSIGNALIZED INTERSECTIONS^a

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
v/c ≤ 1.0	v/c > 1.0	
A	F	≤10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	>50.0

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

¹⁴*Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2021 Baseline, 2028 No-Build, and 2028 Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Table 10.

Unsignalized Intersection Analysis Results

North Avenue at Wolcott Street/Linda Road

Under 2021 Baseline and 2028 No-Build conditions, the critical movements at this intersection operate at LOS F during the weekday morning and weekday evening peak hours. No changes to critical movement level of service occur as a result of the addition of Project volumes under 2028 Build conditions. The 95th percentile queues lengths for the critical movements are estimated to be 15 feet or less over the course of the peak hours which is less than the length of one vehicle.

North Avenue at Site Driveway

Under 2028 Build conditions, the critical movement at this intersection operates at LOS E during the weekday morning peak hour and LOS D during the weekday evening peak hour. The 95th percentile queues for the critical movements are estimated to be 8 feet or less over the course of the peak hours which is less than the length of one vehicle.

Table 10
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Peak Hour/Critical Movement	2021 Baseline				2028 No-Build				2028 Build			
	V/C ^a	Delay ^b	LOS ^c	95 th Queue ^d	V/C	Delay	LOS	95 th Queue	V/C	Delay	LOS	95 th Queue
North Avenue at Wolcott Street/Linda Road												
<i>Weekday Morning:</i>												
Wolcott Street EB LT/RT	0.13	>50	F	10	0.17	>50	F	18	0.17	>50	F	15
Linda Road WB LT/RT	0.14	>50	F	13	0.18	>50	F	18	0.18	>50	F	15
<i>Weekday Evening:</i>												
Wolcott Street EB LT/RT	0.05	49	E	3	0.06	>50	F	5	0.06	>50	F	5
Linda Road WB LT/RT	0.06	36	E	5	0.08	45	E	8	0.08	45	E	8
North Avenue at Site Driveway												
<i>Weekday Morning:</i>												
Site Driveway EB LT/RT									0.10	40	E	8
<i>Weekday Evening:</i>												
Site Driveway EB LT/RT					Intersection is constructed under 2028 Build Conditions				0.05	34	D	5

^aVolume-to-capacity ratio.

^bDelay in seconds per vehicle.

^cLevel of service.

^d95th percentile queue length in feet.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

RECOMMENDATIONS AND CONCLUSIONS

RECOMMENDATIONS

The traffic assessment contained herein indicates that the Project will not have substantial impacts at the study area intersections and Project-related traffic increases are expected to be between 0.3 percent and 0.6 percent during the peak hours depending on location. VAI recommends the following:

Site Recommendations

- The site driveway onto North Avenue should be placed under STOP-sign control, with painted STOP bars on the drives at the STOP-sign locations.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Devices (MUTCD)*¹⁵ and be shorter than 24 inches or be placed outside of the sight lines for drivers exiting the driveway and those approaching the driveway on North Avenue.
- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sight lines.
- Vegetation within sight triangle areas should be shorter than 24 inches or be placed outside of the sightlines for drivers exiting the driveway and those approaching the driveway on North Avenue.
- A 5-foot wide concrete sidewalk is proposed along the site frontage that would connect to a 4-foot wide sidewalk on-site that creates a pedestrian path to the front entrance of the building and to the parking field on the south and west sides of the building.

Transportation Demand Management (TDM) Plan

As is the case with many developments, a major focus of the traffic mitigation plan focuses on the reduction of single-occupant vehicles arriving and departing to and from the site. This is predominantly accomplished by developing a comprehensive TDM strategy. In an effort to encourage the

¹⁵Ibid 1.

use of alternative modes of transportation to single-occupant vehicles, the following TDM measures will be implemented as a part of the Project:

- Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents.
- A “welcome packet” will be provided to residents detailing available public transportation services, bicycle and walking alternatives, and available commuter options.
- Consideration should be given to installing accommodations for the charging of electric vehicles by residents of the Project.
- The Applicant will also consider coordinating with the Town and other area projects on the provision of shuttle bus service in the event that an area shuttle bus service become available.

CONCLUSIONS

VAI has completed a transportation assessment of the potential impacts on the surrounding transportation infrastructure associated with the proposed 38-unit residential development to be located at 572-590 North Avenue in Wakefield, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project.

The Project is expected to produce a minor increase in traffic volumes in the vicinity of the site with minimal increases in delays and no changes to level of service for movements at the study area intersections. Based on the above, VAI has concluded that the Project can be safely accommodated with minimal impact on the area road network.

APPENDIX

TRAFFIC COUNT DATA
COVID-19 ADJUSTMENT DATA
SEASONAL ADJUSTMENT DATA
PUBLIC TRANSPORTATION SCHEDULES
MOTOR VEHICLE CRASH DATA
VEHICLE SPEED DATA
GROWTH RATE DATA
TRIP GENERATION CALCULATIONS
JOURNEY TO WORK DATA
CAPACITY ANALYSIS



TRAFFIC COUNT DATA



Accurate Counts

Location : North Avenue
 Location : South of Willard Street
 City/State: Wakefield, MA

87150001

10/21/2021 Time	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	162			8	166				
12:15	11	146			6	165				
12:30	11	167			7	144				
12:45	7	171	39	646	11	154	32	629	71	1275
1:00	6	158			5	134				
1:15	2	153			2	160				
1:30	5	146			2	132				
1:45	2	162	15	619	2	161	11	587	26	1206
2:00	4	178			1	161				
2:15	4	155			0	153				
2:30	1	147			3	144				
2:45	1	157	10	637	1	169	5	627	15	1264
3:00	1	162			0	180				
3:15	1	159			6	188				
3:30	4	151			3	162				
3:45	3	153	9	625	1	168	10	698	19	1323
4:00	1	170			5	156				
4:15	9	169			9	157				
4:30	7	163			7	151				
4:45	16	155	33	657	24	141	45	605	78	1262
5:00	7	184			31	164				
5:15	20	155			37	158				
5:30	28	181			37	158				
5:45	38	185	93	705	59	150	164	630	257	1335
6:00	54	170			68	133				
6:15	52	143			99	147				
6:30	78	144			99	95				
6:45	106	133	290	590	115	118	381	493	671	1083
7:00	86	132			128	86				
7:15	99	128			159	78				
7:30	100	133			147	77				
7:45	134	103	419	496	180	73	614	314	1033	810
8:00	111	76			144	63				
8:15	151	98			171	54				
8:30	169	82			137	65				
8:45	150	69	581	325	161	63	613	245	1194	570
9:00	145	56			139	60				
9:15	145	62			119	55				
9:30	132	43			133	45				
9:45	138	53	560	214	133	25	524	185	1084	399
10:00	118	38			119	27				
10:15	120	32			141	26				
10:30	113	30			168	27				
10:45	127	26	478	126	143	17	571	97	1049	223
11:00	130	24			142	14				
11:15	119	27			141	12				
11:30	135	22			139	7				
11:45	159	8	543	81	142	14	564	47	1107	128
Total	3070	5721			3534	5157			6604	10878
Percent	34.9%	65.1%			40.7%	59.3%			37.8%	62.2%
Grand Total	3070	5721			3534	5157			6604	10878
Percent	34.9%	65.1%			40.7%	59.3%			37.8%	62.2%

ADT

ADT: 17,482

AADT: 17,482

Accurate Counts

Location : North Avenue
 Location : South of Willard Street
 City/State: Wakefield, MA

87150001

10/21/2021	SB,	NB,	Total
Time			
12:00 AM	39	32	71
1:00	15	11	26
2:00	10	5	15
3:00	9	10	19
4:00	33	45	78
5:00	93	164	257
6:00	290	381	671
7:00	419	614	1033
8:00	581	613	1194
9:00	560	524	1084
10:00	478	571	1049
11:00	543	564	1107
12:00 PM	646	629	1275
1:00	619	587	1206
2:00	637	627	1264
3:00	625	698	1323
4:00	657	605	1262
5:00	705	630	1335
6:00	590	493	1083
7:00	496	314	810
8:00	325	245	570
9:00	214	185	399
10:00	126	97	223
11:00	81	47	128
Total	8791	8691	17482
Percent	50.3%	49.7%	
AM Peak	8:00	7:00	8:00
Volume	581	614	1194
PM Peak	5:00	3:00	5:00
Volume	705	698	1335
Grand Total	8791	8691	17482
Percent	50.3%	49.7%	
ADT		ADT: 17,482	AADT: 17,482

Accurate Counts
978-664-2565

N/S Street : North Ave
E/W Street : Linda Road / Walcott Street
City/State : Wakefield, MA
Weather : Clear

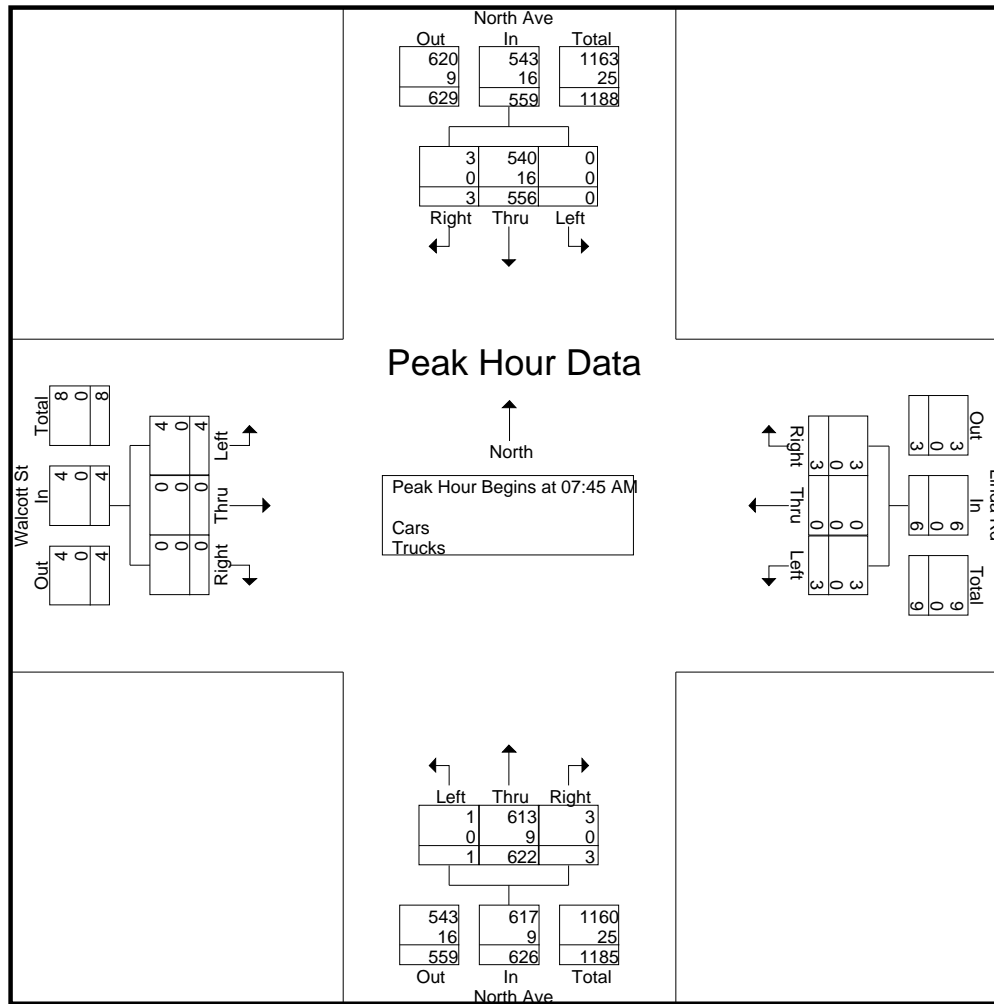
File Name : 87150001
Site Code : 87150001
Start Date : 10/21/2021
Page No : 1

Groups Printed- Cars - Trucks

Start Time	North Ave From North			Linda Rd From East			North Ave From South			Walcott St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	89	0	1	1	1	0	135	0	0	0	2	229
07:15 AM	0	99	0	0	0	2	2	148	1	1	0	3	256
07:30 AM	1	104	0	1	0	1	0	143	1	0	0	1	252
07:45 AM	0	128	1	0	0	1	1	185	0	1	0	0	317
Total	1	420	1	2	1	5	3	611	2	2	0	6	1054
08:00 AM	0	109	1	1	0	0	0	143	1	0	0	0	255
08:15 AM	0	148	0	2	0	1	0	173	1	1	0	0	326
08:30 AM	0	171	1	0	0	1	0	121	1	2	0	0	297
08:45 AM	0	144	1	0	0	1	0	159	0	0	0	0	305
Total	0	572	3	3	0	3	0	596	3	3	0	0	1183
Grand Total	1	992	4	5	1	8	3	1207	5	5	0	6	2237
Apprch %	0.1	99.5	0.4	35.7	7.1	57.1	0.2	99.3	0.4	45.5	0	54.5	
Total %	0	44.3	0.2	0.2	0	0.4	0.1	54	0.2	0.2	0	0.3	
Cars	1	963	4	5	1	8	3	1187	5	5	0	6	2188
% Cars	100	97.1	100	100	100	100	100	98.3	100	100	0	100	97.8
Trucks	0	29	0	0	0	0	0	20	0	0	0	0	49
% Trucks	0	2.9	0	0	0	0	0	1.7	0	0	0	0	2.2

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	128	1	129	0	0	1	1	1	185	0	186	1	0	0	1	317
08:00 AM	0	109	1	110	1	0	0	1	0	143	1	144	0	0	0	0	255
08:15 AM	0	148	0	148	2	0	1	3	0	173	1	174	1	0	0	1	326
08:30 AM	0	171	1	172	0	0	1	1	0	121	1	122	2	0	0	2	297
Total Volume	0	556	3	559	3	0	3	6	1	622	3	626	4	0	0	4	1195
% App. Total	0	99.5	0.5		50	0	50		0.2	99.4	0.5		100	0	0		
PHF	.000	.813	.750	.813	.375	.000	.750	.500	.250	.841	.750	.841	.500	.000	.000	.500	.916
Cars	0	540	3	543	3	0	3	6	1	613	3	617	4	0	0	4	1170
% Cars	0	97.1	100	97.1	100	0	100	100	100	98.6	100	98.6	100	0	0	100	97.9
Trucks	0	16	0	16	0	0	0	0	0	9	0	9	0	0	0	0	25
% Trucks	0	2.9	0	2.9	0	0	0	0	0	1.4	0	1.4	0	0	0	0	2.1

N/S Street : North Ave
E/W Street : Linda Road / Walcott Street
City/State : Wakefield, MA
Weather : Clear



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

	08:00 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	109	1	110	1	1	1	3	0	143	1	144	0	0	2	2
+15 mins.	0	148	0	148	0	0	2	2	1	185	0	186	1	0	3	4
+30 mins.	0	171	1	172	1	0	1	2	0	143	1	144	0	0	1	1
+45 mins.	0	144	1	145	0	0	1	1	0	173	1	174	1	0	0	1
Total Volume	0	572	3	575	2	1	5	8	1	644	3	648	2	0	6	8
% App. Total	0	99.5	0.5		25	12.5	62.5		0.2	99.4	0.5		25	0	75	
PHF	.000	.836	.750	.836	.500	.250	.625	.667	.250	.870	.750	.871	.500	.000	.500	.500
Cars	0	557	3	560	2	1	5	8	1	634	3	638	2	0	6	8
% Cars	0	97.4	100	97.4	100	100	100	100	100	98.4	100	98.5	100	0	100	100
Trucks	0	15	0	15	0	0	0	0	0	10	0	10	0	0	0	0
% Trucks	0	2.6	0	2.6	0	0	0	0	0	1.6	0	1.5	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : North Ave
 E/W Street : Linda Road / Walcott Street
 City/State : Wakefield, MA
 Weather : Clear

File Name : 87150001
 Site Code : 87150001
 Start Date : 10/21/2021
 Page No : 7

Groups Printed- Trucks

Start Time	North Ave From North			Linda Rd From East			North Ave From South			Walcott St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	4	0	0	0	0	0	4	0	0	0	0	8
07:15 AM	0	2	0	0	0	0	0	1	0	0	0	0	3
07:30 AM	0	3	0	0	0	0	0	2	0	0	0	0	5
07:45 AM	0	5	0	0	0	0	0	3	0	0	0	0	8
Total	0	14	0	0	0	0	0	10	0	0	0	0	24
08:00 AM	0	5	0	0	0	0	0	3	0	0	0	0	8
08:15 AM	0	3	0	0	0	0	0	2	0	0	0	0	5
08:30 AM	0	3	0	0	0	0	0	1	0	0	0	0	4
08:45 AM	0	4	0	0	0	0	0	4	0	0	0	0	8
Total	0	15	0	0	0	0	0	10	0	0	0	0	25
Grand Total	0	29	0	0	0	0	0	20	0	0	0	0	49
Apprch %	0	100	0	0	0	0	0	100	0	0	0	0	
Total %	0	59.2	0	0	0	0	0	40.8	0	0	0	0	

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
07:45 AM	0	5	0	5	0	0	0	0	0	3	0	3	0	0	0	0	8
08:00 AM	0	5	0	5	0	0	0	0	0	3	0	3	0	0	0	0	8
08:15 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
Total Volume	0	16	0	16	0	0	0	0	0	10	0	10	0	0	0	0	26
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.800	.000	.800	.000	.000	.000	.000	.000	.833	.000	.833	.000	.000	.000	.000	.813

Accurate Counts

978-664-2565

N/S Street : North Ave
 E/W Street : Linda Road / Walcott Street
 City/State : Wakefield, MA
 Weather : Clear

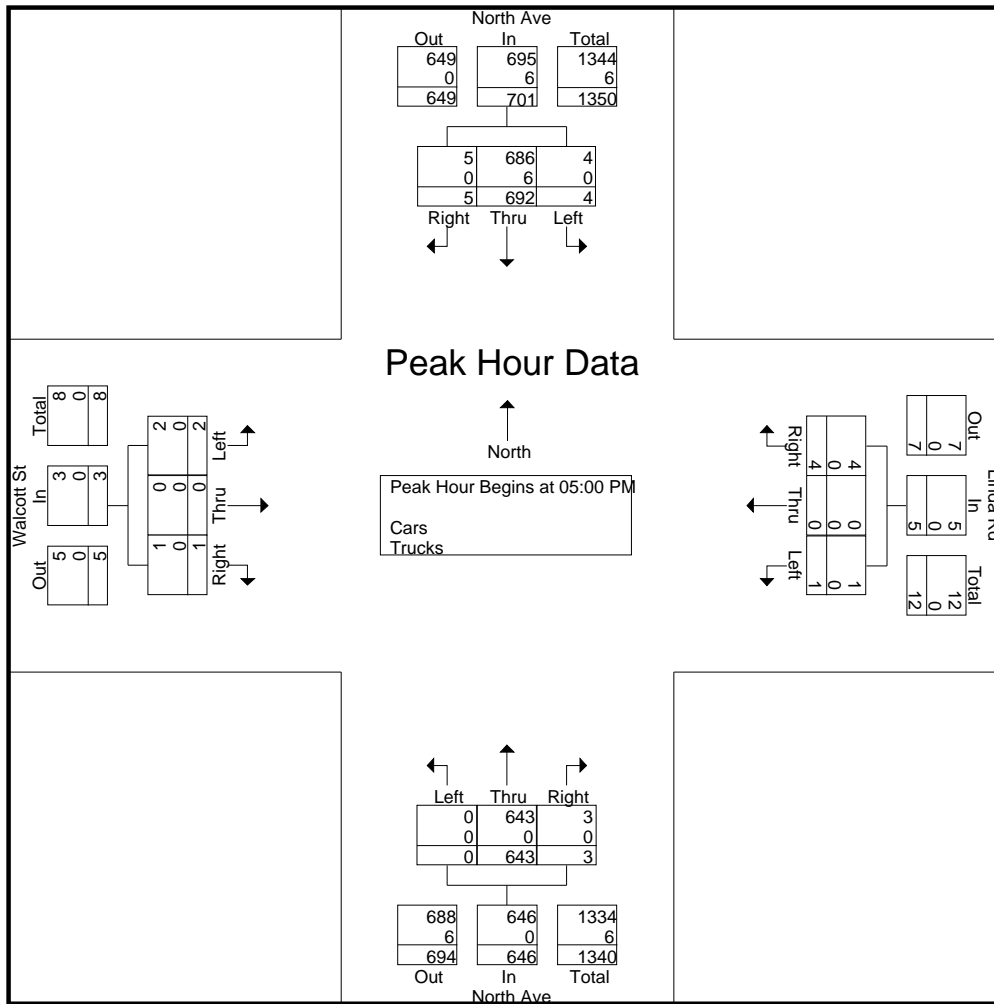
File Name : 87150001
 Site Code : 87150001
 Start Date : 10/21/2021
 Page No : 10

Groups Printed- Bikes Peds

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	13	0	13
07:15 AM	0	1	0	0	0	0	0	12	0	0	0	0	0	0	0	0	12	1	13
07:30 AM	0	0	0	0	0	0	0	8	0	1	0	0	0	0	0	0	8	1	9
07:45 AM	0	1	0	0	0	0	0	16	0	2	0	1	0	0	0	0	17	3	20
Total	0	2	0	0	0	0	0	49	0	3	0	1	0	0	0	0	50	5	55
08:00 AM	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	20	0	20
08:15 AM	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	20	0	20
08:30 AM	0	0	0	0	0	0	0	18	0	1	0	1	0	0	0	0	19	1	20
08:45 AM	0	0	0	0	0	0	0	25	0	2	0	1	0	0	0	0	26	2	28
Total	0	0	0	0	0	0	0	83	0	3	0	2	0	0	0	0	85	3	88
Grand Total	0	2	0	0	0	0	0	132	0	6	0	3	0	0	0	0	135	8	143
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0				
Total %	0	25	0		0	0	0		0	75	0		0	0	0		94.4	5.6	

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
Total Volume	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	0	5
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0			
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.417

N/S Street : North Ave
E/W Street : Linda Road / Walcott Street
City/State : Wakefield, MA
Weather : Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	1	179	2	182	2	0	0	2	0	155	0	155	0	0	1	1
+15 mins.	1	158	0	159	2	0	0	2	0	152	1	153	1	0	0	1
+30 mins.	0	175	1	176	0	0	3	3	0	173	1	174	0	0	0	0
+45 mins.	2	180	2	184	0	0	1	1	0	163	2	165	0	0	1	1
Total Volume	4	692	5	701	4	0	4	8	0	643	4	647	1	0	2	3
% App. Total	0.6	98.7	0.7		50	0	50		0	99.4	0.6		33.3	0	66.7	
PHF	.500	.961	.625	.952	.500	.000	.333	.667	.000	.929	.500	.930	.250	.000	.500	.750
Cars	4	686	5	695	4	0	4	8	0	641	4	645	1	0	2	3
% Cars	100	99.1	100	99.1	100	0	100	100	0	99.7	100	99.7	100	0	100	100
Trucks	0	6	0	6	0	0	0	0	0	2	0	2	0	0	0	0
% Trucks	0	0.9	0	0.9	0	0	0	0	0	0.3	0	0.3	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : North Ave
E/W Street : Linda Road / Walcott Street
City/State : Wakefield, MA
Weather : Clear

File Name : 87150001
Site Code : 87150001
Start Date : 10/21/2021
Page No : 7

Groups Printed- Trucks

Start Time	North Ave From North			Linda Rd From East			North Ave From South			Walcott St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
04:30 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
04:45 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
Total	0	7	0	0	0	0	0	3	0	0	0	0	10
05:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	6	0	0	0	0	0	0	0	0	0	0	6
Grand Total	0	13	0	0	0	0	0	3	0	0	0	0	16
Apprch %	0	100	0	0	0	0	0	100	0	0	0	0	
Total %	0	81.2	0	0	0	0	0	18.8	0	0	0	0	

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:30 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
04:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total Volume	0	7	0	7	0	0	0	0	0	3	0	3	0	0	0	0	10
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.875	.000	.875	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.833

Accurate Counts

978-664-2565

N/S Street : North Ave
 E/W Street : Linda Road / Walcott Street
 City/State : Wakefield, MA
 Weather : Clear

File Name : 87150001
 Site Code : 87150001
 Start Date : 10/21/2021
 Page No : 10

Groups Printed- Bikes Peds

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	1	0	0	0	0	0	29	0	4	0	1	0	0	0	0	30	5	35
04:15 PM	1	0	0	0	0	0	0	27	0	5	0	0	0	0	0	0	27	6	33
04:30 PM	0	1	0	0	1	0	0	20	0	2	0	0	0	0	0	0	20	4	24
04:45 PM	0	0	0	0	0	0	0	37	0	4	0	0	0	0	0	1	38	4	42
Total	1	2	0	0	1	0	0	113	0	15	0	1	0	0	0	1	115	19	134
05:00 PM	0	0	0	0	0	0	0	28	0	2	0	0	0	0	1	0	28	3	31
05:15 PM	0	0	0	0	0	0	0	42	0	4	1	0	0	0	0	0	42	5	47
05:30 PM	0	0	0	0	0	0	0	39	0	9	0	0	0	0	0	0	39	9	48
05:45 PM	0	0	0	0	0	0	0	28	0	7	0	1	0	0	0	0	29	7	36
Total	0	0	0	0	0	0	0	137	0	22	1	1	0	0	1	0	138	24	162
Grand Total	1	2	0	0	1	0	0	250	0	37	1	2	0	0	1	1	253	43	296
Apprch %	33.3	66.7	0		100	0	0		0	97.4	2.6		0	0	100				
Total %	2.3	4.7	0		2.3	0	0		0	86	2.3		0	0	2.3		85.5	14.5	

Start Time	North Ave From North				Linda Rd From East				North Ave From South				Walcott St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	2	0	2	0	0	1	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	9	0	9	0	0	0	0	9
05:45 PM	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	7
Total Volume	0	0	0	0	0	0	0	0	0	22	1	23	0	0	1	1	24
% App. Total	0	0	0	0	0	0	0	0	0	95.7	4.3		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.611	.250	.639	.000	.000	.250	.250	.667

COVID-19 ADJUSTMENT DATA



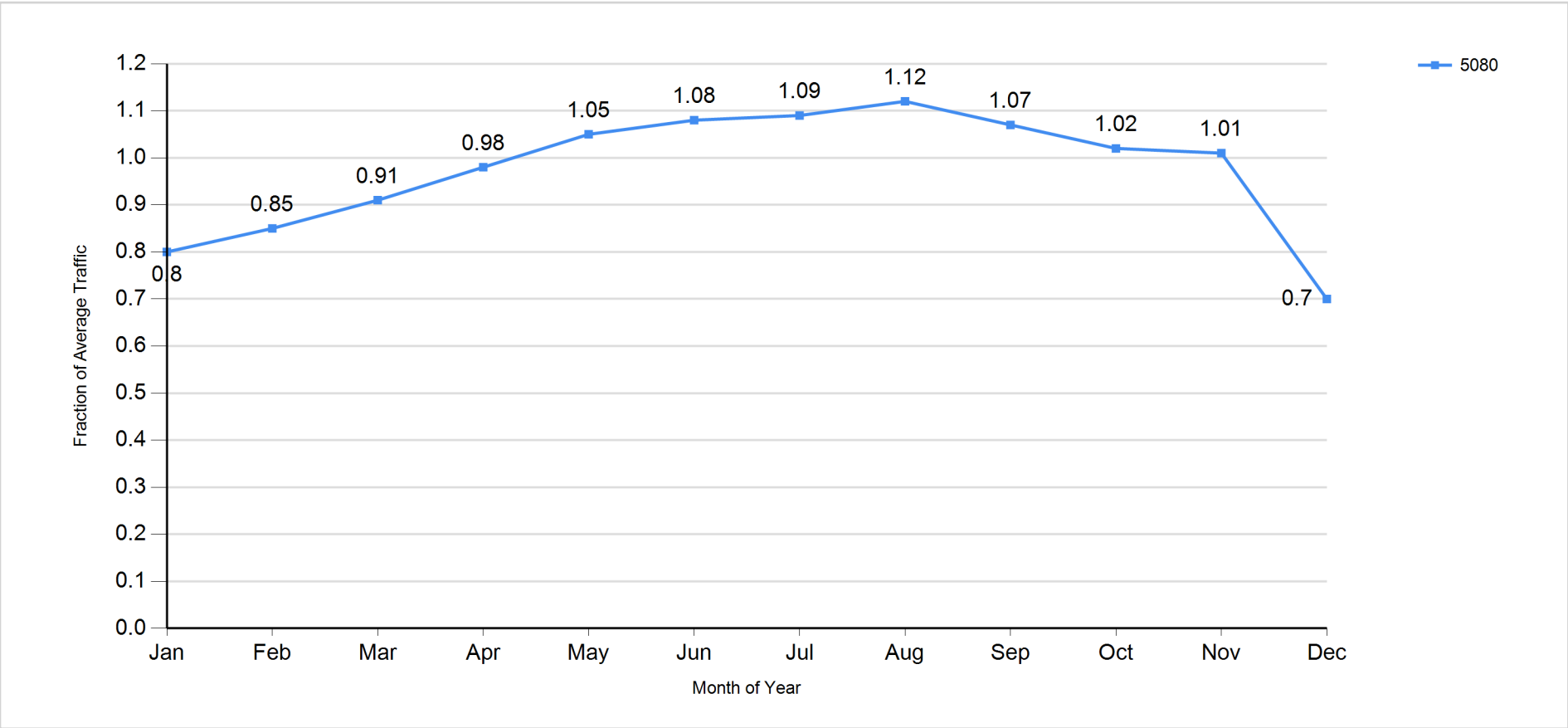
		AM	PM	Daily
October	2019	7842.444	9589.089	146672.2
October	2021	6918.398	9236.613	138400.1
	Change	1.133564	1.038161	1.05977
	Use	1.13	1.04	1.06

SEASONAL ADJUSTMENT DATA





Traffic Pattern by Month for 1/1/2019 - 12/31/2019
Criteria: Location ID = 5080, From 1/1/1900 To 12/31/2049 12:00:00 AM





Massachusetts Highway Department

Traffic Pattern by Month for 1/1/2019 - 12/31/2019
Criteria: Location ID = 5080, From 1/1/1900 To 12/31/2049 12:00:00 AM

Factor Group	Station	Weight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
U1-Essex	5080	0	0.798	0.851	0.914	0.983	1.046	1.083	1.094	1.117	1.068	1.021	1.006	0.700
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

PUBLIC TRANSPORTATION SCHEDULES



Effective Aug 29, 2021

A Schedule Change

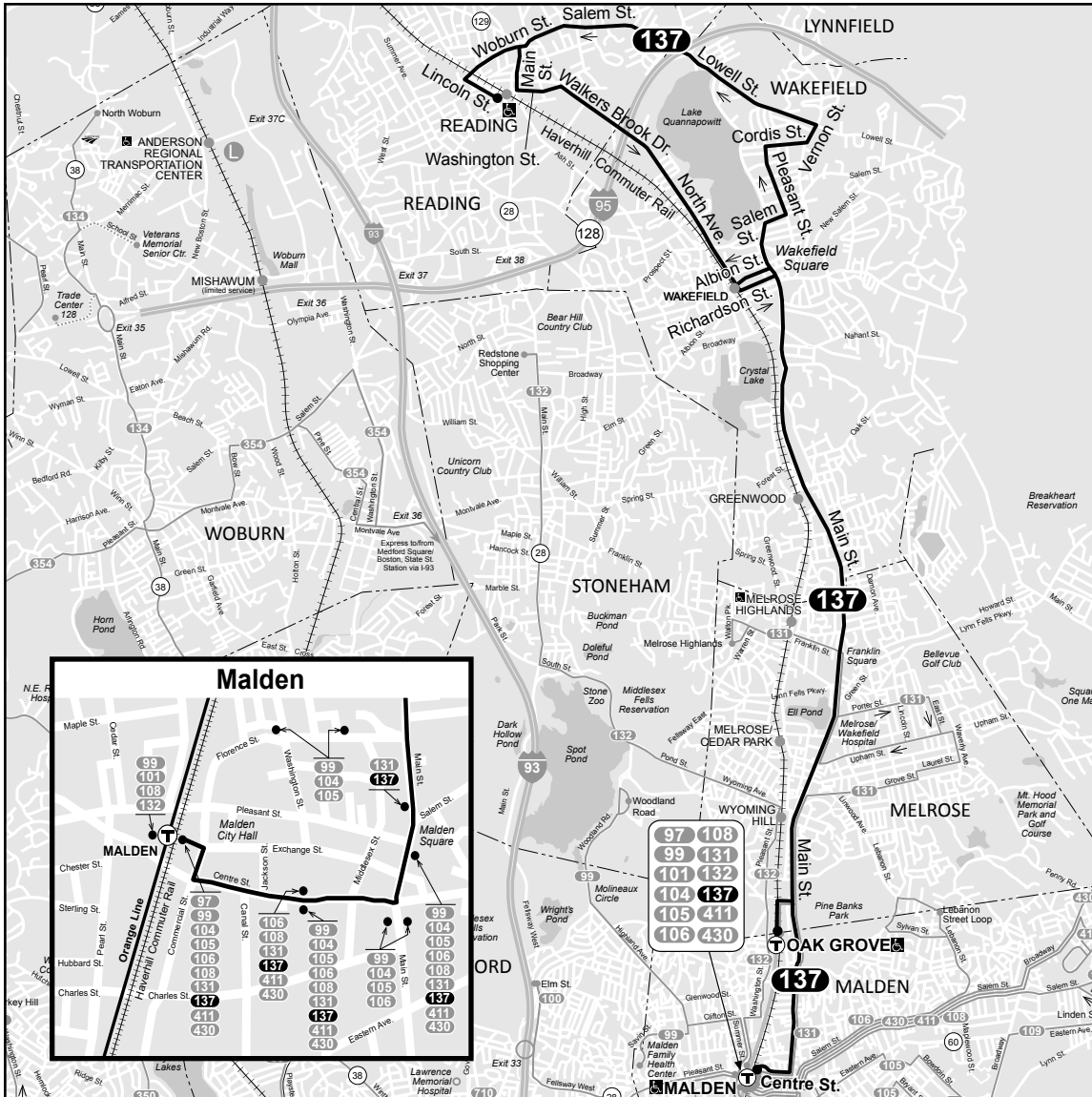
137

Reading Depot - Malden Center Sta



mbta.com
617-222-3200
617-222-5146 (TTY)

Lost & Found
617-222-5607



A Information in this timetable is subject to change without notice. Traffic conditions and weather can affect running time.

137

Weekday

Inbound					Outbound				
Leave Reading Depot	Lv/Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Lv/Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
5:25A	5:35A	5:41A	5:50A	6:00A	4:49A	4:55A	5:01A	5:08A	5:22A
6:05	6:15	6:21	6:30	6:40	5:25	5:32	5:40	5:48	6:02
6:35	6:45	6:51	7:00	.....	.....	6:02	6:10	6:18	6:32
7:00	7:12	7:20	7:30	.....	.....	6:27	6:35	6:43	6:57
7:16	7:28	7:36	7:46	.....	.....	6:59	7:07	7:15	7:29
7:32	7:44	7:52	8:02	.....	.....	7:11	7:19	7:27	7:44
7:48	8:00	8:08	8:18	.....	.....	7:41	7:51	7:59	8:17
8:04	8:14	8:22	8:32	.....	.....	7:57	8:07	8:15	8:33
8:20	8:30	8:38	8:48	.....	.....	8:16	8:26	8:34	8:52
8:36	8:46	8:54	9:04	.....	.....	8:36	8:46	8:54	9:12
8:55	9:06	9:13	9:23	9:33	.....	9:01	9:10	9:19	9:37
9:15	9:27	9:34	9:44	9:54	.....	9:27	9:36	9:45	10:02
9:40	9:52	9:59	10:09	10:19	9:40	9:50	9:59	10:08	10:23
10:05	10:17	10:24	10:34	10:48	10:05	10:15	10:26	10:35	10:50
10:26	10:39	10:46	10:57	11:11	10:30	10:40	10:51	11:00	11:15
10:53	11:06	11:13	11:24	11:38	10:55	11:05	11:16	11:25	11:42
11:18	11:31	11:38	11:49	12:03P	11:20	11:30	11:41	11:50	12:08P
11:45	11:58	12:05P	12:16P	12:30	11:45	11:53	12:04P	12:13P	12:31
12:11P	12:24P	12:31	12:42	12:56	12:10P	12:18P	12:29	12:38	12:56
12:34	12:47	12:54	1:06	1:17	12:35	12:43	12:54	1:03	1:19
12:59	1:14	1:20	1:31	1:42	1:00	1:10	1:22	1:32	1:48
1:22	1:37	1:43	1:54	2:06	1:25	1:35	1:47	1:57	2:12
1:50	2:04	2:13	2:23	2:36	1:50	2:00	2:11	2:21	2:36
2:16	2:29	2:38	2:48	3:01	s 2:10	2:19	2:30	2:40	.....
.....	s 2:45	2:54	3:04	3:17	2:15	2:24	2:35	2:45	3:00
2:39	2:52	3:01	3:11	3:24	2:40	2:49	3:00	3:10	3:25
3:03	3:16	3:25	3:35	3:48	3:05	3:14	3:25	3:35	3:50
3:28	3:41	3:50	4:00	.....	.....	3:23	3:34	3:44	3:59
3:53	4:06	4:15	4:25	4:38	3:30	3:39	3:50	4:00	4:15
4:02	4:15	4:24	4:33	.....	.....	4:00	4:12	4:22	4:37
4:22	4:35	4:41	4:52	.....	.....	4:20	4:32	4:42	4:57
4:40	4:54	5:00	5:11	.....	.....	4:37	4:49	4:59	5:14
5:00	5:14	5:20	5:31	.....	.....	4:53	5:05	5:15	5:30
5:17	5:31	5:37	5:48	.....	.....	5:09	5:21	5:31	5:46
5:33	5:47	5:53	6:04	.....	.....	5:25	5:37	5:47	6:02
5:49	6:02	6:08	6:18	.....	.....	5:41	5:53	6:02	6:16
6:05	6:17	6:23	6:33	.....	.....	5:57	6:06	6:15	6:29
6:19	6:31	6:37	6:47	.....	.....	6:13	6:22	6:31	6:45
6:32	6:44	6:50	7:00	.....	.....	6:29	6:38	6:47	7:01
6:48	7:00	7:06	7:16	.....	.....	6:45	6:54	7:03	7:17
7:04	7:16	7:22	7:31	.....	.....	7:05	7:14	7:23	7:37
7:20	7:31	7:37	7:46	7:57	7:30	7:40	7:49	7:58	8:12
7:40	7:49	7:55	8:04	8:15	8:10	8:20	8:29	8:38	8:52
8:15	8:24	8:30	8:39	8:50	8:55	9:05	9:14	9:23	9:37
8:55	9:04	9:10	9:19	9:30	9:40	9:50	9:59	10:08	10:22
9:40	9:49	9:55	10:04	10:15					
10:25	10:34	10:40	10:49	11:00					

137

Saturday

Inbound					Outbound				
Leave Reading Depot	Lv/Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
6:00A	6:10A	6:17A	6:25A	6:36A	6:00A	6:08A	6:16A	6:23A	6:38A
6:41	6:51	6:58	7:06	7:17	6:40	6:48	6:56	7:03	7:18
7:21	7:31	7:38	7:46	7:57	7:25	7:33	7:41	7:48	8:03
8:06	8:16	8:23	8:31	8:42	8:05	8:13	8:23	8:31	8:46
8:49	8:59	9:06	9:16	9:27	8:50	8:58	9:09	9:18	9:33
9:36	9:48	9:55	10:07	10:18	9:35	9:43	9:54	10:03	10:18
10:21	10:34	10:42	10:55	11:07	10:30	10:38	10:49	10:58	11:14
11:17	11:31	11:39	11:50	12:02P	11:15	11:24	11:38	11:50	12:06P
12:09P	12:23P	12:31P	12:42P	12:54	12:10P	12:19P	12:30P	12:41P	12:56
12:59	1:13	1:21	1:32	1:44	1:00	1:09	1:20	1:31	1:46
1:49	2:03	2:12	2:23	2:34	1:50	1:59	2:10	2:21	2:36
2:39	2:53	3:01	3:11	3:22	2:40	2:49	3:00	3:11	3:26
3:29	3:42	3:50	4:00	4:11	3:30	3:39	3:50	4:00	4:15
4:18	4:30	4:37	4:47	4:58	4:20	4:29	4:40	4:50	5:05
5:08	5:20	5:27	5:37	5:48	5:05	5:15	5:26	5:34	5:49
5:52	6:04	6:11	6:21	6:32	5:55	6:05	6:16	6:24	6:39
6:42	6:54	7:01	7:11	7:22	6:45	6:55	7:06	7:14	7:29
7:32	7:44	7:51	8:01	8:12	8:30	8:38	8:46	8:53	.....
.....	9:00	9:07	9:17	9:28					

137

Sunday

Inbound					Outbound				
Leave Reading Depot	Arrive Wakefield Square	Arrive Franklin Square	Arrive Oak Grove Station	Arrive Malden Station	Leave Malden Station	Arrive Oak Grove Station	Arrive Franklin Square	Arrive Wakefield Square	Arrive Reading Depot
8:00A	8:11A	8:17A	8:25A	8:36A	8:40A	8:49A	8:57A	9:05A	9:19A
9:22	9:34	9:40	9:50	10:01	10:10	10:19	10:28	10:36	10:50
10:53	11:05	11:11	11:21	11:34	11:40	11:50	11:58	12:07P	12:21P
12:24P	12:36P	12:44P	12:54P	1:06P	1:20P	1:29P	1:39P	1:47	2:01
2:04	2:16	2:23	2:32	2:44	2:55	3:05	3:15	3:23	3:37
3:40	3:51	3:58	4:06	4:17	4:25	4:34	4:44	4:52	5:06
5:09	5:20	5:27	5:35	5:46					

Holidays Fall 2021/Winter 2022

Saturday
Christmas Eve; NY Eve; MLK Day; President's Day

Sunday
Labor Day; Thanksgiving; Christmas Day; NY Day

All MBTA buses 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.

MOTOR VEHICLE CRASH DATA



MassDOT Crash Report for North Avenue at Wolcott Street/Linda Road in Wakefield MA 2014-2018

Crash Date	Crash Severity	Crash Time	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Vehicle Sequence of Events (All Vehicles)	Street Number	Roadway
01/07/2015	Property damage only (none injured)	7:07 AM	2	D1: (Failed to yield right of way) / D2: (Other improper action)	Dawn	Angle	Dry	V1: Turning left / V2: Travelling straight ahead	V1: W / V2: N	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		NORTH AVE / LINDA RD
06/20/2015	Property damage only (none injured)	1:37 PM	2	D1: (Failed to yield right of way) / D2: (No improper driving),(No improper driving)	Daylight	Angle	Dry	V1: Entering traffic lane / V2: Travelling straight ahead	V1: W / V2: N	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		NORTH AVE / LINDA RD
08/30/2015	Non-fatal injury	12:39 PM	2	D1: (Disregarded traffic signs, signals, road markings) / D2: (No improper driving)	Daylight	Angle	Dry	V1: Entering traffic lane / V2: Travelling straight ahead	V1: E / V2: S	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		NORTH AVE / WOLCOTT ST
04/09/2018	Non-fatal injury	3:19 PM	2	D1: (No improper driving) / D2: (No improper driving)	Daylight	Rear-end	Dry	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: W / V2: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		NORTH AVE / LINDA RD
12/12/2018	Property damage only (none injured)	7:53 AM	2	D1: (No improper driving) / D2: (No improper driving)	Daylight	Angle	Dry	V1: Turning left / V2: Travelling straight ahead	V1: E / V2: S	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		NORTH AVE / WOLCOTT ST

MassHighway

C+A2:L45RASH RATE WORKSHEET

CITY/TOWN : Wakefield COUNT DATE : 2021

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : North Avenue

ST #

MINOR STREET(S) : Wolcott Street

ST #

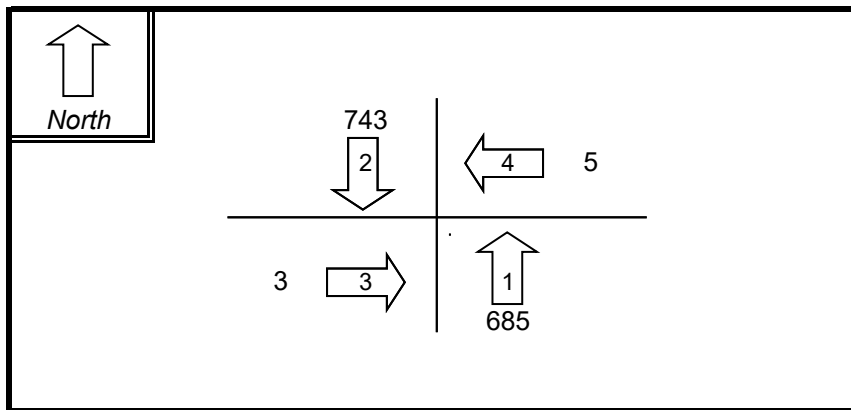
Linda Road

ST #

ST #

ST #

**INTERSECTION
DIAGRAM
(Label Approaches)**



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :	685	743	3	5		1,436

" K " FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : Accident Rate for District 4 signalized intersections = 0.73
Accident Rate for District 4 unsignalized intersections = 0.57

VEHICLE SPEED DATA



Accurate Counts

Location : North Avenue
 Location : South of Willard Street
 City/State: Wakefield, MA
 Direction: SB,

87150001

10/21/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	1	5	15	14	3	0	1	0	0	0	0	39
1:00	0	0	0	3	6	5	1	0	0	0	0	0	0	15
2:00	0	0	0	2	5	3	0	0	0	0	0	0	0	10
3:00	0	1	0	1	3	2	2	0	0	0	0	0	0	9
4:00	1	0	1	5	17	6	2	1	0	0	0	0	0	33
5:00	0	0	5	17	37	28	6	0	0	0	0	0	0	93
6:00	0	1	10	59	134	74	11	1	0	0	0	0	0	290
7:00	0	2	5	75	194	123	16	3	1	0	0	0	0	419
8:00	7	16	23	142	265	104	24	0	0	0	0	0	0	581
9:00	0	1	28	152	260	107	10	2	0	0	0	0	0	560
10:00	1	1	25	145	206	87	13	0	0	0	0	0	0	478
11:00	0	7	29	203	227	68	6	1	2	0	0	0	0	543
12:00 PM	0	4	44	217	281	91	9	0	0	0	0	0	0	646
1:00	2	7	45	209	270	77	9	0	0	0	0	0	0	619
2:00	1	9	60	246	246	62	11	2	0	0	0	0	0	637
3:00	0	5	33	230	266	78	12	0	0	0	0	0	1	625
4:00	1	1	48	235	273	91	8	0	0	0	0	0	0	657
5:00	24	14	66	255	267	66	8	2	1	2	0	0	0	705
6:00	6	18	49	212	247	53	4	1	0	0	0	0	0	590
7:00	0	1	13	160	235	77	10	0	0	0	0	0	0	496
8:00	0	0	9	95	152	59	8	2	0	0	0	0	0	325
9:00	0	0	9	44	97	52	9	3	0	0	0	0	0	214
10:00	0	1	2	30	54	32	2	4	1	0	0	0	0	126
11:00	0	1	2	13	39	22	3	0	1	0	0	0	0	81
Total	43	90	507	2755	3796	1381	187	22	7	2	0	0	1	8791
Grand Total	43	90	507	2755	3796	1381	187	22	7	2	0	0	1	8791

Stats	Percentile	15th	50th	85th	95th
Speed		27.2	31	35.3	37.8
Mean Speed (Average)		31.2			
10 MPH Pace Speed		25-34			
Number in Pace		6485			
Percent in Pace		73.8%			
Number > 30 MPH		5396			
Percent > 30 MPH		61.4%			

Location : North Avenue
 Location : South of Willard Street
 City/State: Wakefield, MA
 Direction: NB,

87150001

10/21/2021	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	2	6	2	6	7	5	2	0	0	0	2	0	32
1:00	0	0	1	1	3	5	1	0	0	0	0	0	0	11
2:00	0	0	0	0	2	2	0	1	0	0	0	0	0	5
3:00	0	1	1	0	4	3	1	0	0	0	0	0	0	10
4:00	0	0	0	5	19	18	2	1	0	0	0	0	0	45
5:00	0	0	1	12	72	61	15	3	0	0	0	0	0	164
6:00	0	0	3	67	167	122	20	2	0	0	0	0	0	381
7:00	3	1	8	97	342	146	13	3	0	0	0	1	0	614
8:00	1	5	14	95	338	135	23	1	0	1	0	0	0	613
9:00	1	5	14	97	274	125	6	0	0	0	2	0	0	524
10:00	0	5	14	139	281	110	20	1	0	0	1	0	0	571
11:00	2	10	21	124	278	112	16	1	0	0	0	0	0	564
12:00 PM	1	7	19	179	315	95	12	0	0	0	0	1	0	629
1:00	2	7	43	133	283	109	10	0	0	0	0	0	0	587
2:00	2	7	45	192	283	90	7	1	0	0	0	0	0	627
3:00	3	4	32	201	340	108	9	1	0	0	0	0	0	698
4:00	1	1	20	137	316	124	6	0	0	0	0	0	0	605
5:00	1	4	38	137	363	76	10	0	1	0	0	0	0	630
6:00	1	5	23	140	252	64	7	0	0	0	1	0	0	493
7:00	0	2	4	47	171	77	13	0	0	0	0	0	0	314
8:00	0	2	1	35	104	84	13	5	0	0	1	0	0	245
9:00	0	0	5	25	67	63	19	4	2	0	0	0	0	185
10:00	0	0	1	7	34	37	16	2	0	0	0	0	0	97
11:00	0	0	0	2	11	19	14	0	1	0	0	0	0	47
Total	18	68	314	1874	4325	1792	258	28	4	1	5	4	0	8691
Grand Total	18	68	314	1874	4325	1792	258	28	4	1	5	4	0	8691

Stats	Percentile	15th	50th	85th	95th
Speed		28.5	32.2	35.9	39
Mean Speed (Average)		32.4			
10 MPH Pace Speed		26-35			
Number in Pace		6184			
Percent in Pace		71.2%			
Number > 30 MPH		6417			
Percent > 30 MPH		73.8%			

GROWTH RATE DATA



Massachusetts Highway Department

4125: Annual Growth Rate 2011-2017

Location ID:	4125	Seasonal Factor Group:	U3
County:	Middlesex	Daily Factor Group:	
Functional Class	3 - Other Principal Arterial	Axle Factor Group:	U3
Location:	Main Street at Melrose City Line	Growth Factor Group:	U3

Year	AADT
2017	13207
2011	12841

A = 2017/2011	1.0285
B = A^(1/6)	1.0047

Average Annual Growth Rate	0.47
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Massachusetts Highway Department

4122: Annual Growth Rate 2011-2016

Location ID:	4122	Seasonal Factor Group:	U3
County:	Middlesex	Daily Factor Group:	
Functional Class	3 - Other Principal Arterial	Axle Factor Group:	U3
Location:	Lynn Fells Parkway at Saugus Town Line	Growth Factor Group:	U3

Year	AADT
2016	12976
2011	11992

A = 2016/2011	1.0821
B = A ^(1/5)	1.0159

Average Annual Growth Rate	1.59
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Massachusetts Highway Department

4848: Annual Growth Rate 2012-2018

Location ID:	4848	Seasonal Factor Group:	U3
County:	Middlesex	Daily Factor Group:	
Functional Class	3 - Other Principal Arterial	Axle Factor Group:	U3
Location:	Main Street north of Minot Street	Growth Factor Group:	U3

Year	AADT
2018	15214
2012	14788

A = 2018/2012	1.0288
B = A ^(1/6)	1.0047

Average Annual Growth Rate	0.47
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Station	Percent Change
4125	0.47
4122	1.59
4848	0.47
Average	0.84

TRIP GENERATION CALCULATIONS



Institute of Transportation Engineers (ITE)
Trip Generation, 11 th Edition
Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise) Not Close

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 38

AVERAGE WEEKDAY DAILY

$T = 4.54 * (X)$
 $T = 4.54 * 38$
 $T = 172.52$
 $T = 172.00$
 $T = 172$ vehicle trips
with 50% (86 vpd) entering and 50% (86 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.37 * (X)$
 $T = 0.37 * 38$
 $T = 14.06$
 $T = 14$ vehicle trips
with 23% (3 vph) entering and 77% (11 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.39 * (X)$
 $T = 0.39 * 38$
 $T = 14.82$
 $T = 15.00$
 $T = 15$ vehicle trips
with 61% (9 vph) entering and 39% (6 vph) exiting.

JOURNEY TO WORK DATA



Journey to Work: Exiting Traffic			
Town/City/County	Percent	North Avenue North	North Avenue South
Andover town	1.55	1.55	
Beverly city	1.79	1.79	
Danvers town	1.76	1.76	
Lynnfield town	1.09	1.09	
Peabody city	1.54	1.54	
Salem city	1.25	1.25	
Saugus town	1.61		1.61
Bedford town	1.19	1.19	
Burlington town	3.27	3.27	
Cambridge city	4.88	4.88	
Everett city	1.22		1.22
Lexington town	1.19	1.19	
Malden city	1.41		1.41
Medford city	1.71		1.71
Melrose city	2.55		2.55
Newton city	1.36	1.36	
Reading town	4.46	4.46	
Somerville city	1.44	1.44	
Stoneham town	1.47		1.47
Wakefield town	17.45	1.75	15.71
Waltham city	2.59	2.59	
Wilmington town	1.74	1.74	
Winchester town	1.18		1.18
Woburn city	5.83		5.83
Boston city	19.69	19.69	
Chelsea city	1.14		1.14
Barnstable County	0.16	0.16	
Bristol County	0.11	0.11	
Essex County	3.28	3.28	
Middlesex County	7.65	7.65	
Norfolk County	1.55	1.55	
Plymouth County	0.13	0.13	
Suffolk County	0.69	0.69	
Worcester County	0.04	0.04	
TOTAL	100.00	66.16	33.84
USE	100	65	35

Journey to Work: Entering Traffic			
Town/City/County	Percent	North Avenue North	North Avenue South
Andover town	1.55	1.55	
Beverly city	1.79	1.79	
Danvers town	1.76	1.76	
Lynnfield town	1.09	1.09	
Peabody city	1.54	1.54	
Salem city	1.25	1.25	
Saugus town	1.61		1.61
Bedford town	1.19	1.19	
Burlington town	3.27	3.27	
Cambridge city	4.88	4.88	
Everett city	1.22		1.22
Lexington town	1.19	1.19	
Malden city	1.41		1.41
Medford city	1.71		1.71
Melrose city	2.55		2.55
Newton city	1.36	1.36	
Reading town	4.46	4.46	
Somerville city	1.44	1.44	
Stoneham town	1.47		1.47
Wakefield town	17.45	1.75	15.71
Waltham city	2.59	2.59	
Wilmington town	1.74	1.74	
Winchester town	1.18		1.18
Woburn city	5.83		5.83
Boston city	19.69	19.69	
Chelsea city	1.14		1.14
Barnstable County	0.16	0.16	
Bristol County	0.11	0.11	
Essex County	3.28	3.28	
Middlesex County	7.65	7.65	
Norfolk County	1.55	1.55	
Plymouth County	0.13	0.13	
Suffolk County	0.69	0.69	
Worcester County	0.04	0.04	
TOTAL	100.00	66.16	33.84
USE	100	65	35

CAPACITY ANALYSIS

2021 Baseline Weekday Morning Peak Hour
2021 Baseline Weekday Evening Peak Hour
2028 No-Build Weekday Morning Peak Hour
2028 No-Build Weekday Evening Peak Hour
2028 Build Weekday Morning Peak Hour
2028 Build Weekday Evening Peak Hour



2021 Baseline Weekday Morning Peak Hour



Intersection												
Int Delay, s/veh	0.7											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	641	3	1	717	3	4	0	0	3	0	3
Future Vol, veh/h	0	641	3	1	717	3	4	0	0	3	0	3
Conflicting Peds, #/hr	74	0	0	2	0	76	0	0	2	76	0	74
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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	84	84	84	50	50	50	50	50	50
Heavy Vehicles, %	0	3	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	791	4	1	854	4	8	0	0	6	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	934	0	0	797	0	0	1730	1731	871	1803	1731	1006
Stage 1	-	-	-	-	-	-	795	795	-	934	934	-
Stage 2	-	-	-	-	-	-	935	936	-	869	797	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	741	-	-	834	-	-	70	89	353	62	89	295
Stage 1	-	-	-	-	-	-	384	402	-	322	347	-
Stage 2	-	-	-	-	-	-	321	346	-	349	401	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	692	-	-	833	-	-	62	83	325	53	83	251
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	83	-	53	83	-
Stage 1	-	-	-	-	-	-	383	401	-	301	323	-
Stage 2	-	-	-	-	-	-	285	322	-	322	400	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0	0	71.5	52.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	62	833	-	-	692	-	88
HCM Lane V/C Ratio	0.129	0.001	-	-	-	-	0.136
HCM Control Delay (s)	71.5	9.3	0	-	0	-	52.3
HCM Lane LOS	F	A	A	-	A	-	F
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	0.5

2021 Baseline Weekday Evening Peak Hour



Intersection												
Int Delay, s/veh	0.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	734	5	0	682	3	2	0	1	1	0	4
Future Vol, veh/h	4	734	5	0	682	3	2	0	1	1	0	4
Conflicting Peds, #/hr	137	0	0	1	0	138	0	0	1	138	0	137
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	75	75	75	63	63	63
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	773	5	0	733	3	3	0	1	2	0	6

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	874	0	0	779	0	0	1660	1659	915	1795	1660	1010
Stage 1	-	-	-	-	-	-	785	785	-	873	873	-
Stage 2	-	-	-	-	-	-	875	874	-	922	787	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	781	-	-	847	-	-	78	99	333	63	98	294
Stage 1	-	-	-	-	-	-	389	407	-	348	370	-
Stage 2	-	-	-	-	-	-	347	370	-	327	406	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	687	-	-	846	-	-	63	86	285	47	85	216
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	86	-	47	85	-
Stage 1	-	-	-	-	-	-	385	403	-	303	326	-
Stage 2	-	-	-	-	-	-	282	326	-	276	402	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	49.4	35.5
HCM LOS			E	E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	85	846	-	-	687	-	126
HCM Lane V/C Ratio	0.047	-	-	-	0.006	-	0.063
HCM Control Delay (s)	49.4	0	-	-	10.3	0	35.5
HCM Lane LOS	E	A	-	-	B	A	E
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	0.2

2028 No-Build Weekday Morning Peak Hour



Intersection												
Int Delay, s/veh	0.9											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	716	3	1	791	3	4	0	0	3	0	3
Future Vol, veh/h	0	716	3	1	791	3	4	0	0	3	0	3
Conflicting Peds, #/hr	74	0	0	2	0	76	0	0	2	76	0	74
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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	84	84	84	50	50	50	50	50	50
Heavy Vehicles, %	0	3	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	884	4	1	942	4	8	0	0	6	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1022	0	0	890	0	0	1911	1912	964	1984	1912	1094
Stage 1	-	-	-	-	-	-	888	888	-	1022	1022	-
Stage 2	-	-	-	-	-	-	1023	1024	-	962	890	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	687	-	-	770	-	-	52	69	312	46	69	263
Stage 1	-	-	-	-	-	-	341	365	-	287	316	-
Stage 2	-	-	-	-	-	-	287	315	-	310	364	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	641	-	-	769	-	-	46	64	287	39	64	224
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	64	-	39	64	-
Stage 1	-	-	-	-	-	-	340	364	-	268	294	-
Stage 2	-	-	-	-	-	-	254	293	-	286	363	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0	0	99.1	71.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	46	769	-	-	641	-	66
HCM Lane V/C Ratio	0.174	0.002	-	-	-	-	0.182
HCM Control Delay (s)	99.1	9.7	0	-	0	-	71.3
HCM Lane LOS	F	A	A	-	A	-	F
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	0.6

2028 No-Build Weekday Evening Peak Hour



Intersection												
Int Delay, s/veh	0.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	815	5	0	782	3	2	0	1	1	0	4
Future Vol, veh/h	4	815	5	0	782	3	2	0	1	1	0	4
Conflicting Peds, #/hr	137	0	0	1	0	138	0	0	1	138	0	137
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	75	75	75	63	63	63
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	858	5	0	841	3	3	0	1	2	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	982	0	0	864	0	0	1853	1852	1000	1988	1853	1118
Stage 1	-	-	-	-	-	-	870	870	-	981	981	-
Stage 2	-	-	-	-	-	-	983	982	-	1007	872	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	711	-	-	787	-	-	57	75	298	46	75	254
Stage 1	-	-	-	-	-	-	349	372	-	303	330	-
Stage 2	-	-	-	-	-	-	302	330	-	293	371	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	625	-	-	786	-	-	46	65	255	34	65	187
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	65	-	34	65	-
Stage 1	-	-	-	-	-	-	344	367	-	263	290	-
Stage 2	-	-	-	-	-	-	244	290	-	247	366	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	66	44.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	63	786	-	-	625	-	98
HCM Lane V/C Ratio	0.063	-	-	-	0.007	-	0.081
HCM Control Delay (s)	66	0	-	-	10.8	0	44.9
HCM Lane LOS	F	A	-	-	B	A	E
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	0.3

2028 Build Weekday Morning Peak Hour



Intersection												
Int Delay, s/veh	0.9											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	720	3	1	792	3	4	0	0	3	0	3
Future Vol, veh/h	0	720	3	1	792	3	4	0	0	3	0	3
Conflicting Peds, #/hr	74	0	0	2	0	76	0	0	2	76	0	74
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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	84	84	84	50	50	50	50	50	50
Heavy Vehicles, %	0	3	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	889	4	1	943	4	8	0	0	6	0	6

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1023	0	0	895
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	686	-	-	767
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	640	-	-	766
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0	0	99.1	71.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	46	766	-	-	640	-	66
HCM Lane V/C Ratio	0.174	0.002	-	-	-	-	0.182
HCM Control Delay (s)	99.1	9.7	0	-	0	-	71.3
HCM Lane LOS	F	A	A	-	A	-	F
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	0.6

Intersection						
Int Delay, s/veh	0.3					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	719	2	1	798	7	4
Future Vol, veh/h	719	2	1	798	7	4
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	81	81	84	84	92	92
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	888	2	1	950	8	4

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	890	0	1841 889
Stage 1	-	-	-	-	889 -
Stage 2	-	-	-	-	952 -
Critical Hdwy	-	-	4.1	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	770	-	84 345
Stage 1	-	-	-	-	405 -
Stage 2	-	-	-	-	378 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	770	-	84 345
Mov Cap-2 Maneuver	-	-	-	-	84 -
Stage 1	-	-	-	-	405 -
Stage 2	-	-	-	-	377 -

Approach	SE	NW	NE
HCM Control Delay, s	0	0	39.6
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	116	770	-	-	-
HCM Lane V/C Ratio	0.103	0.002	-	-	-
HCM Control Delay (s)	39.6	9.7	0	-	-
HCM Lane LOS	E	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

2028 Build Weekday Evening Peak Hour



Intersection												
Int Delay, s/veh	0.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	817	5	0	785	3	2	0	1	1	0	4
Future Vol, veh/h	4	817	5	0	785	3	2	0	1	1	0	4
Conflicting Peds, #/hr	137	0	0	1	0	138	0	0	1	138	0	137
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	93	93	93	75	75	75	63	63	63
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	860	5	0	844	3	3	0	1	2	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	985	0	0	866	0	0	1858	1857	1002	1993	1858	1121
Stage 1	-	-	-	-	-	-	872	872	-	984	984	-
Stage 2	-	-	-	-	-	-	986	985	-	1009	874	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	709	-	-	786	-	-	57	74	297	46	74	253
Stage 1	-	-	-	-	-	-	348	371	-	302	329	-
Stage 2	-	-	-	-	-	-	301	329	-	292	370	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	624	-	-	785	-	-	46	64	254	34	64	186
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	64	-	34	64	-
Stage 1	-	-	-	-	-	-	343	366	-	262	290	-
Stage 2	-	-	-	-	-	-	243	290	-	246	365	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	66	44.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	63	785	-	-	624	-	98
HCM Lane V/C Ratio	0.063	-	-	-	0.007	-	0.081
HCM Control Delay (s)	66	0	-	-	10.8	0	44.9
HCM Lane LOS	F	A	-	-	B	A	E
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	0.3

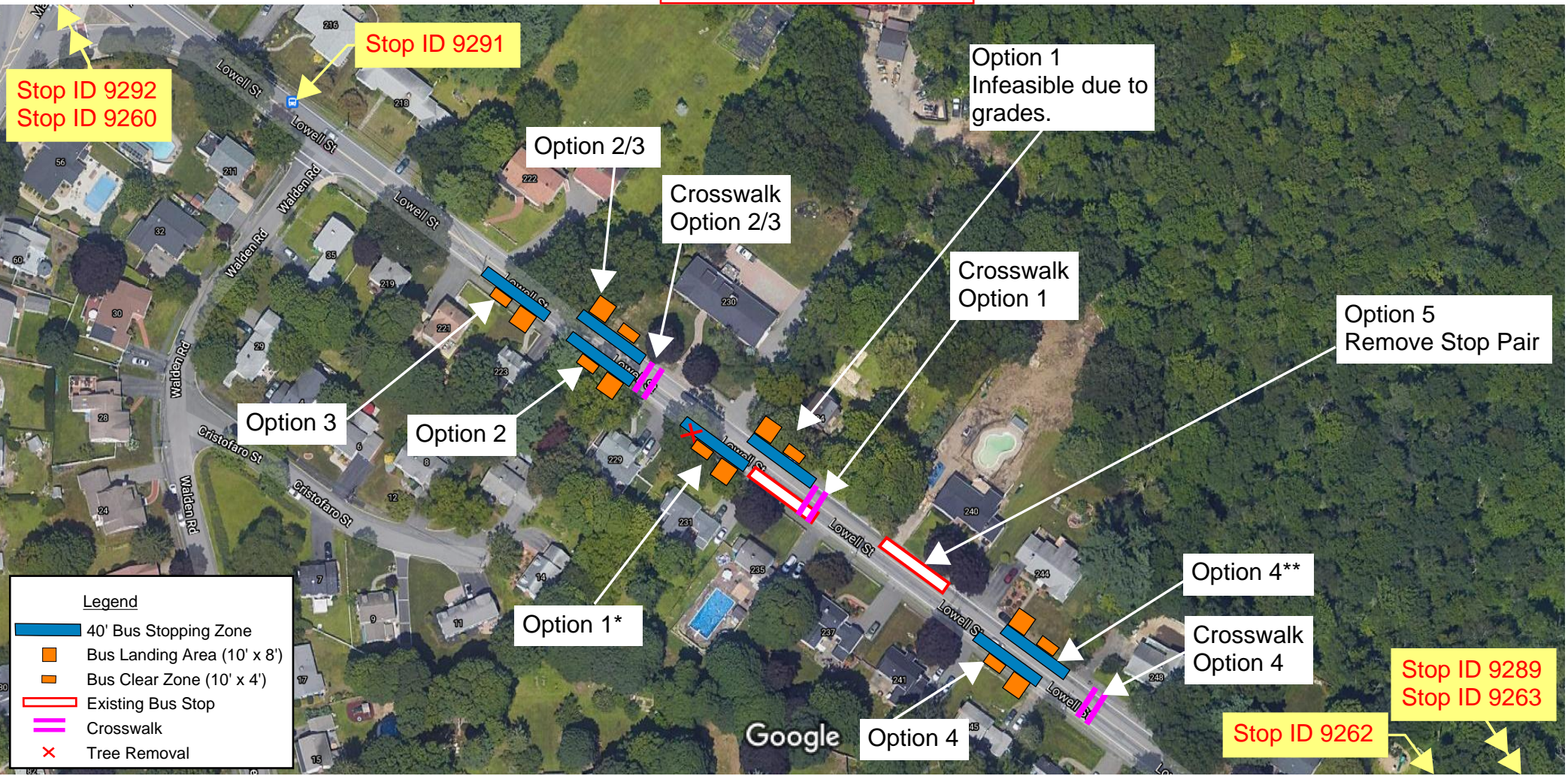
Intersection						
Int Delay, s/veh	0.1					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	824	6	3	788	4	2
Future Vol, veh/h	824	6	3	788	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	93	93	92	92
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	867	6	3	847	4	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	873	0	1723	870
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	853	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	781	-	99	354
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	781	-	98	354
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	418	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	34.4
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	129	781	-	-	-
HCM Lane V/C Ratio	0.051	0.004	-	-	-
HCM Control Delay (s)	34.4	9.6	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

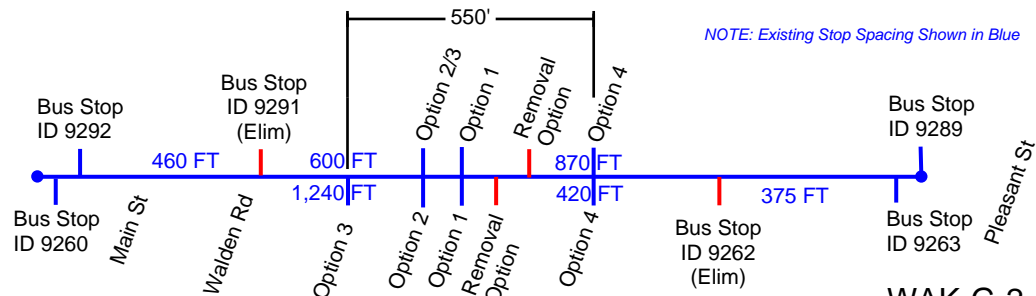
DRAFT
FOR DISCUSSION
PURPOSES ONLY



Notes:

- * May require tree removal, due to pinch point < 3'
- ** 244 Lowell St has one of the most limited driveway capacities on the north side of Lowell St. Observations indicate the edge of roadway pull off parking area is used often.

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February 10, 2022

WAK-G-2
Lowell St @/Opp 237 Lowell St Bus Stop IDs 9261 & 92901
Bus Stop Relocation Alternatives