TECHNICAL MEMORANDUM

REF: NEX-2200417.00

DATE: November 30, 2022

TO: Ms. Richard Pomroy
Pomroy Associates, LLC
P.O. Box 445
East Bridgewater, MA 02333

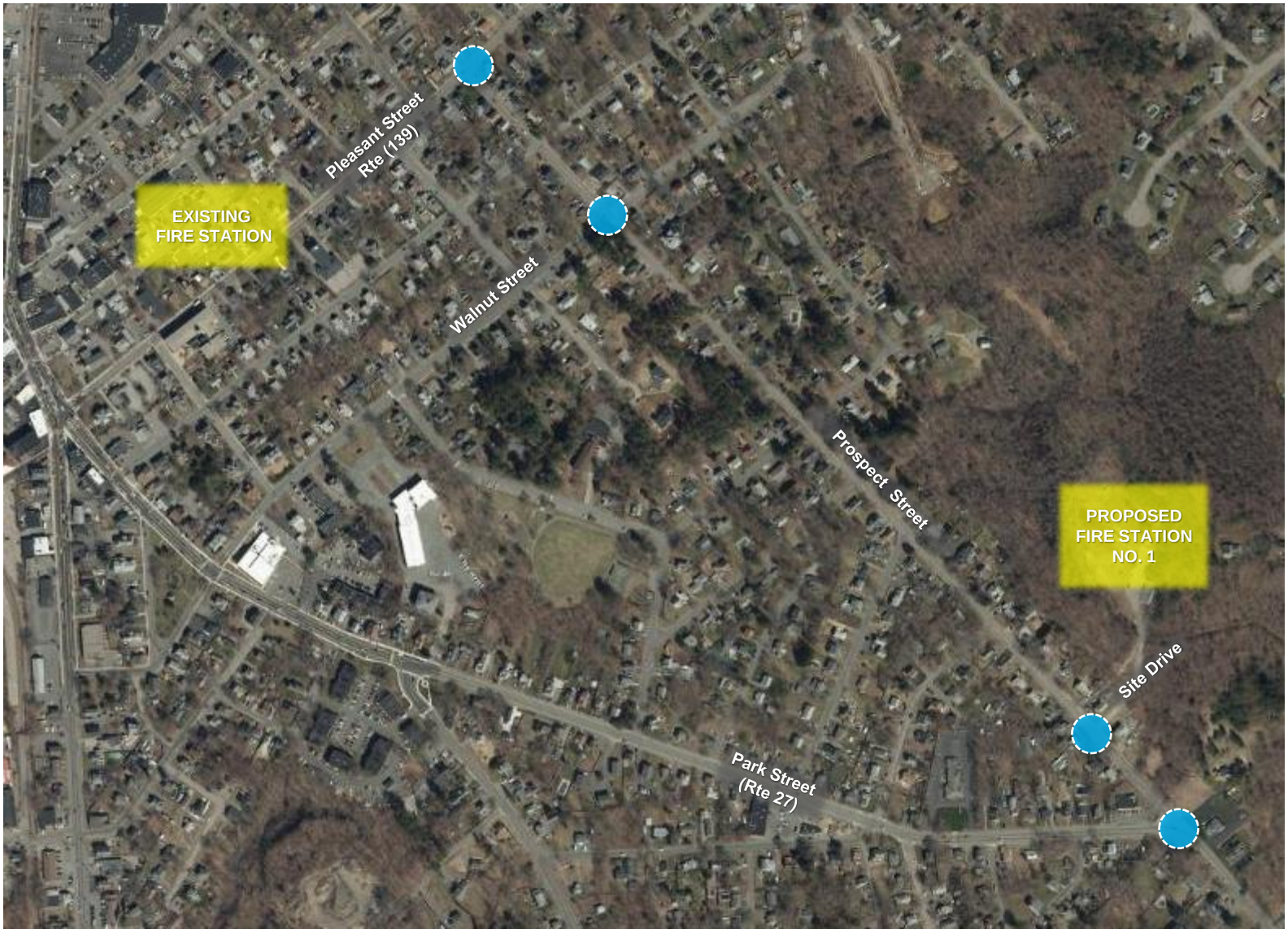
FROM: Mr. John W. Diaz, PE, PTOE
Vice President

RE: Traffic Impact and Access Study
Fire Station No. 1
400 Prospect Street - Stoughton, Massachusetts

INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this *Traffic Impact and Access Study* (TIAS) for the proposed Fire Station No. 1 to be located at 400 Prospect Street in Stoughton, Massachusetts. The project consists of constructing a 5 Bay, 25,200 square foot fire station building, with on-site parking for 31 vehicles. Access and egress to and from the site are proposed via one full-access driveway at on the north side of Prospect Street at 400 Prospect Street, approximately 450 ft northwest of the Park Street/Prospect Street intersection.

The site location in relation to the surrounding roadways is shown on the map on Figure 1. This TIAS evaluates the traffic impacts and access/egress requirements for the proposed development.



LEGEND

STUDY AREA INTERSECTION

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FIRE STATION NO. 1 - STOUGHTON, MASSACHUSETTS

FIGURE 1
SITE LOCATION MAP

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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 TIAS for the proposed site, the following unsignalized intersections have been analyzed and evaluated:

- Prospect Street at Pleasant Street
- Prospect Street at Walnut Street
- Prospect Street at Proposed Site Driveway
- Park Street at Prospect Street

Prospect Street

Prospect Street is under the jurisdiction of the Town of Stoughton and is classified as an urban collector within the Boston Urbanized Area. Prospect Street runs in a general northwest-to-southeast direction in the study area and does not have a posted regulatory speed but is defined as a thickly settled area with a defacto speed limit of 30 miles per hour (mph). Prospect Street provides one general purpose travel lane in each direction, separated by a double-yellow centerline. Sidewalks are provided on the westerly side only and there are no specific or bicycle accommodations within the study area. Land uses along Prospect Street within the study consist of primarily of residential uses.

Prospect Street at Pleasant Street

Figure 2 Prospect Street looking north at Pleasant Street - Google Streetview 2019

Prospect Street intersections Pleasant Street (Route 139) to form the base of a “T” intersection. All roadways are under the jurisdiction of the Town of Stoughton. Walnut Street is under STOP control, while

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traffic on Pleasant Street is not controlled. There is a chevron sign opposite Prospect Street to reinforce the "T" intersection. Although there is a sidewalk on the westerly side of Prospect Street and on both sides of Pleasant Street, there are no crosswalks or other pedestrian accommodations present at the intersection. Each approach consists of a single approach lane, approximately 12 ft wide. No shoulders are provided on Prospect Street and approximately 1' shoulders are present on Pleasant Street.

with a "Keep Right" sign facing motorists on Highland Street and facing eastbound motorists on Asbury Street. Just west of the raised island, directional travel on Asbury Street is separated by a double-yellow centerline. The STOP-sign on Asbury Street is supplemented by a short section of white STOP line. However, the STOP Line does not fully cross the entire Asbury Street approach.

Prospect Street at Walnut Street

Figure 3 Prospect looking north at Walnut -Street Google Streetview 2019

Walnut Street intersects Prospect Street to form a four-way STOP controlled intersection. Walnut Street runs in a generally northeast-southwest configuration providing a connection to Lincoln Street and Central Street to the east and Washington Street (Route 138) to the west. Both Walnut Street and Prospect Street are under the jurisdiction of the Town of Stoughton. Walnut Street between Pleasant Street and Park Street (Route 27) is scheduled for modifications by the town to provide additional traffic calming measures. Crosswalks and Stop Lines are provided on all four approaches to the intersection and an overhead flashing red beacon faces each approach. All approaches provide approximately 12' approach lanes. Sidewalks on Prospect Street continue to be on the westerly side, while Walnut Street provides sidewalks on both sides of the street. Prospect Street provide double yellow centerlines, while Walnut Street has no double yellow centerlines dividing eastbound and westbound traffic.

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Prospect Street at Park Street and Alder Street

Figure 4 Prospect Street looking south at Park Street – Google Streetview - 2019

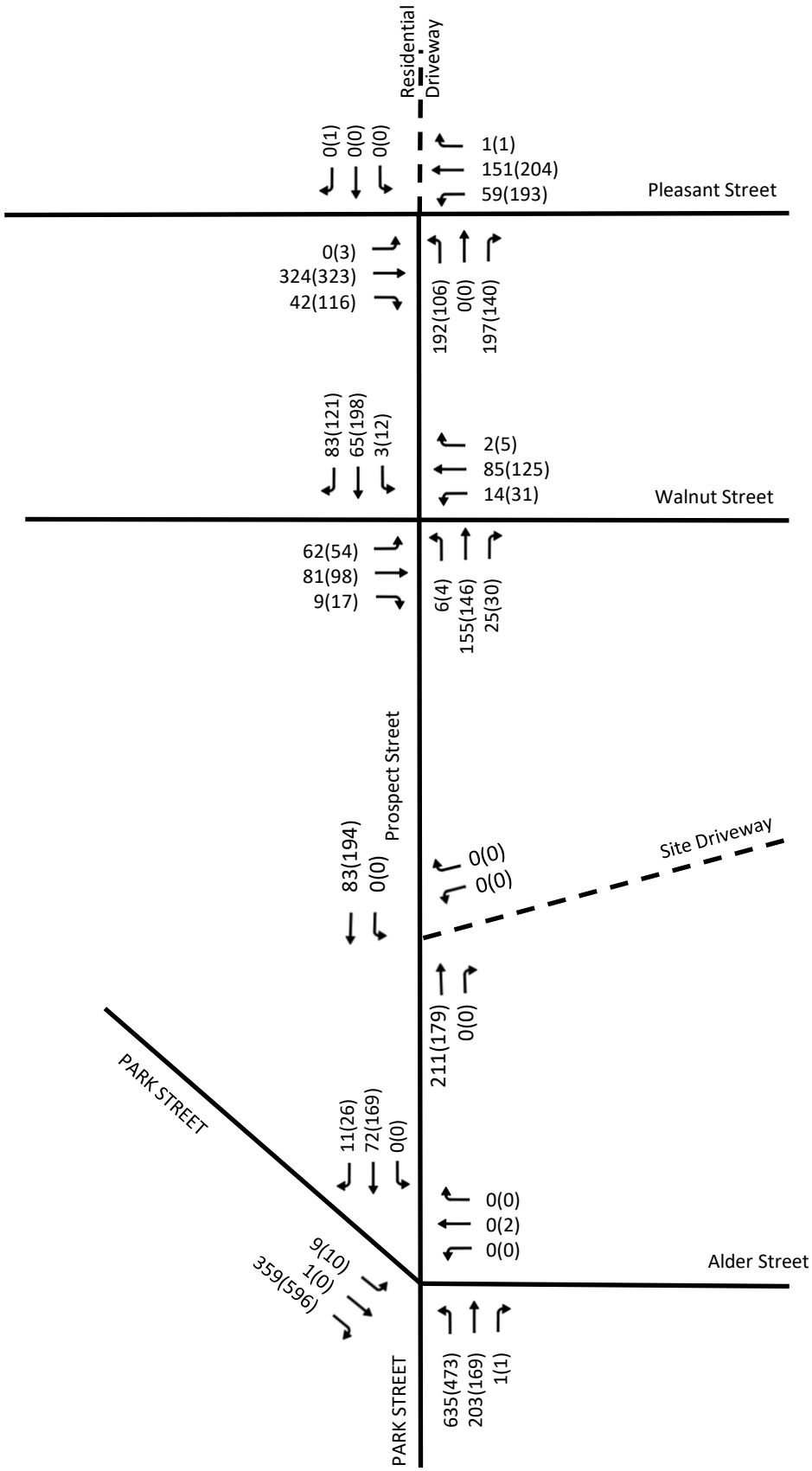
Alder Street (a private road) intersects Prospect Street and Park Street from the east to form an offset four-way intersection. Alder Street has no pavement markings and is not controlled by a STOP or YIELD sign and functions as more of a residential driveway.

The major intersection is formed as Prospect Street intersection Park Street (Route 27) to form more of a "Y" intersection. Prospect Street is under STOP sign control and intersection Park Street at the crest of a horizontal curve. There are median islands on all three approaches (Park Street southeast bound, Prospect Street southbound and Park Street northbound) with "keep right" signs. There are also ground mounted flashing beacons facing each approach mounted on the median islands. While each approach is striped as a single lane, there is room on the Prospect Street southbound approach for left and right turning vehicles to both approach the stop line and wait for gaps in traffic.

Pedestrian crosswalks are present along the Prospect Street approach to connect to sidewalks on the east side of Park Street. Park Street (Route 27) is under the jurisdiction of the Massachusetts Department of Transportation.

Traffic Volumes

Base traffic conditions within the study area were developed by conducting manual-turning movement counts (TMCs) and vehicle classifications on November 16, 17 and 21, 2022. Automatic traffic recorder (ATR) counts were not able to be collected in time for this study but will be collected for a 48 hour period north of Park Street and south of Pleasant Street and will include both daily traffic volumes and vehicle speeds and will be provided as an addendum to this report. 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 (4:00 to 6:00 PM). Existing AM and PM Weekday peak hour turning movement counts are illustrated in Figure 5. All traffic-count data are provided in the Appendix.



XX(XX)= WEEKDAY AM (WEEKDAY PM)
NEG = Negligible

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FIGURE 4
2022 EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES

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Seasonal Adjustment

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. To determine if the November 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 November traffic volumes are approximately 2.0% above average-month conditions. Therefore, to provide a conservative analysis, the November traffic volumes were used as counted to represent average-month conditions. The MassDOT seasonal adjustment data is provided in the Appendix.

Collisions

Collision data for the study area intersections were obtained from MassDOT for the latest five years available. Table 1 summarizes the data. In addition to the collision summary, crash occurrence also should be compared to the volume of traffic through a particular intersection to determine any significance. Accordingly, the crash rates were calculated for each study area segment and intersection 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). For unsignalized intersections, both the statewide and District 4 average is 0.57 c/mev. 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.

Prospect Street at Pleasant Street

Based on the most recent MassDOT collision data (2018-2021), the unsignalized intersection of Pleasant Street at Prospect Street experienced a total of 3 collisions in 4 years, or an average of approximately 0.75 collisions per year, with a crash rate of 0.17 c/mev, which is less than the statewide and District 5 average (0.57 c/mev) for unsignalized intersections. Two crashes resulted in injuries and 1 crash was property damage. Two of the crashes were 2 vehicle angle and 1 was a single vehicle crash. All crashes occurred outside of peak hours with normal weather/road conditions.

There is currently no STOP line on the Prospect Street NB approach and the STOP sign is located behind the stopping point of most vehicles. The town should consider striping a STOP line on the Prospect Street NB approach and providing Intersection Ahead warning signs on the EB and WB Pleasant Street approaches to Prospect Street. However, due to the low crash rate, however, there is no safety concern that requires further investigation.

Prospect Street at Walnut Street

Based on the most recent MassDOT collision data (2018-2021), the unsignalized intersection of Prospect at Walnut Street experienced a total of 10 collisions in 4 years, or an average of approximately 2.5 collisions per year, with a crash rate of 0.73 c/mev, which is greater than the statewide and District 5 average (0.57 c/mev) for unsignalized intersections. Eight crashes resulted in property damage only and 2 crashes resulted in personal injuries. The majority (9) crashes involved 2 or more vehicles and 7 of the crashes were angle collisions. While all crashes occurred in normal weather/road conditions, 40% of the crashes occurred during the commuter peak periods.

It was noted that there is no Double Yellow Centerline (DYCL) on either Walnut Street approach and some of the STOP signs may be becoming faded. There is an existing Overhead Flashing Beacon present to

[1] *MassDOT Weekday Seasonal and Axle Correction Factors*, Average of 2014-2019 data.

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provide additional visibility. The town should consider upgrading the STOP signs to ensure optimum reflectivity as well as striping DYCL on both Walnut Street approaches.

Prospect Street at Park Street and Alder Street

Based on the most recent MassDOT collision data (2018-2021), the unsignalized intersection of Prospect at Walnut Street experienced a total of 8 collisions in 4 years, or an average of approximately 2 collisions per year, with a crash rate of 0.34 c/mev, which is below the statewide and District 5 average (0.57 c/mev) for unsignalized intersections. Six crashes resulted in property damage only and 2 crashes resulted in personal injuries. There were 4 crashes involving 2 or more vehicles and all 4 crashes were angle collisions. The majority of crashes (75) occurred during wet/icy weather and road conditions and 25% occurred during the commuter peak periods.

It was noted that there is no striping or signage for Alder Street. While there are minimal volumes associated with the street, a STOP sign, STOP line and centerline marking would reinforce its presence as a street. In addition, the town may want to consider adding W11-8 Emergency Vehicle signs along the NB and SEB Park Street approaches to Prospect Street as well as along the Prospect Street NB and SB approaches to the Fire Station driveway, to provide additional warning to drivers of the potential for emergency vehicles through the intersection and along Prospect Street. However, due to the low crash rate, however, there is no safety concern that requires further investigation.

TABLE 1
Collision Summary

Location	Number of Collisions			Severity			Type				Percent During	
	Total	Ave Per Year	Crash Rate[a]	Property Damage	Personal Injury/ Non Fatal	Fatal	Single Vehicle	Two or More Vehicles	Angle	Side Swipe-Opposite Direction	Wet/Icy Conditions	Commuter Peak[b]
MassDOT Collision Data (2018-2021)												
Prospect Street at Pleasant Street	3	0.75	0.17	1	2	0	1	2	2	0	0%	0%
Prospect Street at Walnut Street	10	2.5	0.73	8	2	0	-	9	7	2	0%	40%
Prospect Street at Park Street	8	2	0.34	6	2	0	4	4	4	-	75%	25%

[a]Measured in crashes per million entering vehicles for intersections and in crashes per million vehicle miles traveled for roadway segments.

[b]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.

Vehicle Speeds

Travel speeds were noted utilizing the floating car methodology and were observed to be approximately 40 mph. Therefore, an average speed of 40 mph was noted and a slightly higher 45 mph 85% percentile speed was assumed and used for all sight distance evaluations.

Sight Distance

To identify potential safety concerns associated with site access and egress, sight distances have been evaluated at the proposed site driveway to determine if the available sight distances for vehicles exiting the site meet or exceed the minimum distances required for approaching vehicles to safely stop. The available sight distances were compared with minimum requirements, as established by the American Association of

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State Highway and Transportation Officials (AASHTO)[2]. AASHTO is the national standard by which vehicle sight distance is calculated, measured, and reported. The Massachusetts Department of Transportation (MassDOT) and the Executive Office of Energy and Environmental Affairs (EEA) require the use of AASHTO sight distance standards when preparing traffic impact assessments and studies, as stated in their guidelines for traffic impact assessments.

Sight distance is the length of roadway ahead that is visible to the driver. Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path. The values are based on a driver perception and reaction time of 2.5 seconds and a braking distance calculated for wet, level pavements. When the roadway is either on an upgrade or downgrade, grade correction factors are applied. Stopping sight distance is measured from an eye height of 3.5 feet to an object height of 2 feet above street level, equivalent to the taillight height of a passenger car. The SSD is measured along the centerline of the traveled way of the major road.

Intersection sight distance (ISD) is provided on minor street approaches to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway. By definition, ISD is the minimum distance required for a motorist exiting a minor street to turn onto the major street, without being overtaken by an approaching vehicle reducing its speed from the design speed to 70 percent of the design speed. ISD is measured from an eye height of 3.5 feet to an object height of 3.5 feet above street level. The use of an object height equal to the driver eye height makes intersection sight distances reciprocal (i.e., if one driver can see another vehicle, then the driver of that vehicle can also see the first vehicle). When the minor street is on an upgrade that exceeds 3 percent, grade correction factors are applied.

SSD is generally more important as it represents the minimum distance required for safe stopping while ISD is based only upon acceptable speed reductions to the approaching traffic stream. The ISD, however, must be equal to or greater than the minimum required SSD in order to provide safe operations at the intersection. In accordance with the AASHTO manual, *"If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road."* Accordingly, ISD should be at least equal to the distance required to allow a driver approaching the minor road to safely stop.

The available SSD and ISD at the proposed site driveway were measured and compared to minimum requirements as established by AASHTO. Based on the observed speeds, the SSD and ISD requirements at the intersections were calculated. The required minimum sight distances for the driveways are compared to the available distances, as shown in Table 2.

[2] *A Policy on Geometric Design of Highways and Streets*; American Association of State Highway and Transportation Officials (AASHTO); 2018.

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TABLE 2
Sight Distance Summary

Location/Direction	Stopping Sight Distance (feet)		Intersection Sight Distance (feet)	
	Measured	Minimum Required [a]	Measured	Desirable [b]
Prospect Street at Site Driveway:				
Northwest of intersection (SEB)	500+	360	800+	430/695
Southeast of intersection (NWB)	500+	360	800+[c]	500/765

[a] Values based on AASHTO requirements for minimum SSD based on 85th percentile speed of 45 mph (NWB) and 45 mph (SEB) on Prospect Street.

[b] Values based on AASHTO requirements for ISD for speed of 45 mph on Prospect Street (passenger car/combination truck).

[c] Clear line of sight to the Park Street intersection at approximately 450' southeast of sight drive. Approaching vehicles visible along Park Street NB approach as well.

As indicated in Table 2 above, available sight distances at the proposed site driveway on Prospect Street exceed the minimum SSD and ISD requirements for safe operation. To maintain the sight distances at the driveway after development of the site, it is recommended that any proposed plantings, vegetation, landscaping, and signing along the site frontage be kept low to the ground (no more than 3.0 feet above street level) or set back sufficiently from Asbury Street so as not to inhibit the available sight lines.

FUTURE CONDITIONS

To estimate the impact of site-generated traffic within the study area, existing traffic volumes were projected to the year 2029, representing a seven-year design horizon in accordance with state requirements. The proposed development 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 2029 No-Build traffic volumes, which assume that the proposed development 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 2029 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's permanent count stations (6238 and 6237) on Route 24 traffic volumes in the area have been increasing, on average between 2014-2019, at a rate of between 0.4% and 1.4% per year. Therefore, a 1.0% 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 Planning Department, there were no significant projects expected to impact traffic levels in the area of the project.

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Planned Roadway Improvements

Based on correspondence with the Stoughton Engineering Department, the section of Walnut Street from Pierce Street to Park Street (Route 27) is scheduled for reconstruction to provide enhanced bike and pedestrian accommodations.

No-Build Conditions

The 2029 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0% compounded annual traffic growth rate (7.2 % over seven years) to the 2022 Existing traffic volumes, and an appropriate accounting of previously noted development by others. The 2029 No-Build traffic volumes are shown graphically on Figure 6 for the peak hours.

Trip Generation

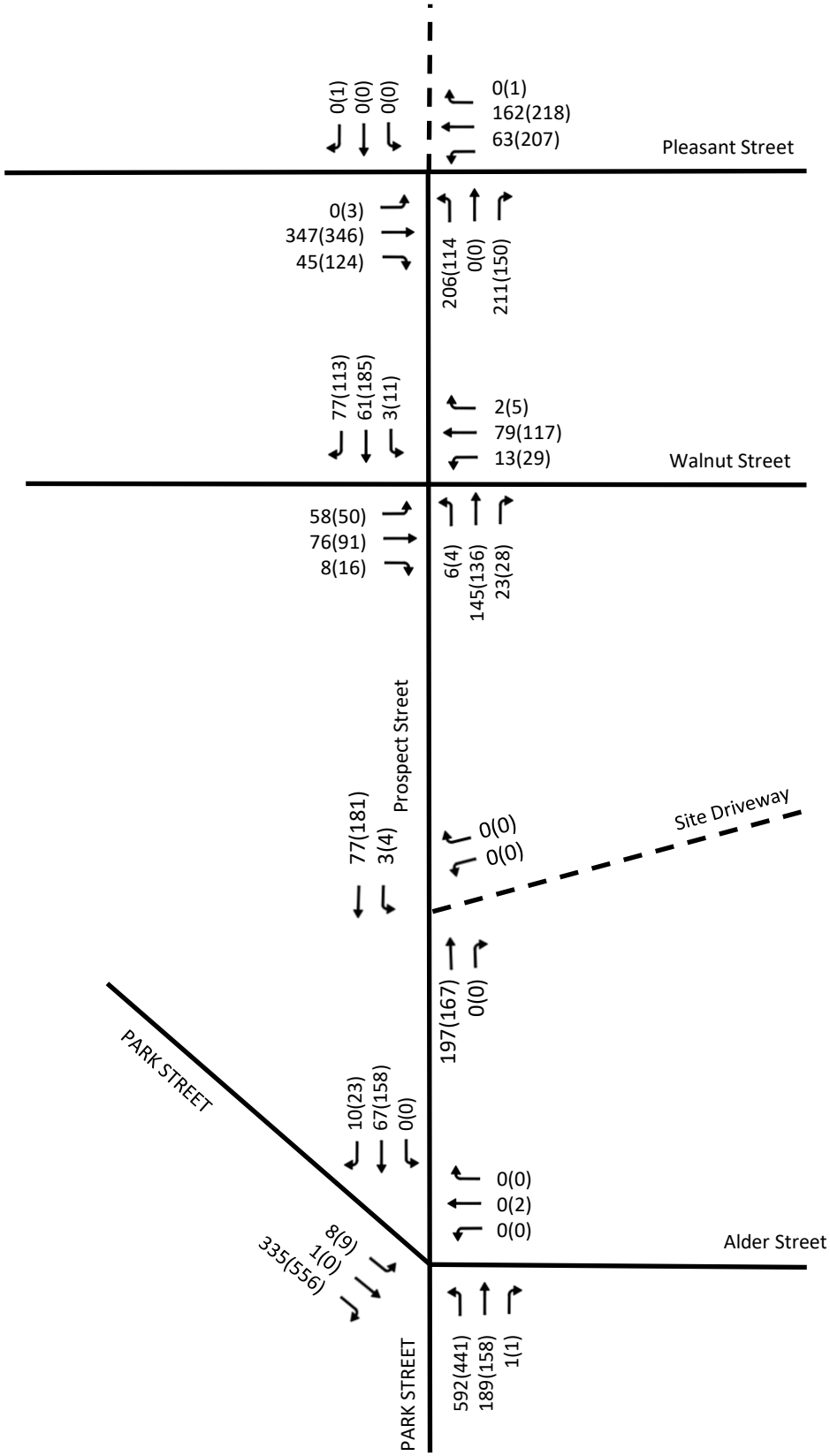
The project consists of constructing a 25,200 square foot fire station with 5 bays plus one maintenance bay and will provide parking for 31 vehicles. It is expected that the station will be staffed by 8 firefighters on 24-hour shifts. Traffic to be generated by the proposed development was forecast using trip rates contained in the ITE *Trip Generation, 11th Edition*[3] for Land Use Code (LUC) 575 -Fire and Rescue Station; however, the data is very limited and only projects evening peak hour trips. Therefore, additional data on staffing, call responses, vehicle operations, etc. provided by the Stoughton Fire Department was used to estimate the projected trips. All trip-generation data are provided in the Appendix. Tables 3 summarizes the results of the trip-generation estimates based on ITE Rates.

TABLE 3
Trip-Generation Summary - ITE

Peak Hour/Direction	Proposed Trips [c]
Weekday Daily:	-
Weekday AM Peak Hour:	
Enter	-
Exit	-
Total	-
Weekday PM Peak Hour:	
Enter	3
Exit	9
Total	12

[a] Based on ITE LUC 575 (Fire & Rescue Station) 25,200 sf.

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



XX(XX)= WEEKDAY AM (WEEKDAY PM)
NEG = Negligible

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FIGURE 2
2029 NO-BUILD CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

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The new Fire Station will have a staff of 8 Fire Fighters in the station on a 24-hour shift. Shift change occurs at 8:00 AM, with no staff changes anticipated during the evening peak hour.

Based on historical data from the existing Freeman Street Fire Station, there are on average between 10-12 calls during a 24-hour shift, or one call per two hours. In order to provide a conservative analysis, it has been assumed that an emergency call is responded to during both the morning and evening peak hours. Approximately 65% of the calls are responded to by an Ambulance and Engine truck. While the new Prospect Street station is anticipated to respond to slightly fewer calls per day (6-8), in order to provide a conservative estimate of site traffic, the data from Freeman Street (up to 12 calls) will be used. Table 4 summarizes the results of the trip-generation estimates based on actual past and project Fire Station operations data from the existing Freeman Street station.

TABLE 4
Trip-Generation Summary – Existing Operations

Staff		Emergency Vehicles		Total Vehicles	
Morning Peak Hour *		Morning Peak Hour**		Morning Peak Hour	
In	8	In	2	In	10
Out	8	Out	2	Out	10
	16		4		20
* Shift change at 0800					
Evening Peak Hour*		Evening Peak Hour**		Evening Peak Hour**	
In	4	In	2	In	6
Out	4	Out	2	Out	6
	8		4		12
Daily		Daily**		Daily	
In	8	In	24	In	32
Out	8	Out	24	Out	32
	16		48		64

* No staff change, "other"
**Responses (based on existing Freeman St 12 calls per 24 hr shift - one call per 2 hours)
for estimating assume 1 call per peak hour
average 2 vehicles per response

As shown in Table 4, the proposed development is expected to generate 20 vehicles trips (10 entering and 10 exiting) during the weekday AM peak hour and 12 vehicles trips (6 entering and 6 exiting) during the weekday PM peak hour.

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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 distribution of the proposed Fire Station traffic is based on two factors: staff arrival and departure and call responses. Staff arrival and departure is based on existing travel patterns within the study area during the morning peak. Accordingly, approximately 72% of the staff traffic is expected to and from the south on Prospect Street and 38% is expected to and from the north.

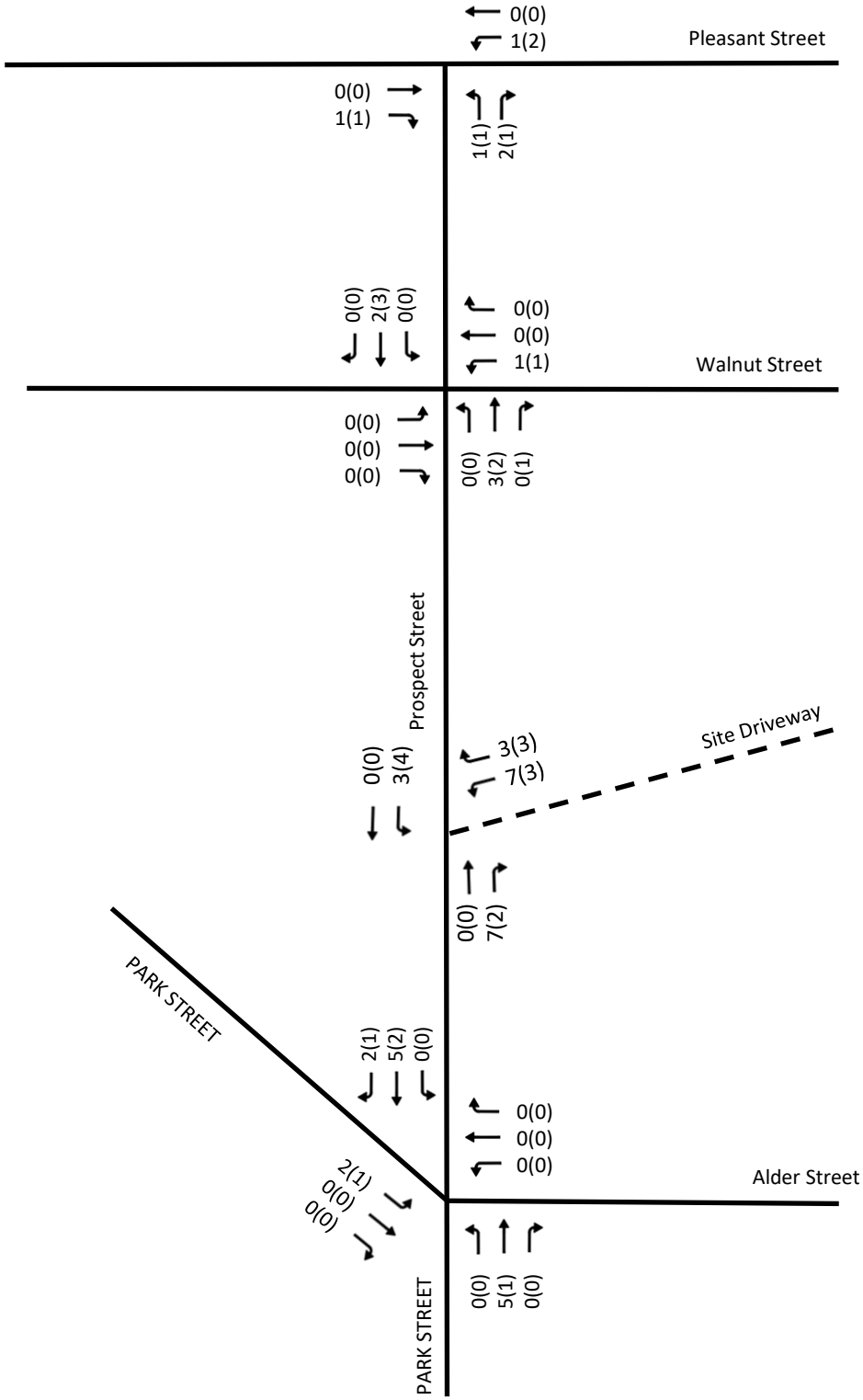
Based on discussions with the Fire Department and the coverage area of the station, the primary emergency response route will be via the Park Street intersection and all non-emergency responses will be via the Park Street intersection. It is therefore assumed that 75% of fire apparatus exiting and entering the station will travel through the Park Street intersection. At Park Street the majority (65%) of responses are expected to be to/from the north.

All site traffic at the remaining intersections is distributed based on existing distribution percentages.

The proposed development will result in minor increases in traffic on the study area roadways. As shown on Figure 7, traffic-volume increases beyond the study area during the peak hours are expected to be in the range of 3 to 9 vehicles trips. These increases represent, on average, one additional vehicle trip approximately every 9 minutes to every 20 minutes during the peak hours. Traffic distribution calculations are provided in the Appendix.

Build Traffic Volumes

Based on the traffic generation and distribution estimates for this project, the traffic volumes associated with the proposed development were assigned to the roadway network. The site-generated traffic networks are shown on Figure 4 for the weekday AM and weekday PM peak hours. The site-generated traffic volumes were then combined with the 2029 No-Build traffic volumes to develop the 2029 Build peak-hour traffic-volume networks. The 2029 Build weekday AM and weekday PM peak hour traffic volumes are illustrated on Figure 8.



XX(XX)= WEEKDAY AM (WEEKDAY PM)

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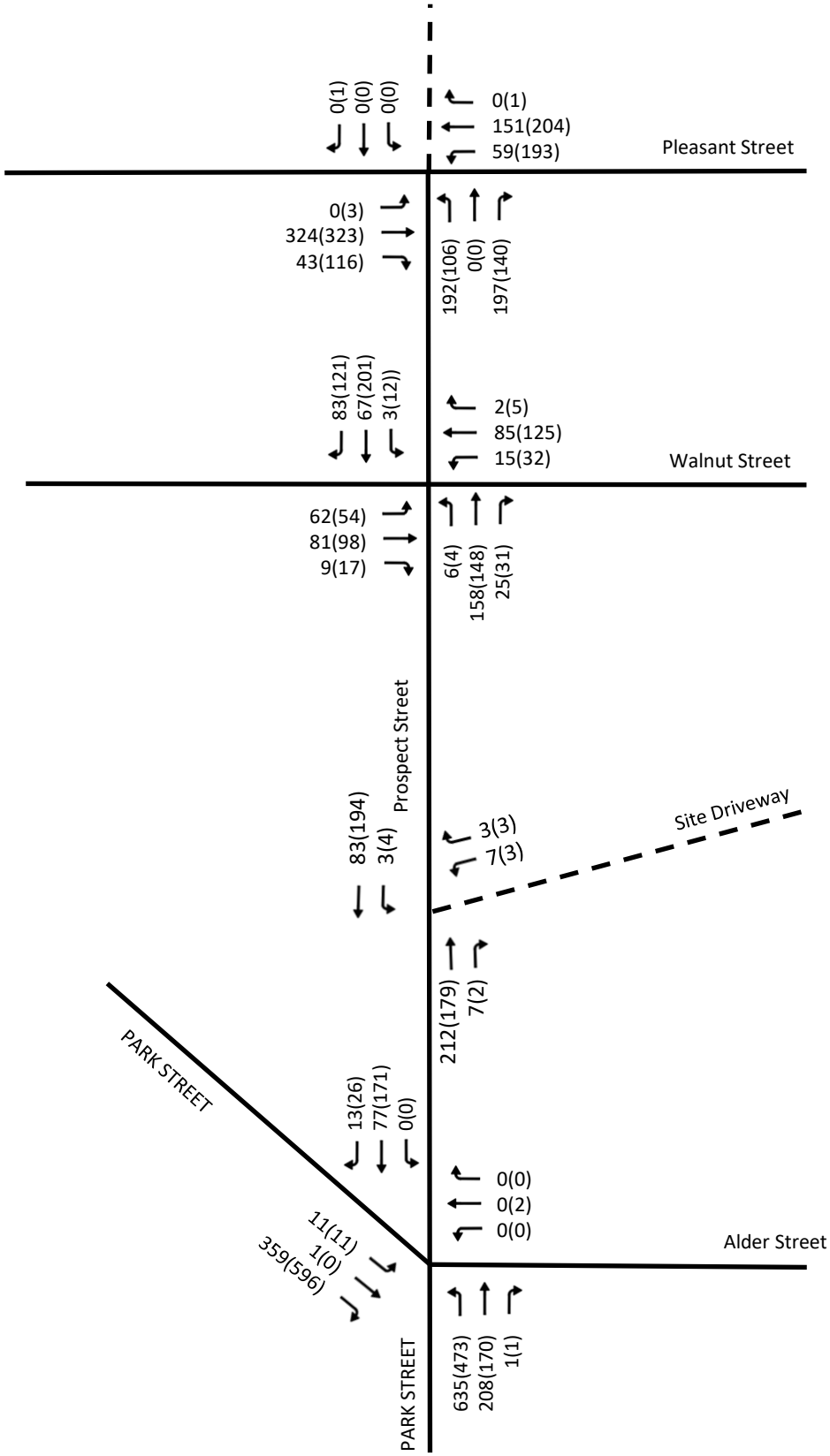
FIGURE 2
WEEKDAY SITE-GENERATED PEAK HOUR TRAFFIC VOLUMES



XX(XX)= WEEKDAY AM (WEEKDAY PM)
NEG = Negligible

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FIGURE 2
2029 BUILD CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

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CAPACITY AND QUEUE ANALYSIS

Capacity and queue analyses were conducted at all study area locations under 2022 Existing, 2029 No-Build, and 2029 Build traffic-volume conditions. The impact of site-generated traffic can be measured by comparing 2029 No-Build conditions to 2029 Build conditions.

Methodology

The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM)[4] and is described in the Appendix.

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 5 and are discussed below. Capacity and queue analyses were conducted at the study area intersections utilizing *Synchro* software.[5] The capacity and queue analysis worksheets for all conditions are provided in the Appendix.

Pleasant Street at Prospect Street

The northbound Prospect Street approach to Pleasant Street currently operates at a level-of-service D during the weekday morning and evening peak hours. Under future 2029 No-Build conditions, without the project the approach worsens to LOS E during the morning peak hour and LOS F during the evening peak hour.

However, the proposed fire station is anticipated to only add 3 vehicles during the morning peak hour and 2 vehicles in the evening peak hour, to the northbound approach. This represents one additional vehicle every twenty to thirty minutes. Furthermore, the site-generated vehicle trips are not expected to increase queues on this movement by more than one vehicle or increase the delay on the approach by more than 3 seconds. All other critical movements through this intersection are expected to operate at LOS A or better during all analysis time periods.

Prospect Street at Walnut Street

All movements at the Prospect Street intersection with Walnut Street are anticipated to operate at LOS B or better under all analysis time periods with queues not exceeding one vehicle.

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4 *Highway Capacity Manual 6th* Edition, Transportation Research Board; Washington, D.C.; 2016.

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

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Prospect Street at the Site Driveway

All movements at the site driveway intersection with Prospect Street are anticipated to operate at LOS B or better under all analysis time periods with queues not exceeding one vehicle.

Prospect Street at Park Street

The southbound left turn from Prospect Street approach to Park Street currently operates at a level-of-service D during the weekday morning peak hour and a LOS F during the weekday evening peak hours. Under future 2029 No-Build conditions, without the project the approach continues to operate at LOS D and LOS F during the morning and afternoon peak hours, respectively.

However, the proposed fire station is anticipated to only add 7 vehicles during the morning peak hour and 3 vehicles in the evening peak hour, with the majority (65%) expected to turn right from Prospect Street to Park Street. This represents one additional vehicle every nine to twenty minutes. Furthermore, the additional site-generated vehicle trips are not expected to increase queues on this movement by more than one vehicle or increase the delay on the approach by more than 5 seconds. All other critical movements through this intersection are expected to operate at LOS A or better during all analysis time periods.

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TABLE 5
Intersection Capacity Analysis Summary

Intersection/Peak Hour/Lane Group	2022 Existing				2029 No-Build				2029 Build			
	V/C [a]	Del. [b]	LOS [c]	Queue [d]	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Prospect Street at Pleasant Street												
Weekday AM:												
Prospect Street NB approach	0.72	28.0	D	--/148	0.82	37.6	E	--/198	0.83	38.9	E	--/203
Pleasant Street EB left-turn	0.00	0.0	A	--/<25	0.00	0.0	A	--/<25	0.00	0.0	A	--/<25
Pleasant Street WB left-turn	0.05	8.2	A	--/<25	0.05	8.3	A	--/<25	0.05	8.3	A	--/<25
Prospect Street SB approach	0.00	0.0	A	--/<25	0.00	0.0	A	--/<25	0.00	0.0	A	--/<25
Weekday PM:												
Prospect Street NB approach	0.68	34.6	D	--/118	0.81	51.4	F	--/168	0.83	53.8	F	--/175
Pleasant Street EB left-turn	0.00	0.0	A	--/<25	0.00	7.6	A	--/<25	0.00	7.6	A	--/<25
Pleasant Street WB left-turn	0.16	8.8	A	--/<25	0.18	9.0	A	--/<25	0.18	9.0	A	--/<25
Prospect Street SB approach	0.00	9.2	A	--/<25	0.00	9.3	A	--/<25	0.00	9.3	A	--/<25
Prospect Street at Walnut Street												
Weekday AM:												
Prospect Street NB approach	0.26	9.4	A	--/25	0.28	9.7	A	--/28	0.29	9.7	A	--/30
Walnut Street EB approach	0.22	9.4	A	--/<25	0.24	9.6	A	--/<25	0.24	9.7	A	--/<25
Walnut Street WB approach	0.15	8.9	A	--/<25	0.16	9.1	A	--/<25	0.16	9.1	A	--/<25
Prospect Street SB approach	0.20	8.7	A	--/<25	0.22	8.9	A	--/<25	0.22	8.9	A	--/<25
Weekday PM:												
Prospect Street NB approach	0.26	10.1	B	--/25	0.29	10.6	B	--/30	0.30	10.7	B	--/30
Walnut Street EB approach	0.26	10.4	B	--/25	0.29	11.0	B	--/30	0.29	11.0	B	--/30
Walnut Street WB approach	0.25	10.5	B	--/25	0.28	11.0	B	--/28	0.28	11.0	B	--/28
Prospect Street SB approach	0.45	11.9	B	--/60	0.50	13.0	B	--/70	0.50	13.1	B	--/70

[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).

TECHNICAL MEMORANDUM

TABLE 6 (continued)
Intersection Capacity Analysis Summary

Intersection/Peak Hour/Lane Group	2022 Existing				2029 No-Build				2029 Build			
	V/C [a]	Del. [b]	LOS [c]	Queue [d]	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Prospect Street at Park Street												
Weekday AM:												
Park Street EB left-turn	0.01	9.5	A	--/<25	0.01	9.7	A	--/<25	0.02	9.7	A	--/<25
Prospect Street SB left-turn	0.30	27.0	D	--/30	0.37	32.3	D	--/40	0.40	33.6	D	--/45
Prospect Street SB right-turn	0.02	13.6	B	--/<25	0.03	14.2	B	--/<25	0.03	14.3	B	--/<25
Weekday PM:												
Park Street EB left-turn	0.01	8.8	A	--/<25	0.01	8.9	A	--/<25	0.01	8.9	A	--/<25
Prospect Street SB left-turn	0.75	57.4	F	--/128	0.90	89.6	F	--/175	0.92	94.6	F	--/180
Prospect Street SB right-turn	0.05	12.0	B	--/<25	0.05	12.4	B	--/<25	0.06	12.4	B	--/<25
Prospect Street at Site Driveway												
Weekday AM:												
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.02	10.2	B	--/<25
Prospect Street SB left-turn	--	--	--	--/--	--	--	--	--/--	0.00	7.7	A	--/<25
Weekday PM:												
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.01	10.2	B	--/<25
Prospect Street SB left-turn	--	--	--	--/--	--	--	--	--/--	0.00	7.6	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).

TECHNICAL MEMORANDUM

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 residential development. Conclusions of this effort are presented below.

- The proposed development is to be located at 400 Prospect Street in Stoughton, Massachusetts and consists of a 5 Bay 25,200 s.f. Fire Station to replace the existing station on Freeman Street.
- The station will be staffed by 8 fire fighters operating on a 24-hour shift, with shift changes at 0800, therefore there is minimal non-emergency vehicle activity at the site during the evening peak hour.
- Available sight distances (both SSD and ISD) at the proposed driveway intersection with Prospect Street exceed AASHTO standards for travel speed in excess of 45 mph along Prospect Street, which is a 30 mph thickly settled speed zone.
- Prospect at Pleasant Street and Prospect at Park Street experienced crash rates below the state and District-wide averages for unsignalized intersections, indicating no significant safety issue exists.
- The Prospect Street at Walnut Street intersection experiences a higher-than-average crash rate. DYCL markings should be provided along the Walnut Street approaches and new STOP signs installed on all four approaches to improve intersection visibility.
- The proposed development is expected to generate 20 vehicles trips (10 entering and 10 exiting) during the weekday AM peak hour and 12 vehicles trips (6 entering and 6 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 3 to 9 vehicles trips. These increases represent, on average, one additional vehicle trip approximately every 9 minutes to every 20 minutes during the peak hours.
- At the Prospect Street at Pleasant Street intersection the proposed fire station is anticipated to only add 3 vehicles during the morning peak hour and 2 vehicles in the evening peak hour, to the northbound Prospect Street approach. This represents one additional vehicle every twenty to thirty minutes. Furthermore, the site-generated vehicle trips are not expected to increase queues on this movement by more than one vehicle or increase the delay on the approach by more than 3 seconds. All other critical movements through this intersection are expected to operate at LOS A or better during all analysis time periods.
- All movements at the Prospect Street at Walnut Street intersection as well as the site driveway intersection with Prospect Street are anticipated to operate at LOS B or better under all analysis time periods with queues not exceeding one vehicle.
- At the Prospect Street at Park Street intersection, the proposed fire station is anticipated to only add 7 vehicles during the morning peak hour and 3 vehicles in the evening peak hour, with the majority (65%) expected to turn right from Prospect Street to Park Street. This represents one additional

TECHNICAL MEMORANDUM

vehicle every nine to twenty minutes. Furthermore, the additional site-generated vehicle trips are not expected to increase queues on this movement by more than one vehicle or increase the delay on the approach by more than 5 seconds. All other critical movements through this intersection are expected to operate at LOS A or better during all analysis time periods.

Based on the results of the study, the additional traffic generated by the proposed fire station can be safely and efficiently accommodated by the existing roadway network. No additional project-specific mitigation is warranted based on the incremental impacts of the proposed development.

TECHNICAL MEMORANDUM

- APPENDIX

- ***Traffic Count Data***
- ***MassDOT Crash Rate Worksheets***
- ***Sight Distance Calculations***
- ***Trip Generation Calculations***
- ***Capacity Analysis Methodology***
- ***Capacity and Queue Analysis Worksheets***

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TRAFFIC COUNT DATA

Start Date: 11/17/2022

Start Time: 7:00:00 AM - 9:00:00 AM

Intersection: Pleasant Street at Prospect Street

Municipality: Stoughton, MA

Base Year: 2022

Annual Growth Rate: 1.0%

Number of Projected Years: 7

CAR	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
7:00:00 AM	0	0	0	0	7	33	0	0	53	0	54	3	0	67	5	3	
7:15:00 AM	0	0	0	0	10	41	0	0	57	0	42	0	0	71	7	0	
7:30:00 AM	0	0	0	0	14	27	0	0	38	0	44	0	0	81	16	0	
7:45:00 AM	0	0	0	0	20	31	0	0	31	0	40	0	0	72	9	0	876
8:00:00 AM	0	0	0	0	25	33	0	0	30	0	41	0	0	61	13	0	854
8:15:00 AM	0	0	0	0	28	31	0	0	36	0	30	1	0	75	12	2	841
8:30:00 AM	0	0	0	0	30	34	0	0	21	1	26	0	0	64	14	0	811
8:45:00 AM	0	0	0	0	22	32	0	0	15	0	23	0	0	38	8	0	746

BIKE	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	2	3	0	0	0	0	1	0	0	3	0	0	
7:15:00 AM	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	
7:30:00 AM	0	0	0	0	2	3	0	0	0	0	0	0	0	2	0	0	
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	5	2	0	30
8:00:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1	0	26
8:15:00 AM	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	0	27
8:30:00 AM	0	0	0	0	2	1	0	0	0	0	1	0	0	2	0	0	26
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	21

TOTAL	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	9	36	0	0	53	0	55	3	0	70	5	3	
7:15:00 AM	0	0	0	0	10	44	0	0	57	0	43	0	0	72	7	0	
7:30:00 AM	0	0	0	0	16	30	0	0	38	0	44	0	0	83	16	0	
7:45:00 AM	0	0	0	0	20	31	0	0	31	0	42	0	0	77	11	0	906
8:00:00 AM	0	0	0	0	27	33	0	0	30	0	41	0	0	63	14	0	880
8:15:00 AM	0	0	0	0	28	33	0	0	38	0	31	1	0	76	12	2	868
8:30:00 AM	0	0	0	0	32	35	0	0	21	1	27	0	0	66	14	0	837
8:45:00 AM	0	0	0	0	22	32	0	0	15	0	23	0	0	42	8	0	767

% Truck	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00:00 AM	0%	0%	0%	0%	22%	8%	0%	0%	0%	0%	2%	0%	0%	4%	0%	0%
7:15:00 AM	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	2%	0%	0%	1%	0%	0%
7:30:00 AM	0%	0%	0%	0%	13%	10%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
7:45:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	18%	0%
8:00:00 AM	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	3%	7%	0%
8:15:00 AM	0%	0%	0%	0%	0%	6%	0%	0%	5%	0%	3%	0%	0%	1%	0%	0%
8:30:00 AM	0%	0%	0%	0%	6%	3%	0%	0%	0%	0%	4%	0%	0%	3%	0%	0%
8:45:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%

PEAK HOUR TOTAL	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	9	36	0	0	53	0	55	3	0	70	5	3	
7:15:00 AM	0	0	0	0	10	44	0	0	57	0	43	0	0	72	7	0	
7:30:00 AM	0	0	0	0	16	30	0	0	38	0	44	0	0	83	16	0	
7:45:00 AM	0	0	0	0	20	31	0	0	31	0	42	0	0	77	11	0	906
PEAK HOUR	**0**	**0**	**0**	**0**	**55**	**141**	**0**	**0**	**179**	**0**	**184**	**3**	**0**	**302**	**39**	**3**	

PEAK HOUR TRUCK PERCENT	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	2	3	0	0	0	0	1	0	0	3	0	0	
7:15:00 AM	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	
7:30:00 AM	0	0	0	0	2	3	0	0	0	0	0	0	0	2	0	0	
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	5	2	0	0
PEAK HOUR	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**7.3%**	**6.4%**	**#DIV/0!**	**#DIV/0!**	**0.0%**	**#DIV/0!**	**2.2%**	**0.0%**	**#DIV/0!**	**3.6%**	**5.1%**	**0.0%**	
Truck Percent on Enitre Approach		**#DIV/0!**				**6.6%**				**1.1%**				**3.8%**			

Start Date: 44882

Start Time: 4:00:00 PM - 6:00:00 PM

Intersection: Pleasant Street at Prospect Street

Municipality: Stoughton, MA

Base Year: 2022

Annual Growth Rate: 1.0%

Number of Projected Years: 7

CAR	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
4:00:00 PM	0	0	0	0	50	42	0	0	16	0	18	0	0	81	37	0	
4:15:00 PM	0	0	0	0	38	44	0	0	30	0	18	2	0	68	37	0	
4:30:00 PM	0	0	0	0	40	47	0	0	20	0	28	0	0	76	28	0	
4:45:00 PM	0	0	0	0	45	56	0	0	17	0	30	2	0	74	25	1	970
5:00:00 PM	0	0	1	0	53	55	0	0	16	0	33	1	1	68	21	0	975
5:15:00 PM	0	0	0	0	37	35	0	0	25	0	33	0	0	74	33	0	975
5:30:00 PM	0	0	0	0	41	41	1	1	40	0	33	1	2	70	28	1	995
5:45:00 PM	0	0	0	0	47	50	0	0	27	0	23	0	0	50	23	0	965

BIKE	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	1	1	0	0	0	0	1	0	0	5	1	0	
4:15:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	
4:30:00 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	2	1	0	
4:45:00 PM	0	0	0	0	3	2	0	0	1	0	1	0	0	7	0	0	31
5:00:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	2	1	0	27
5:15:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	0	30
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	26
5:45:00 PM	0	0	0	0	1	2	0	0	0	0	1	0	0	1	0	0	17

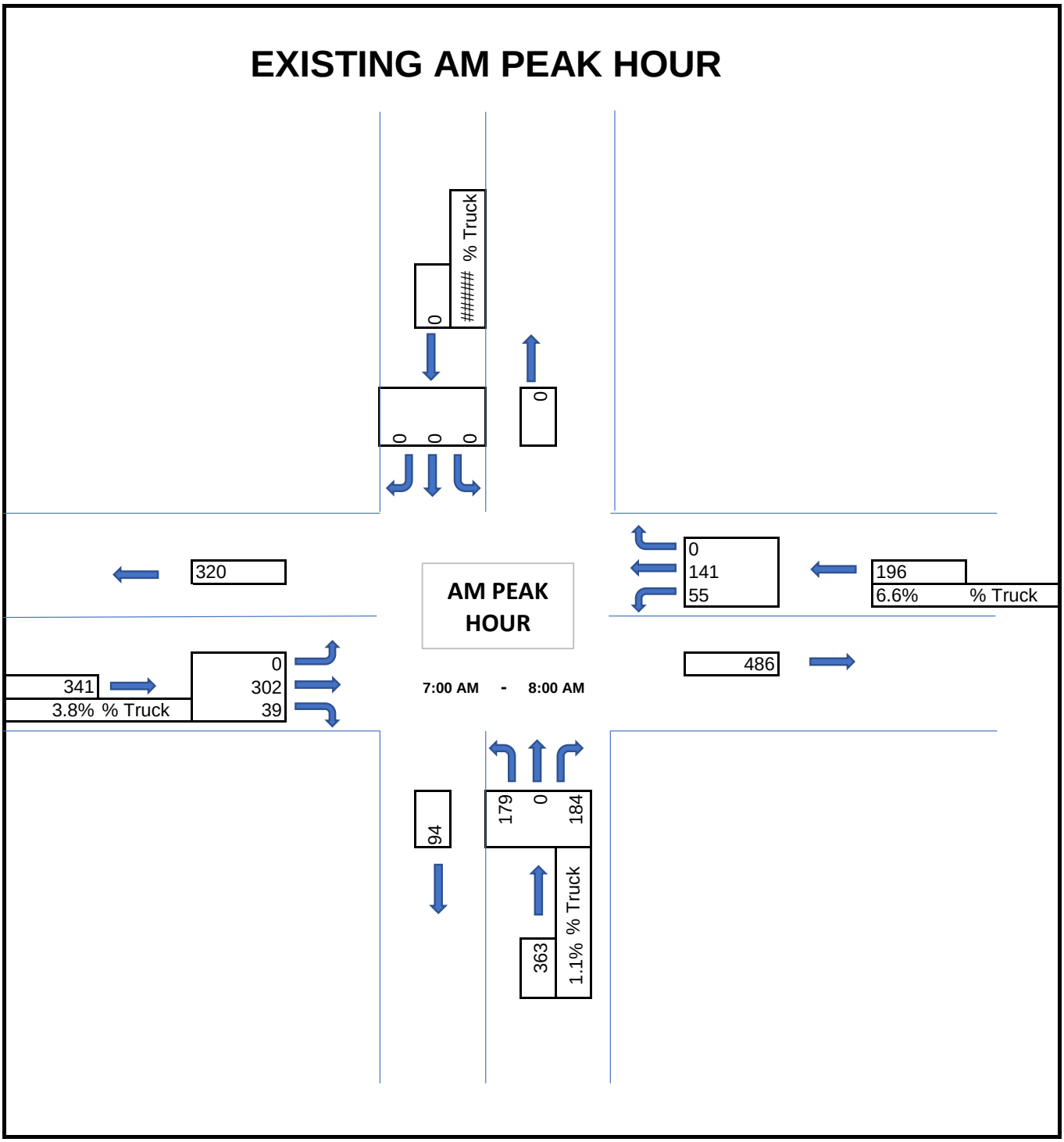
TOTAL	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	51	43	0	0	16	0	19	0	0	86	38	0	
4:15:00 PM	0	0	0	0	40	44	0	0	30	0	18	2	0	69	37	0	
4:30:00 PM	0	0	0	0	40	48	0	0	21	0	28	0	0	78	29	0	
4:45:00 PM	0	0	0	0	48	58	0	0	18	0	31	2	0	81	25	1	1001
5:00:00 PM	0	0	1	0	53	56	0	0	16	0	34	1	1	70	22	0	1002
5:15:00 PM	0	0	0	0	38	35	0	0	25	0	33	0	0	79	33	0	1005
5:30:00 PM	0	0	0	0	41	41	1	1	40	0	33	1	2	71	28	1	1021
5:45:00 PM	0	0	0	0	48	52	0	0	27	0	24	0	0	51	23	0	982

% Truck	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00:00 PM	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%	5%	0%	0%	6%	3%	0%
4:15:00 PM	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
4:30:00 PM	0%	0%	0%	0%	0%	2%	0%	0%	5%	0%	0%	0%	0%	3%	3%	0%
4:45:00 PM	0%	0%	0%	0%	6%	3%	0%	0%	6%	0%	3%	0%	0%	9%	0%	0%
5:00:00 PM	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%	3%	5%	0%
5:15:00 PM	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%
5:30:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
5:45:00 PM	0%	0%	0%	0%	2%	4%	0%	0%	0%	0%	4%	0%	0%	2%	0%	0%

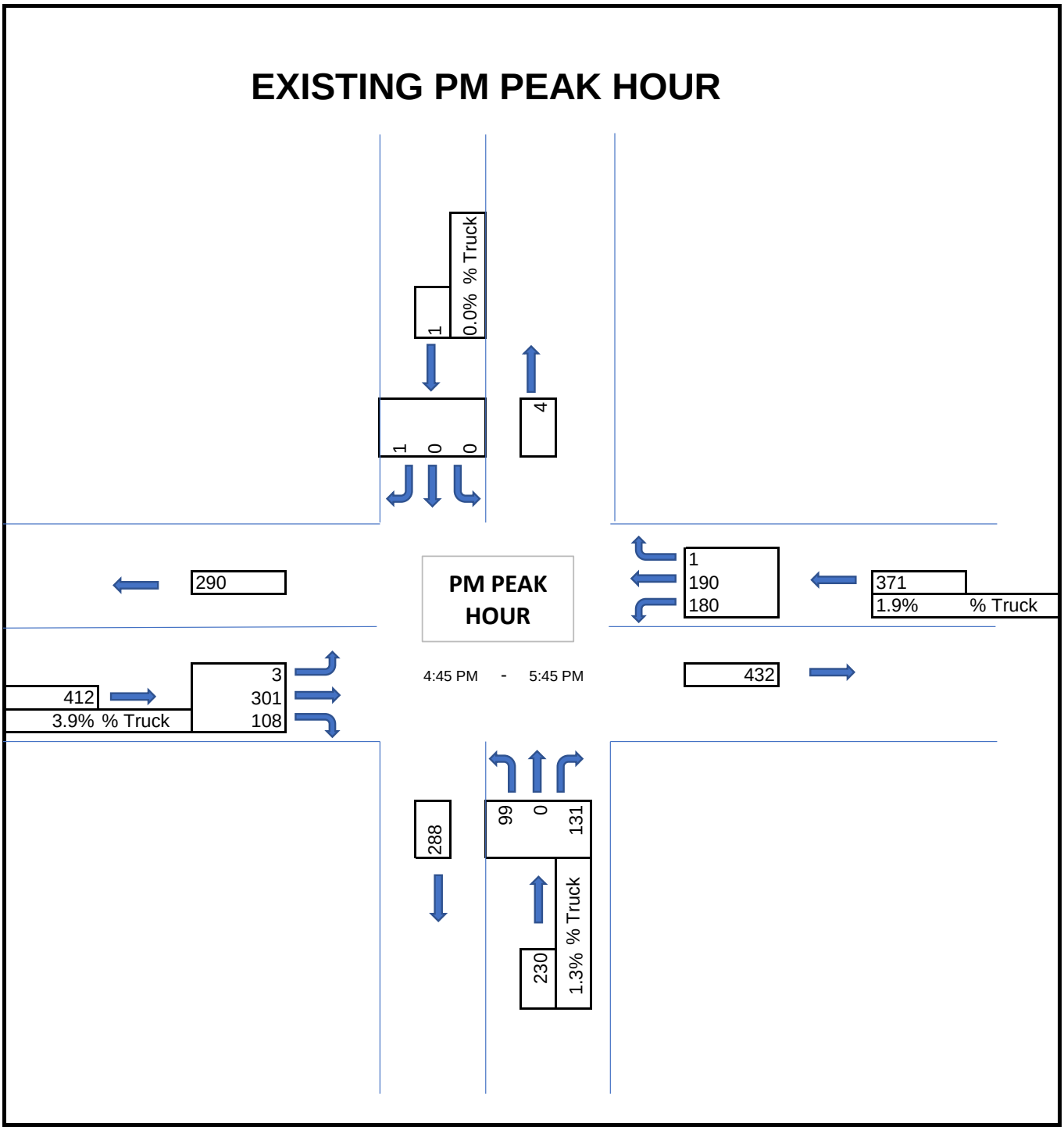
PEAK HOUR TOTAL	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:45:00 PM	0	0	0	0	48	58	0	0	18	0	31	2	0	81	25	1	
5:00:00 PM	0	0	1	0	53	56	0	0	16	0	34	1	1	70	22	0	
5:15:00 PM	0	0	0	0	38	35	0	0	25	0	33	0	0	79	33	0	
5:30:00 PM	0	0	0	0	41	41	1	1	40	0	33	1	2	71	28	1	1021
PEAK HOUR	**0**	**0**	**1**	**0**	**180**	**190**	**1**	**1**	**99**	**0**	**131**	**4**	**3**	**301**	**108**	**2**	

PEAK HOUR TRUCK PERCENT	N/A Southbound				PLEASANT STREET Westbound				PROSPECT STREET Northbound				PLEASANT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:45:00 PM	0	0	0	0	3	2	0	0	1	0	1	0	0	7	0	0	
5:00:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	2	1	0	
5:15:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	0	
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
PEAK HOUR	**#DIV/0!**	**#DIV/0!**	**0.0%**	**#DIV/0!**	**2.2%**	**1.6%**	**0.0%**	**0.0%**	**1.0%**	**#DIV/0!**	**1.5%**	**0.0%**	**0.0%**	**5.0%**	**0.9%**	**0.0%**	
Truck Percent on Enitre Approach		**0.0%**				**1.9%**				**1.3%**				**3.9%**			

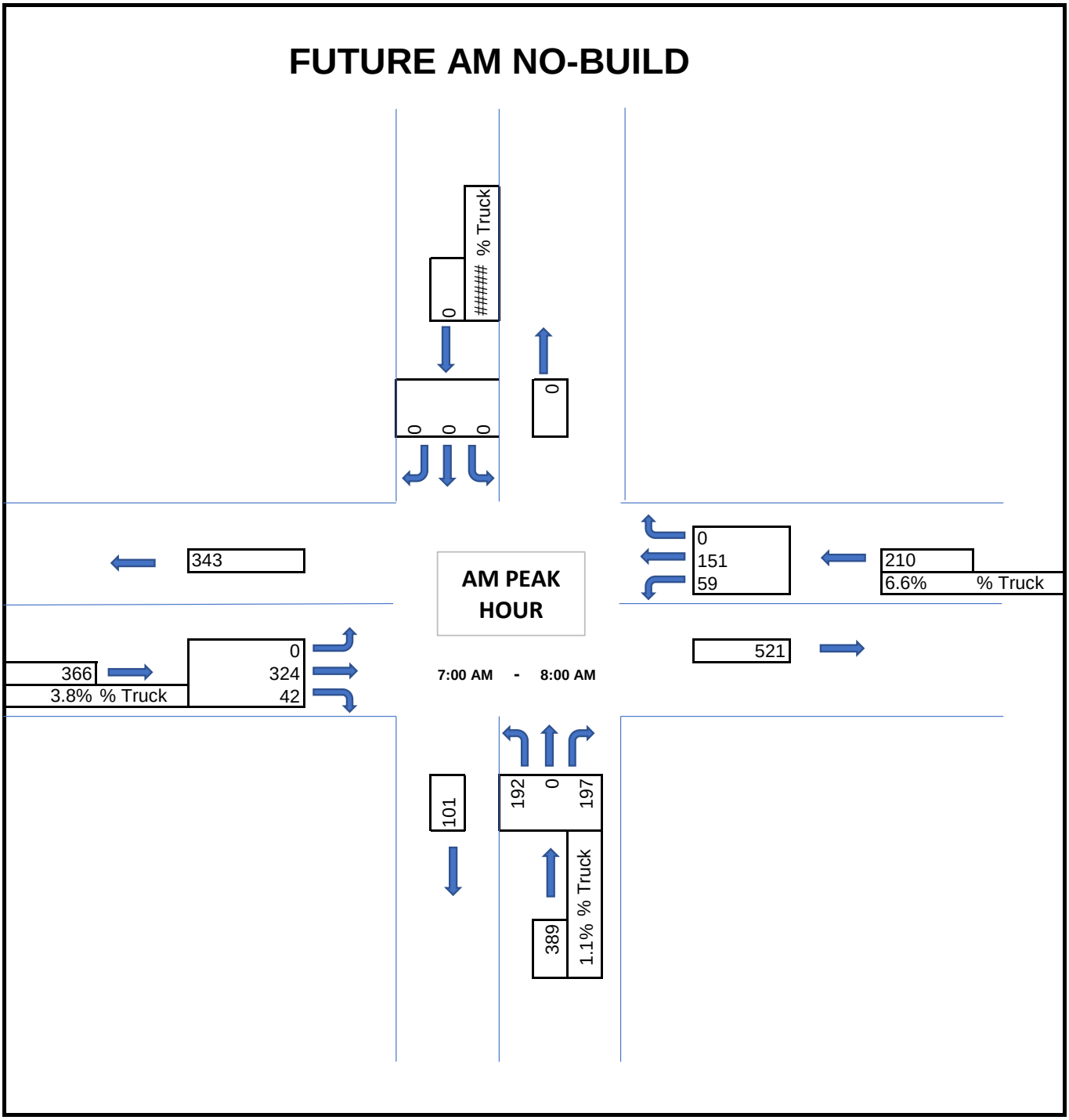
EXISTING AM PEAK HOUR



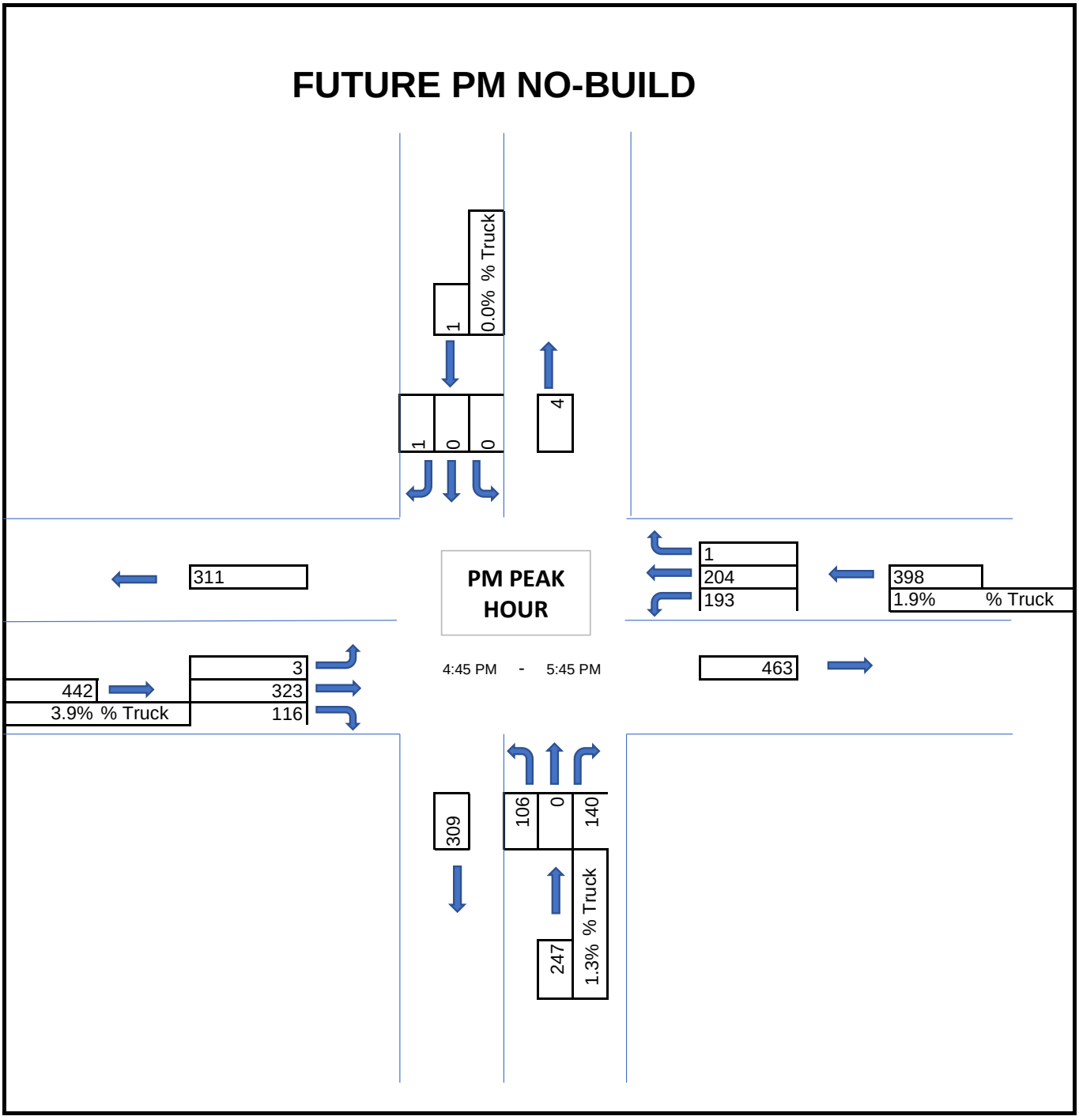
EXISTING PM PEAK HOUR



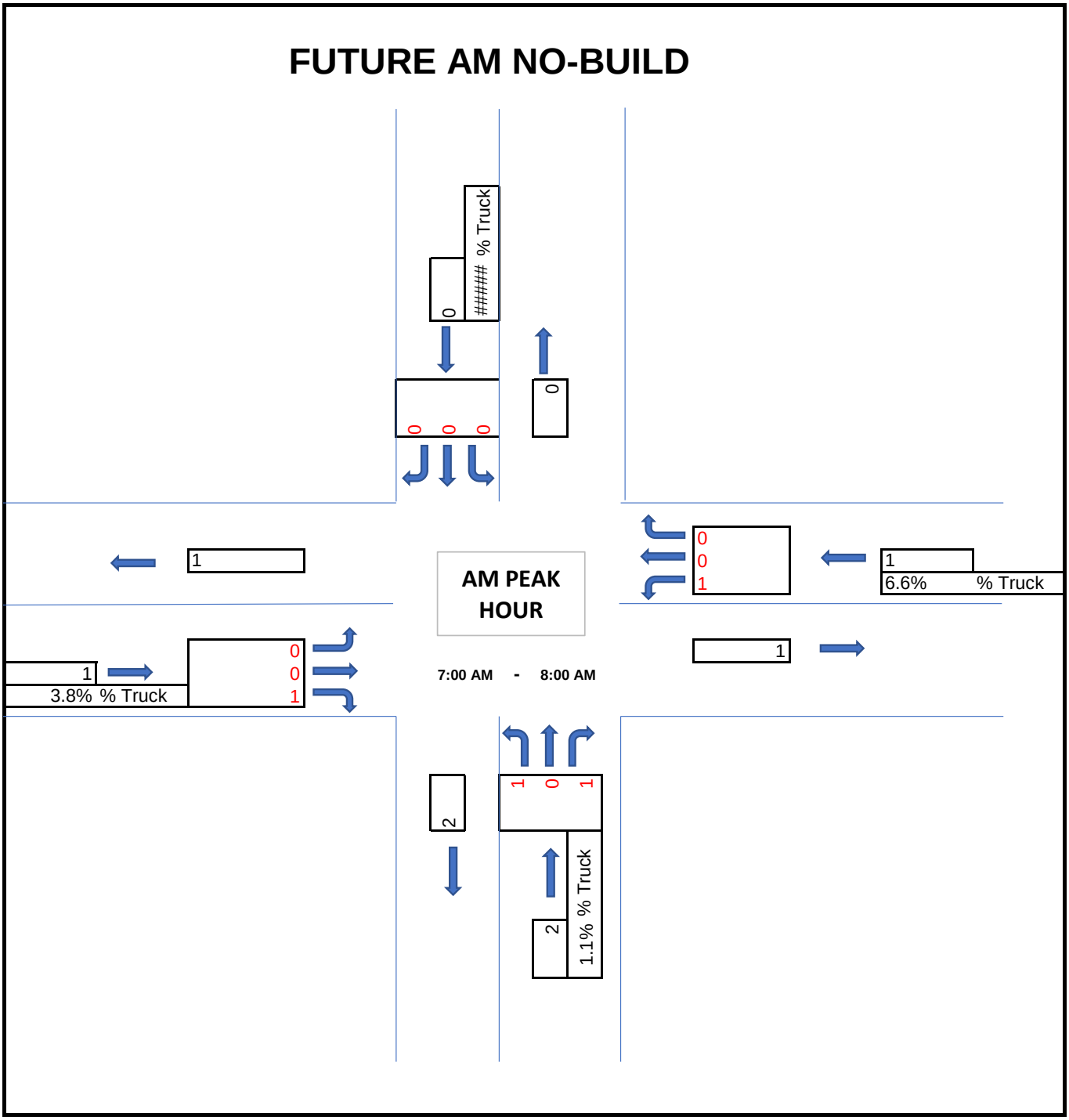
FUTURE AM NO-BUILD



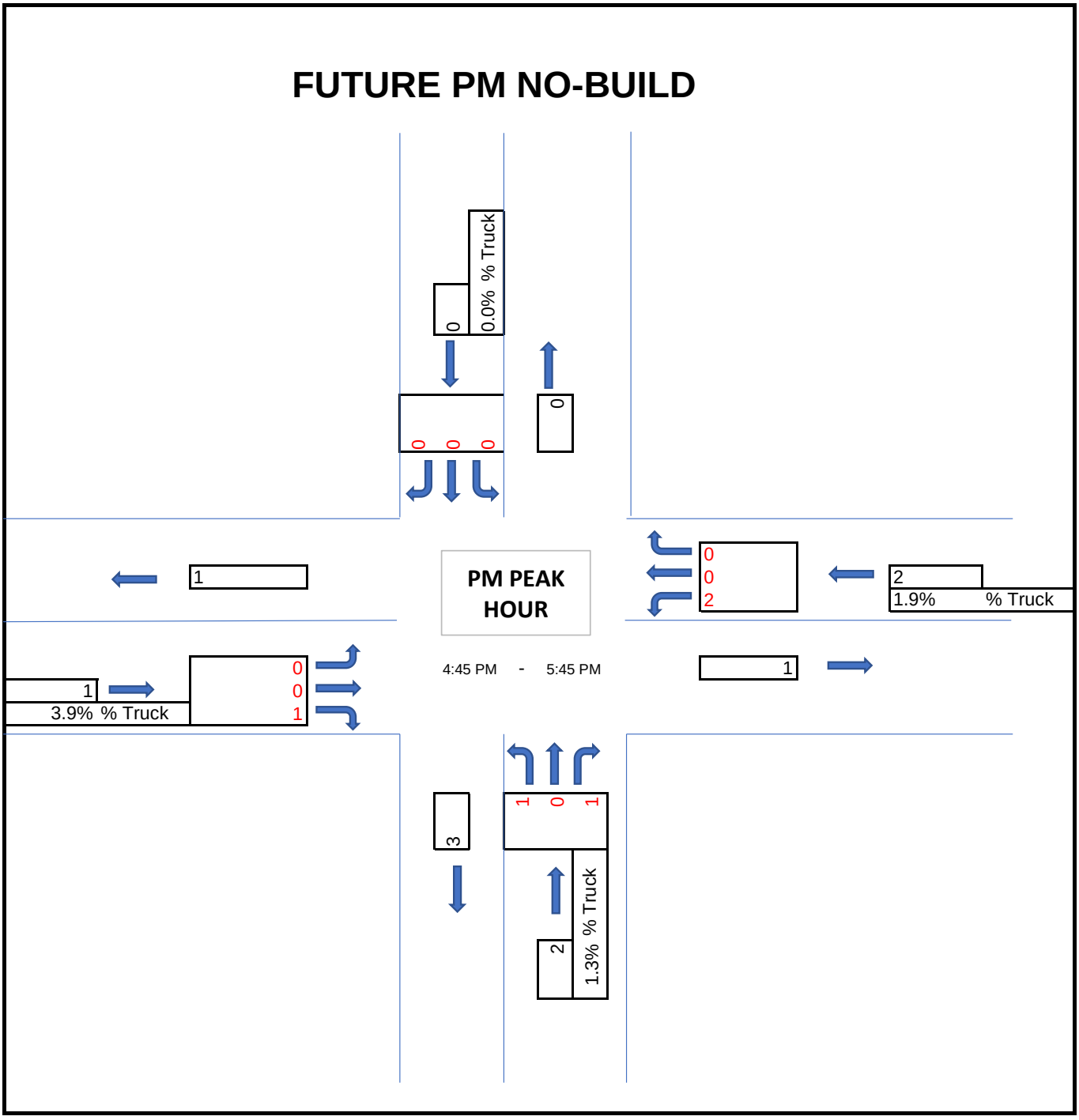
FUTURE PM NO-BUILD



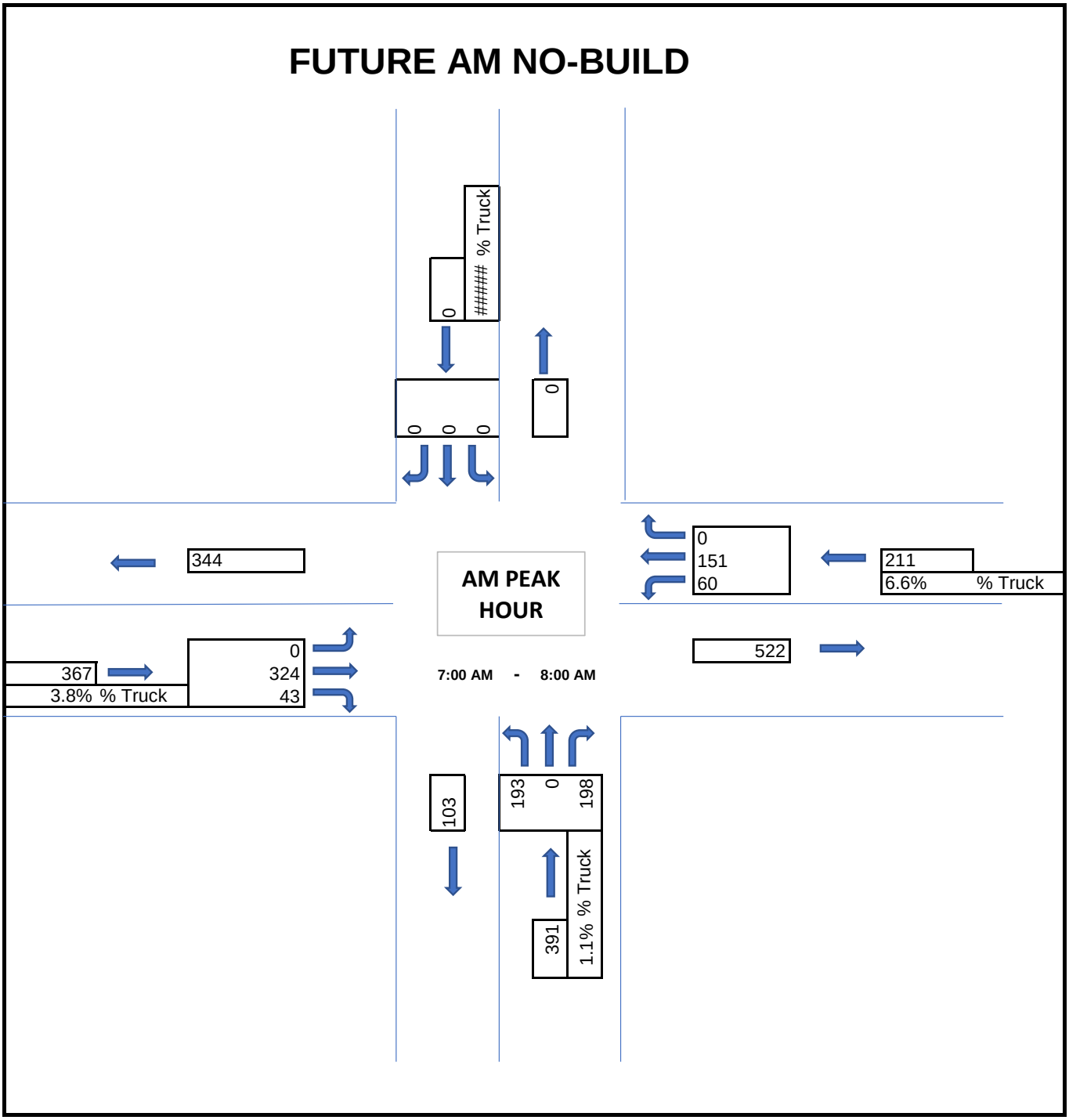
FUTURE AM NO-BUILD



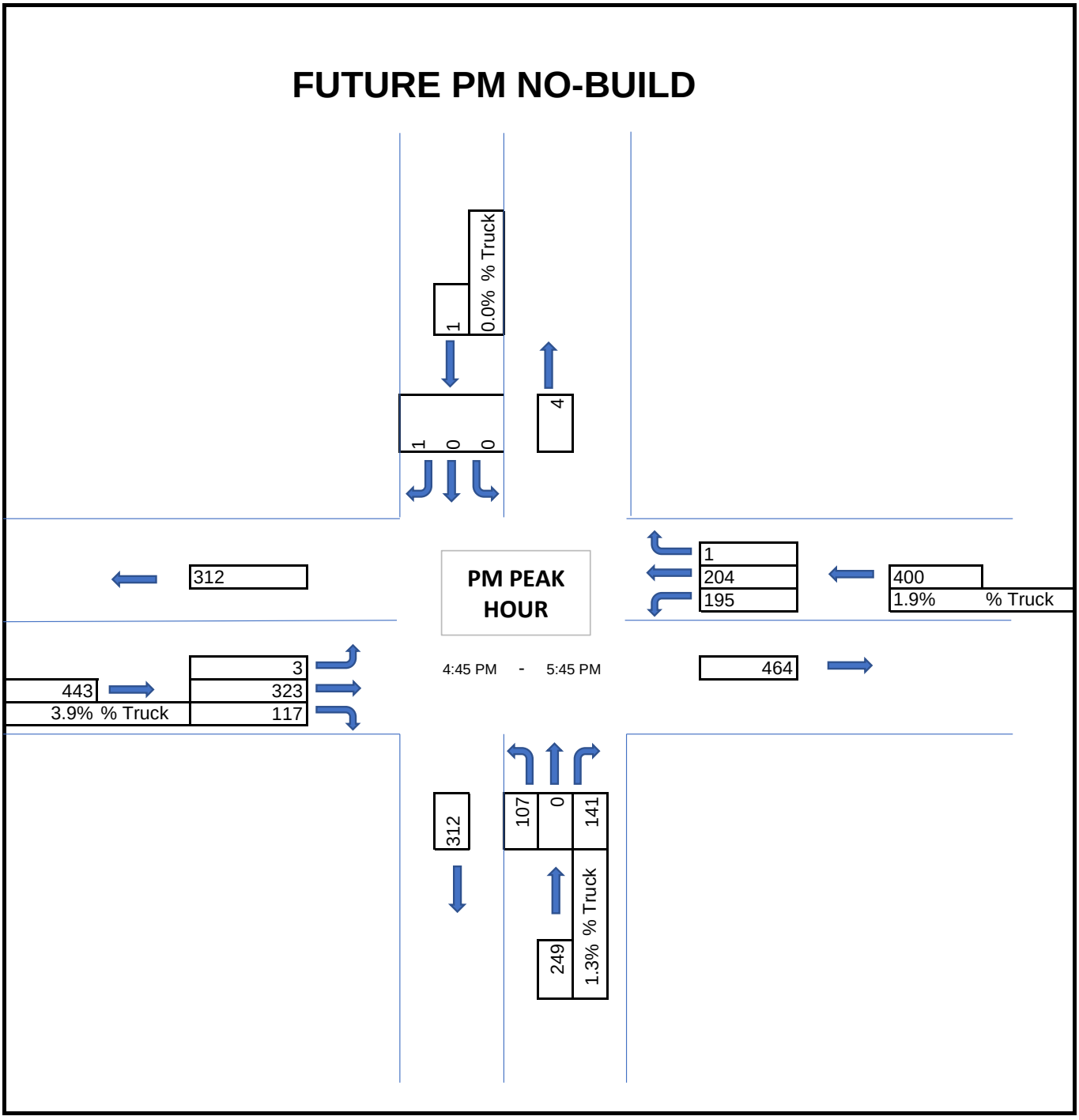
FUTURE PM NO-BUILD



FUTURE AM NO-BUILD



FUTURE PM NO-BUILD



Start Date: 11/21/2022

Start Time: 7:00:00 AM - 9:00:00 AM

Intersection: Prospect Street at Walnut Street

Municipality: Stoughton, MA

Base Year: 2022

Annual Growth Rate: 1.0%

Number of Projected Years: 7

CAR

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
7:00:00 AM	0	13	1	0	3	15	7	0	3	43	4	0	13	9	5	0	
7:15:00 AM	0	11	7	0	0	13	5	0	1	58	5	0	10	8	2	0	
7:30:00 AM	2	15	9	0	3	16	4	0	1	36	4	0	12	17	1	1	
7:45:00 AM	1	11	9	1	0	25	0	0	4	43	8	0	8	23	1	1	492
8:00:00 AM	0	8	22	1	4	22	1	0	1	33	5	0	12	12	2	3	502
8:15:00 AM	2	22	20	0	4	16	1	0	1	41	5	0	17	25	1	0	537
8:30:00 AM	0	17	19	0	5	15	0	0	0	26	5	0	21	13	4	0	541
8:45:00 AM	1	18	17	0	0	19	0	0	1	22	4	0	4	15	0	1	508

BIKE

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
7:15:00 AM	0	0	1	0	0	2	0	0	0	1	1	0	0	0	0	0	
7:30:00 AM	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0	
7:45:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	15
8:00:00 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:15:00 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	17
8:30:00 AM	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	16
8:45:00 AM	0	1	1	0	0	2	0	0	0	2	0	0	0	0	0	0	19

TOTAL

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	14	1	0	3	15	7	0	3	44	4	0	13	9	5	0	
7:15:00 AM	0	11	8	0	0	15	5	0	1	59	6	0	10	8	2	0	
7:30:00 AM	2	16	10	0	3	17	4	0	1	37	4	0	12	18	1	1	
7:45:00 AM	1	12	9	1	0	25	0	0	4	43	8	0	8	25	1	1	507
8:00:00 AM	0	8	27	1	4	22	1	0	1	33	5	0	12	12	2	3	520
8:15:00 AM	2	22	22	0	4	16	1	0	1	42	5	0	17	26	1	0	554
8:30:00 AM	0	19	19	0	5	16	0	0	0	27	5	0	21	13	4	0	557
8:45:00 AM	1	19	18	0	0	21	0	0	1	24	4	0	4	15	0	1	527

% Truck

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00:00 AM	0%	7%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%
7:15:00 AM	0%	0%	13%	0%	0%	13%	0%	0%	0%	2%	17%	0%	0%	0%	0%	0%
7:30:00 AM	0%	6%	10%	0%	0%	6%	0%	0%	0%	3%	0%	0%	0%	6%	0%	0%
7:45:00 AM	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%
8:00:00 AM	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8:15:00 AM	0%	0%	9%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	4%	0%	0%
8:30:00 AM	0%	11%	0%	0%	0%	6%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%
8:45:00 AM	0%	5%	6%	0%	0%	10%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%

PEAK HOUR TOTAL

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:45:00 AM	1	12	9	1	0	25	0	0	4	43	8	0	8	25	1	1	
8:00:00 AM	0	8	27	1	4	22	1	0	1	33	5	0	12	12	2	3	
8:15:00 AM	2	22	22	0	4	16	1	0	1	42	5	0	17	26	1	0	
8:30:00 AM	0	19	19	0	5	16	0	0	0	27	5	0	21	13	4	0	557
PEAK HOUR	**3**	**61**	**77**	**2**	**13**	**79**	**2**	**0**	**6**	**145**	**23**	**0**	**58**	**76**	**8**	**4**	

PEAK HOUR TRUCK PERCENT

	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:45:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	
8:00:00 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15:00 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	
8:30:00 AM	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
PEAK HOUR	**0.0%**	**4.9%**	**9.1%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**#DIV/0!**	**0.0%**	**1.4%**	**0.0%**	**#DIV/0!**	**0.0%**	**3.9%**	**0.0%**	**0.0%**	
Truck Percent on Enitre Approach		**7.1%**				**1.1%**				**1.1%**				**2.1%**			

Start Date: 44886 **Base Year:** 2022

Start Time: **4:00:00 PM** - 6:00:00 PM **Annual Growth Rate:** 1.0%

Intersection: Prospect Street at Walnut Street **Number of Projected Years:** 7

Municipality: Stoughton, MA

CAR	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
4:00:00 PM	1	45	18	1	4	26	4	0	0	26	9	0	5	24	1	0	
4:15:00 PM	4	53	29	2	11	32	0	0	2	31	5	1	11	19	7	2	
4:30:00 PM	3	41	33	0	5	24	1	0	0	38	7	0	11	24	4	0	
4:45:00 PM	1	38	27	0	9	28	2	1	2	38	8	1	12	17	2	1	751
5:00:00 PM	3	52	20	0	3	33	2	0	0	28	7	0	16	30	3	0	784
5:15:00 PM	4	33	28	0	7	29	4	0	5	39	5	0	12	24	4	1	770
5:30:00 PM	2	35	16	0	7	27	3	0	3	42	4	0	5	22	0	0	745
5:45:00 PM	1	24	20	0	2	23	4	0	2	23	4	0	8	16	2	0	687

BIKE	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	1	4	0	0	2	0	0	0	0	0	0	0	0	0	0	
4:15:00 PM	0	1	1	0	0	0	0	0	0	1	1	0	0	1	0	0	
4:30:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	15
5:00:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9
5:15:00 PM	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	8
5:30:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

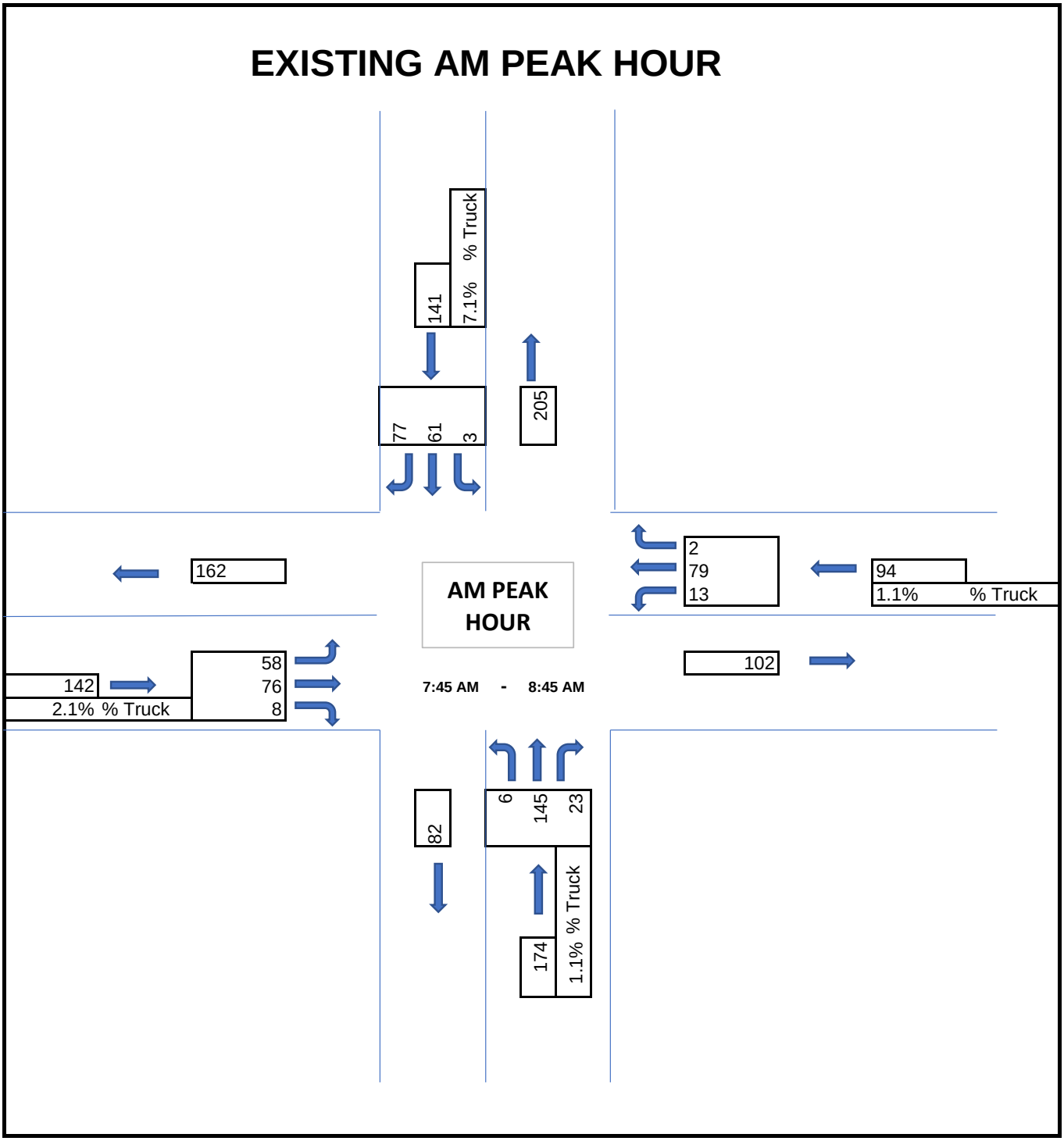
TOTAL	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	1	46	22	1	4	28	4	0	0	26	9	0	5	24	1	0	
4:15:00 PM	4	54	30	2	11	32	0	0	2	32	6	1	11	20	7	2	
4:30:00 PM	3	41	34	0	5	24	1	0	0	38	7	0	11	24	4	0	
4:45:00 PM	1	38	29	0	9	28	2	1	2	38	8	1	12	17	2	1	766
5:00:00 PM	3	52	20	0	4	33	2	0	0	28	7	0	16	30	3	0	793
5:15:00 PM	4	33	28	0	9	29	4	0	5	40	5	0	13	24	4	1	778
5:30:00 PM	2	36	16	0	7	27	3	0	3	42	4	0	5	22	0	0	753
5:45:00 PM	1	24	20	0	2	23	4	0	2	23	4	0	8	16	2	0	693

% Truck	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00:00 PM	0%	2%	18%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4:15:00 PM	0%	2%	3%	0%	0%	0%	0%	0%	0%	3%	17%	0%	0%	5%	0%	0%
4:30:00 PM	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4:45:00 PM	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5:00:00 PM	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5:15:00 PM	0%	0%	0%	0%	22%	0%	0%	0%	0%	3%	0%	0%	8%	0%	0%	0%
5:30:00 PM	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5:45:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

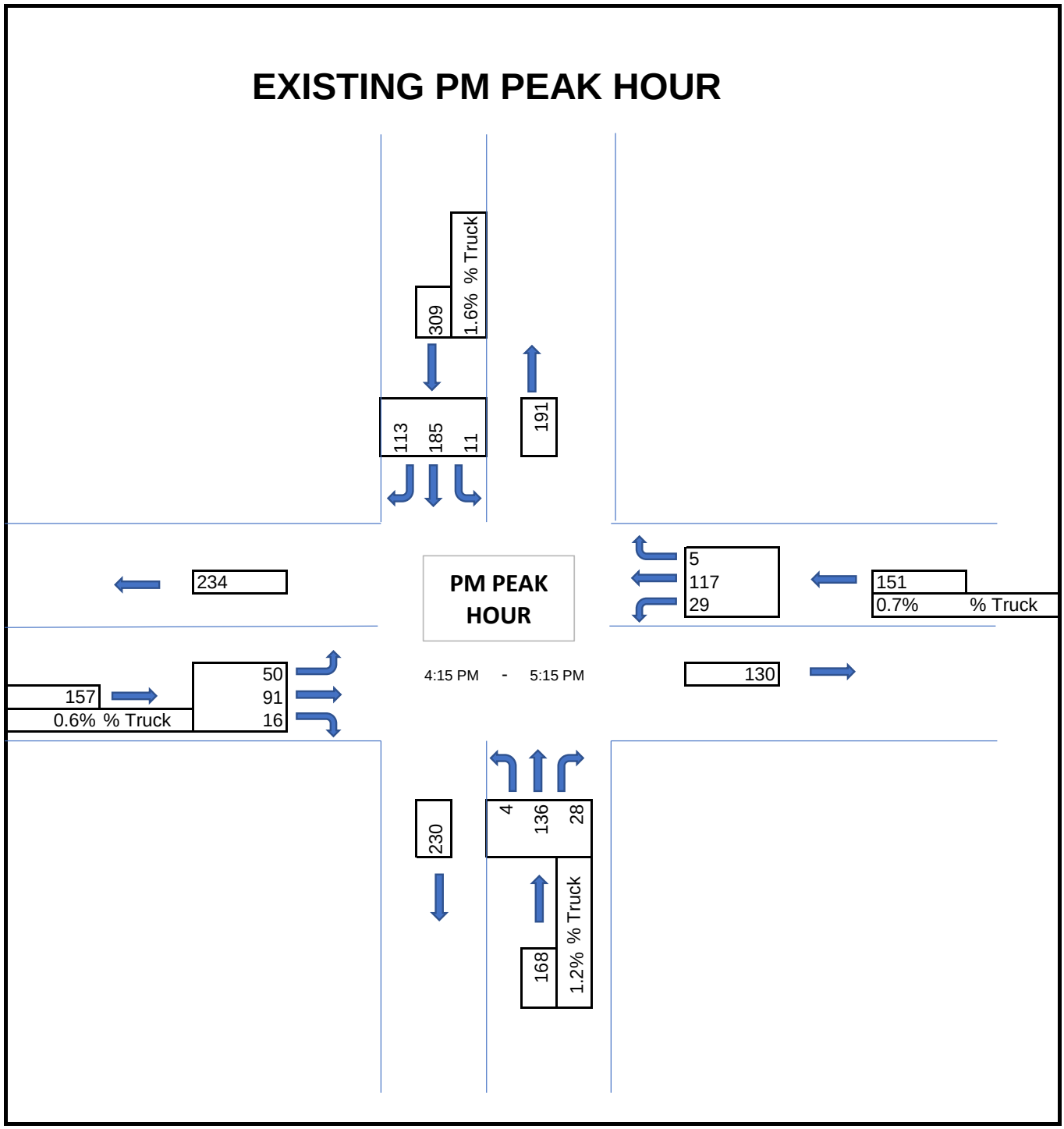
PEAK HOUR TOTAL	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:15:00 PM	4	54	30	2	11	32	0	0	2	32	6	1	11	20	7	2	
4:30:00 PM	3	41	34	0	5	24	1	0	0	38	7	0	11	24	4	0	
4:45:00 PM	1	38	29	0	9	28	2	1	2	38	8	1	12	17	2	1	
5:00:00 PM	3	52	20	0	4	33	2	0	0	28	7	0	16	30	3	0	793
PEAK HOUR	**11**	**185**	**113**	**2**	**29**	**117**	**5**	**1**	**4**	**136**	**28**	**2**	**50**	**91**	**16**	**3**	

PEAK HOUR TRUCK PERCENT	PROSPECT STREET Southbound				WALNUT STREET Westbound				PROSPECT STREET Northbound				WALNUT STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:15:00 PM	0	1	1	0	0	0	0	0	0	1	1	0	0	1	0	0	
4:30:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOUR	**0%**	**1%**	**4%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**1%**	**4%**	**0%**	**0%**	**1%**	**0%**	**0%**	
Truck Percent on Enitre Approach		**1.6%**				**0.7%**				**1.2%**				**0.6%**			

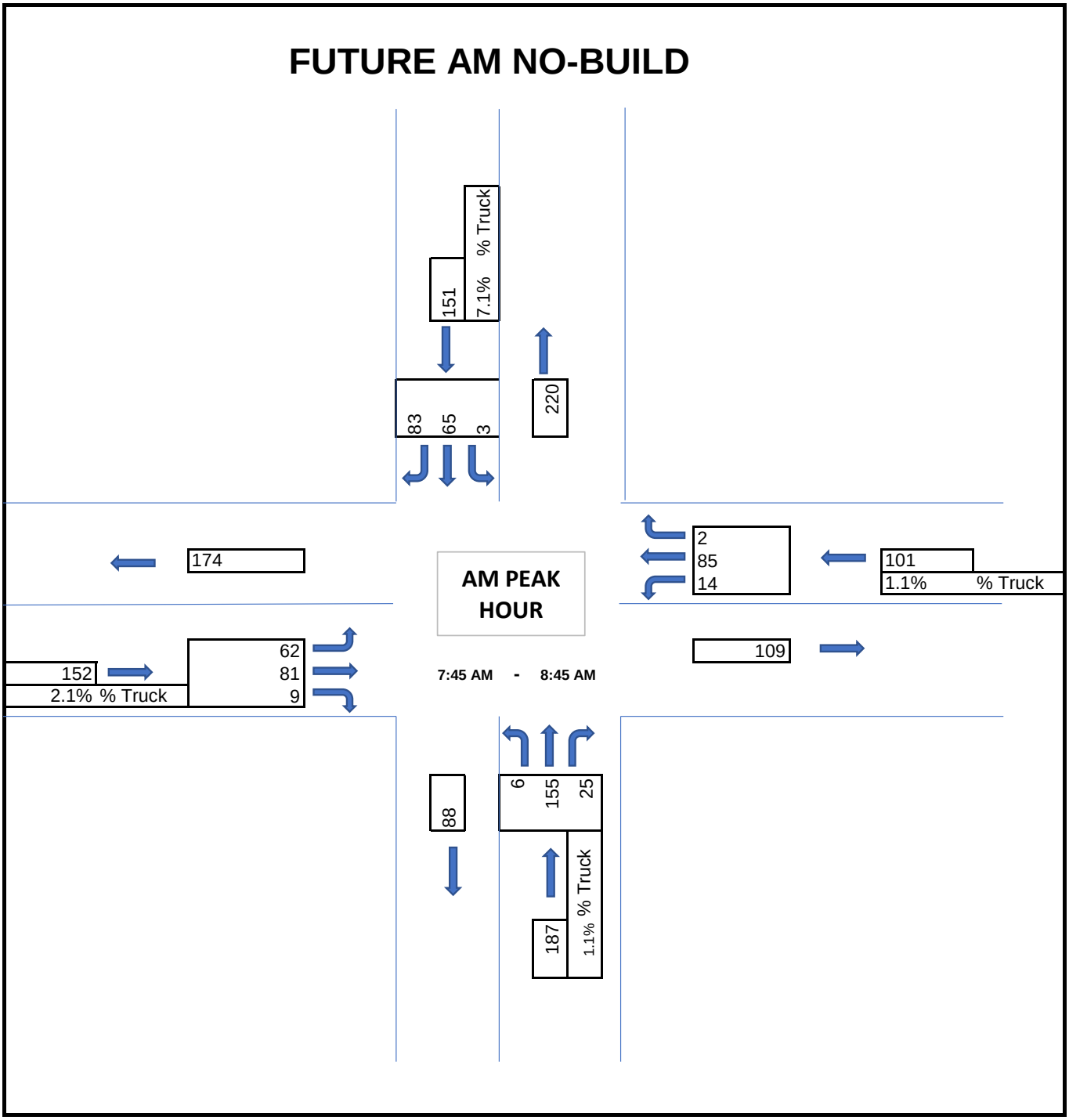
EXISTING AM PEAK HOUR



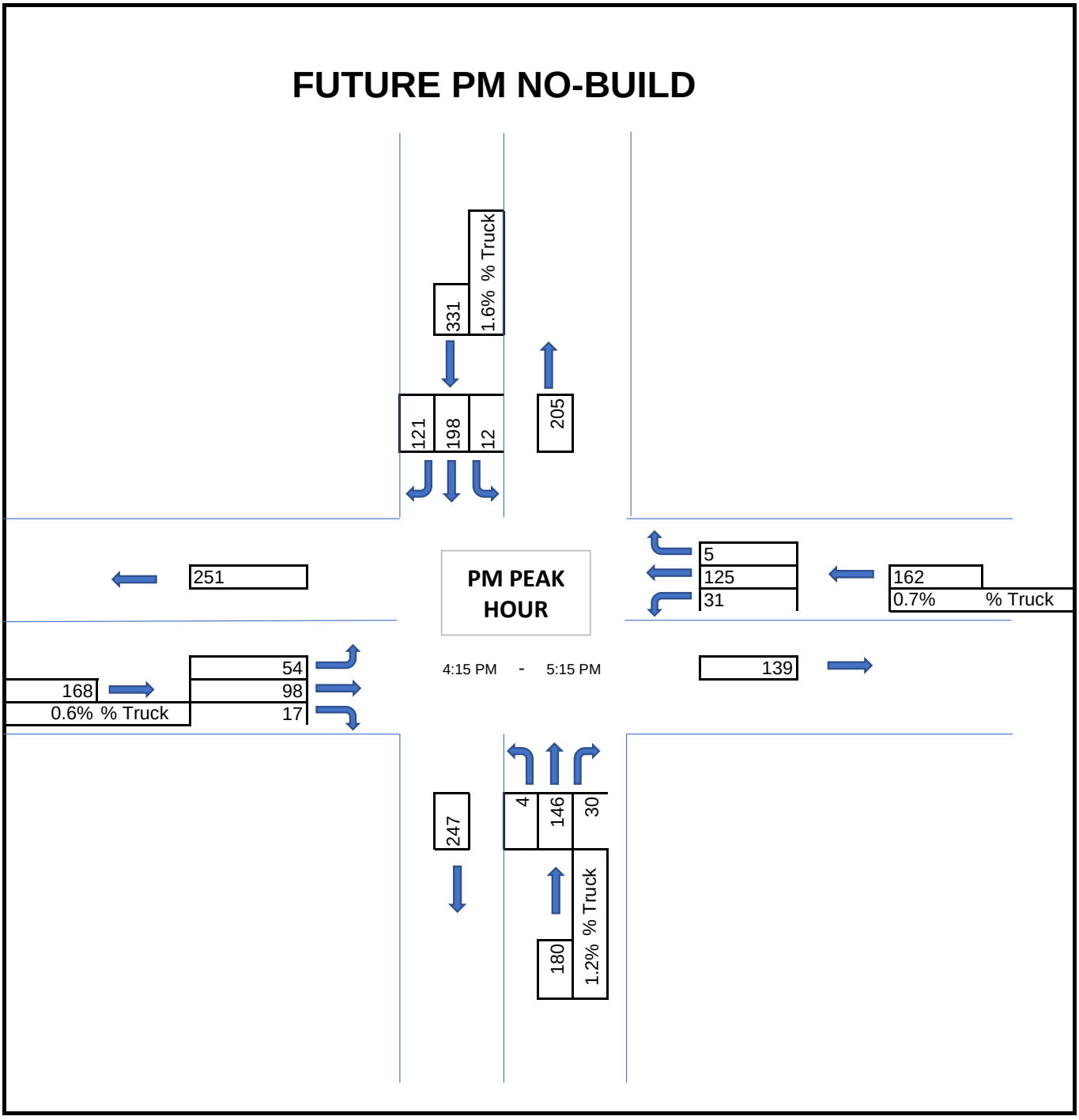
EXISTING PM PEAK HOUR



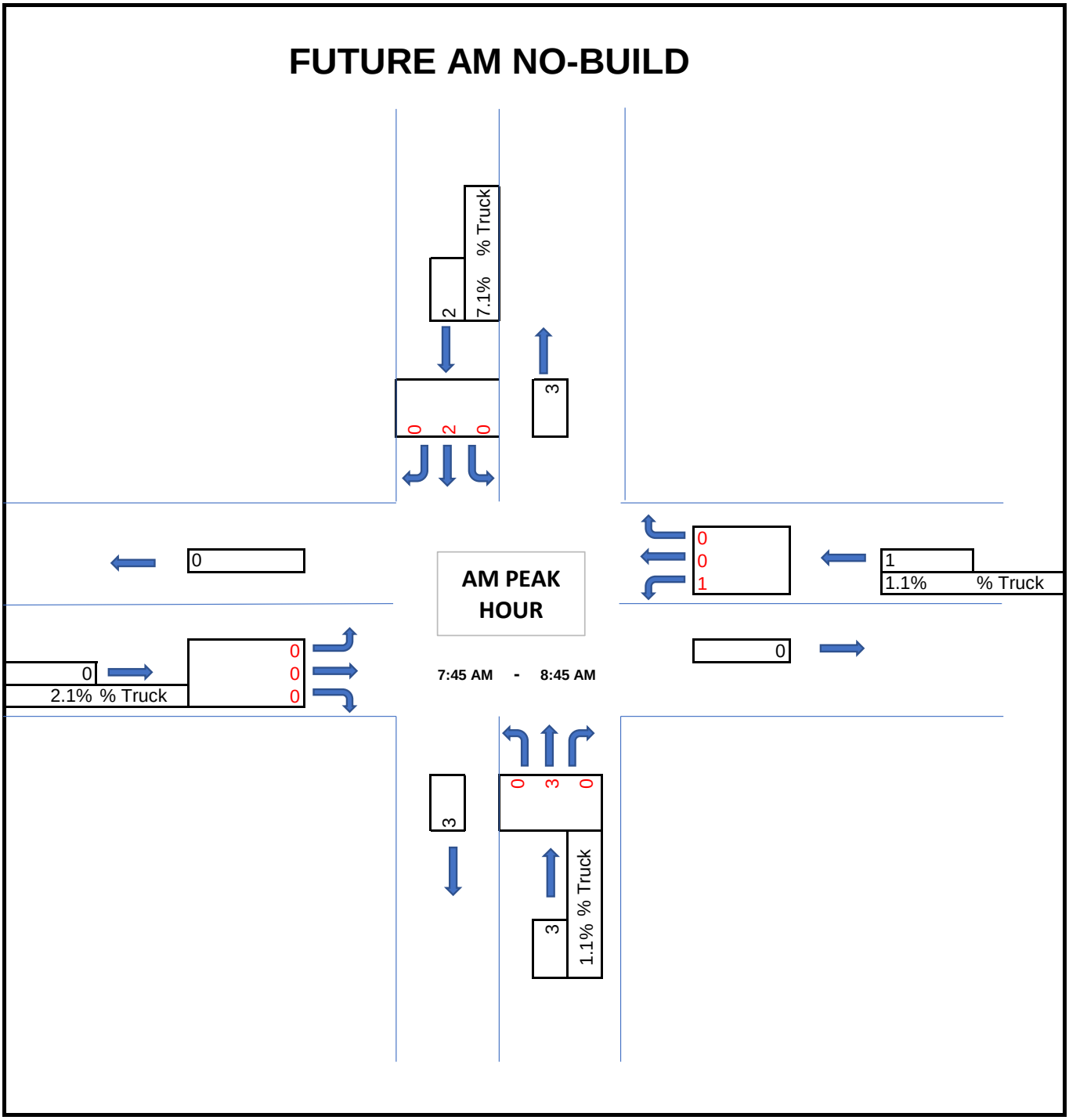
FUTURE AM NO-BUILD



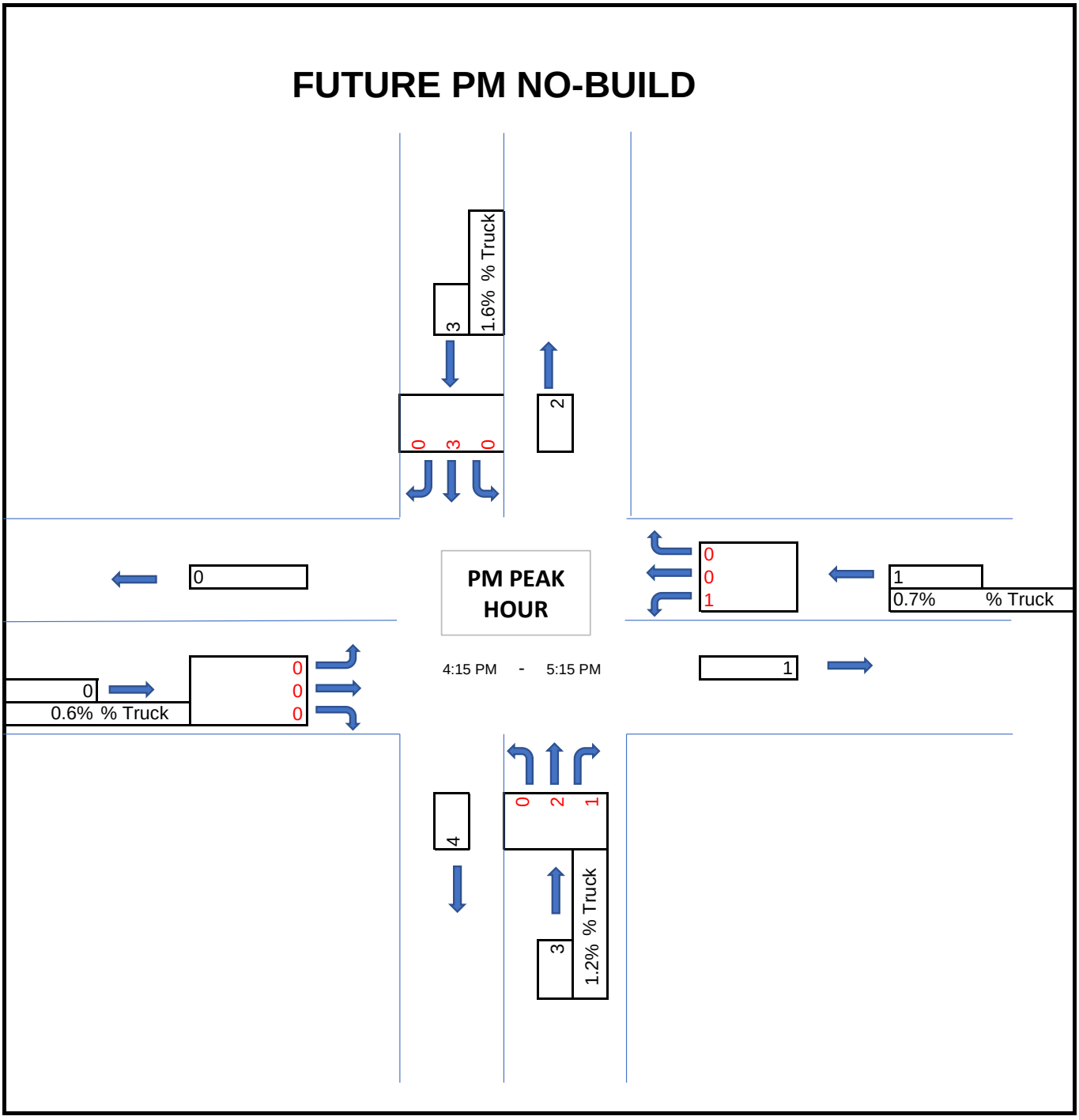
FUTURE PM NO-BUILD



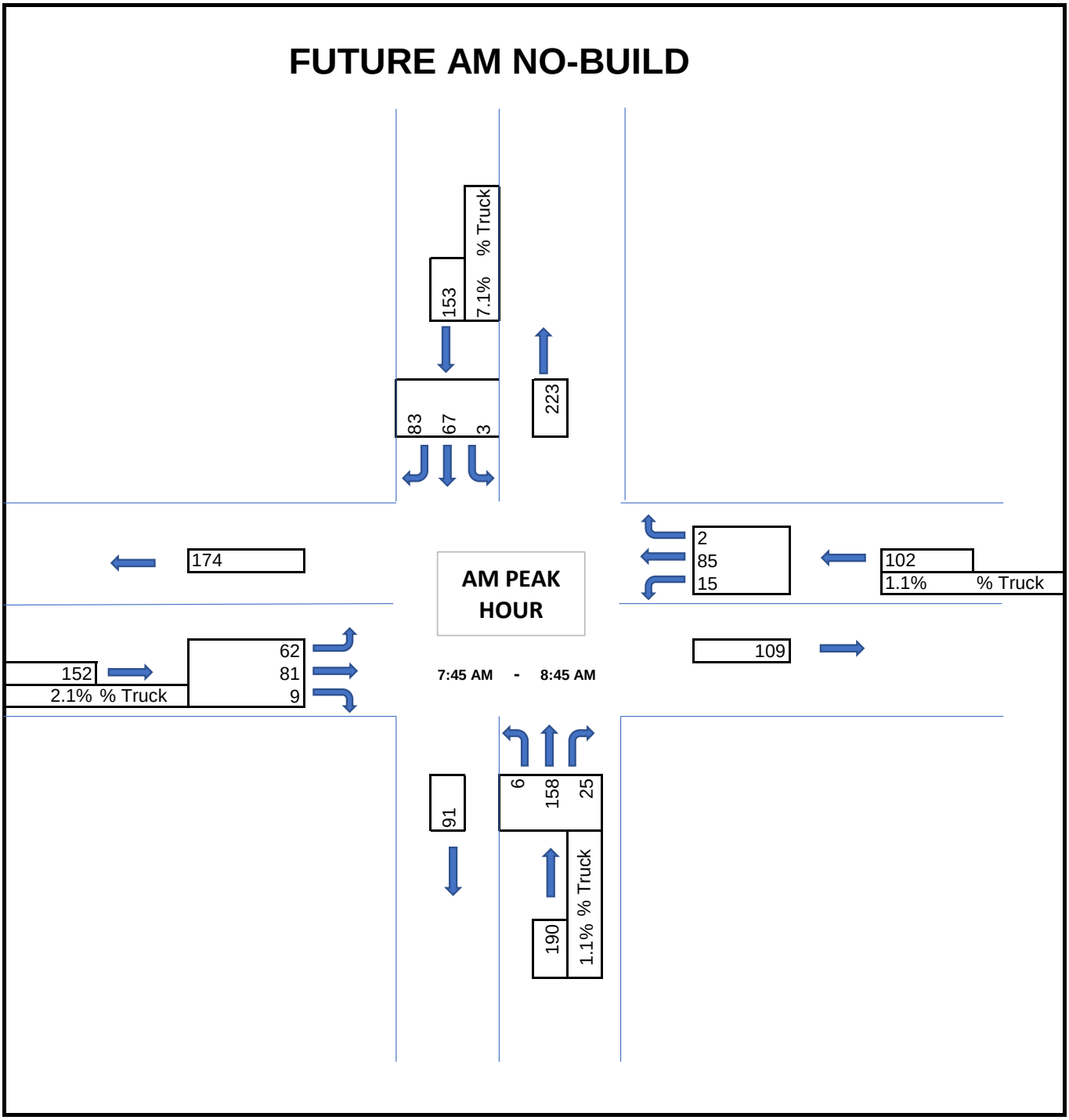
FUTURE AM NO-BUILD



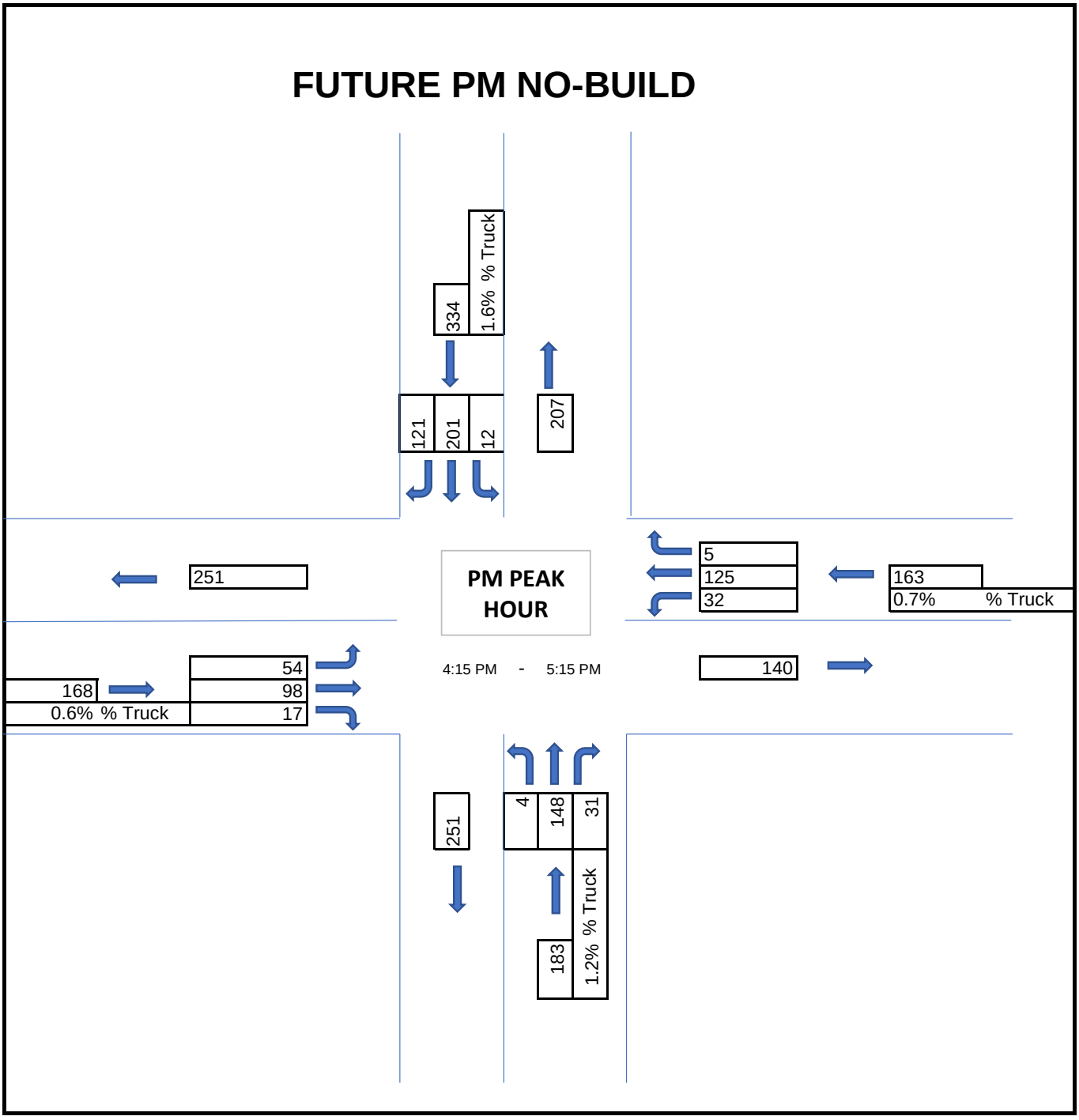
FUTURE PM NO-BUILD



FUTURE AM NO-BUILD



FUTURE PM NO-BUILD



Start Date: 11/16/2022 — Base Year: 2022

Start Time: 7:00:00 AM - 9:00:00 AM — Annual Growth Rate: 1.0%

Intersection: Park Street at Prospect Street and Alder Street — Number of Projected Years: 7

Municipality: Stoughton, MA

CAR	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
7:00:00 AM	0	16	2	0	0	0	0	0	146	43	0	0	3	0	64	3	
7:15:00 AM	0	8	2	0	0	0	0	0	158	46	0	0	3	1	68	0	
7:30:00 AM	0	19	2	0	0	0	0	0	144	62	0	0	1	0	85	0	
7:45:00 AM	0	22	4	0	0	0	0	0	129	35	1	0	1	0	99	0	1167
8:00:00 AM	0	19	0	0	0	0	0	0	106	34	0	0	1	0	110	0	1160
8:15:00 AM	0	22	0	0	1	0	0	0	116	41	0	0	2	1	95	0	1152
8:30:00 AM	0	18	1	0	0	0	1	0	115	24	2	0	2	0	113	1	1116
8:45:00 AM	0	17	1	0	1	0	0	0	104	27	0	0	2	0	82	0	1059

BIKE	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	1	0	0	0	0	0	0	6	2	0	0	0	0	3	0	
7:15:00 AM	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	0	
7:30:00 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	
7:45:00 AM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	10	0	39
8:00:00 AM	0	3	0	0	0	0	0	0	6	2	0	0	0	0	4	0	42
8:15:00 AM	0	0	0	0	0	0	0	0	6	0	0	0	1	0	8	0	49
8:30:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	46
8:45:00 AM	0	1	0	0	0	0	0	0	3	1	0	0	0	0	6	0	44

TOTAL	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	17	2	0	0	0	0	0	152	45	0	0	3	0	67	3	
7:15:00 AM	0	8	2	0	0	0	0	0	161	47	0	0	3	1	72	0	
7:30:00 AM	0	19	2	0	0	0	0	0	148	62	0	0	1	0	87	0	
7:45:00 AM	0	23	4	0	0	0	0	0	131	35	1	0	1	0	109	0	1206
8:00:00 AM	0	22	0	0	0	0	0	0	112	36	0	0	1	0	114	0	1202
8:15:00 AM	0	22	0	0	1	0	0	0	122	41	0	0	3	1	103	0	1201
8:30:00 AM	0	18	1	0	0	0	1	0	117	24	2	0	2	0	114	1	1162
8:45:00 AM	0	18	1	0	1	0	0	0	107	28	0	0	2	0	88	0	1103

% Truck	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00:00 AM	0%	6%	0%	0%	0%	0%	0%	0%	4%	4%	0%	0%	0%	0%	4%	0%
7:15:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%	6%	0%
7:30:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	2%	0%
7:45:00 AM	0%	4%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	9%	0%
8:00:00 AM	0%	14%	0%	0%	0%	0%	0%	0%	5%	6%	0%	0%	0%	0%	4%	0%
8:15:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	33%	0%	8%	0%
8:30:00 AM	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	1%	0%
8:45:00 AM	0%	6%	0%	0%	0%	0%	0%	0%	3%	4%	0%	0%	0%	0%	7%	0%

PEAK HOUR TOTAL	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	17	2	0	0	0	0	0	152	45	0	0	3	0	67	3	
7:15:00 AM	0	8	2	0	0	0	0	0	161	47	0	0	3	1	72	0	
7:30:00 AM	0	19	2	0	0	0	0	0	148	62	0	0	1	0	87	0	
7:45:00 AM	0	23	4	0	0	0	0	0	131	35	1	0	1	0	109	0	1206
PEAK HOUR	**0**	**67**	**10**	**0**	**0**	**0**	**0**	**0**	**592**	**189**	**1**	**0**	**8**	**1**	**335**	**3**	

PEAK HOUR TRUCK PERCENT	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
7:00:00 AM	0	1	0	0	0	0	0	0	6	2	0	0	0	0	3	0	
7:15:00 AM	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	0	
7:30:00 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2	0	
7:45:00 AM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	10	0	0
PEAK HOUR	**#DIV/0!**	**3.0%**	**0.0%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**2.5%**	**1.6%**	**0.0%**	**#DIV/0!**	**0.0%**	**0.0%**	**5.7%**	**0.0%**	
Truck Percent on Enitre Approach		**2.6%**				**#DIV/0!**				**2.3%**				**5.5%**			

Start Date: 11/16/2022 **Base Year:** 2022

Start Time: **4:00:00 PM** - 6:00:00 PM **Annual Growth Rate:** 1.0%

Intersection: Park Street at Prospect Street and Alder Street **Number of Projected Years:** 7

Municipality: Stoughton, MA

CAR	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL
4:00:00 PM	0	40	7	0	0	0	0	0	104	38	0	1	1	0	126	0	
4:15:00 PM	0	49	9	0	0	1	0	0	113	42	1	0	2	0	127	0	
4:30:00 PM	0	40	7	0	0	0	0	0	101	41	0	0	3	0	139	0	
4:45:00 PM	0	40	4	0	0	1	0	0	96	36	0	0	2	0	144	0	1315
5:00:00 PM	0	28	3	0	0	0	0	0	122	37	0	0	2	0	134	0	1324
5:15:00 PM	0	46	4	0	1	0	0	0	99	15	0	0	3	0	129	0	1277
5:30:00 PM	0	24	3	0	0	0	0	0	121	28	0	0	4	1	133	0	1260
5:45:00 PM	0	33	4	0	0	1	0	0	87	26	0	0	2	0	118	0	1208

BIKE	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUCK	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
4:15:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	
4:30:00 PM	0	0	0	0	0	0	0	0	5	1	0	0	0	0	1	0	
4:45:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	20
5:00:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	4	0	24
5:15:00 PM	0	0	1	0	0	0	0	0	2	0	0	0	0	0	3	0	23
5:30:00 PM	0	1	0	0	0	0	0	0	3	0	0	0	0	0	2	0	22
5:45:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	21

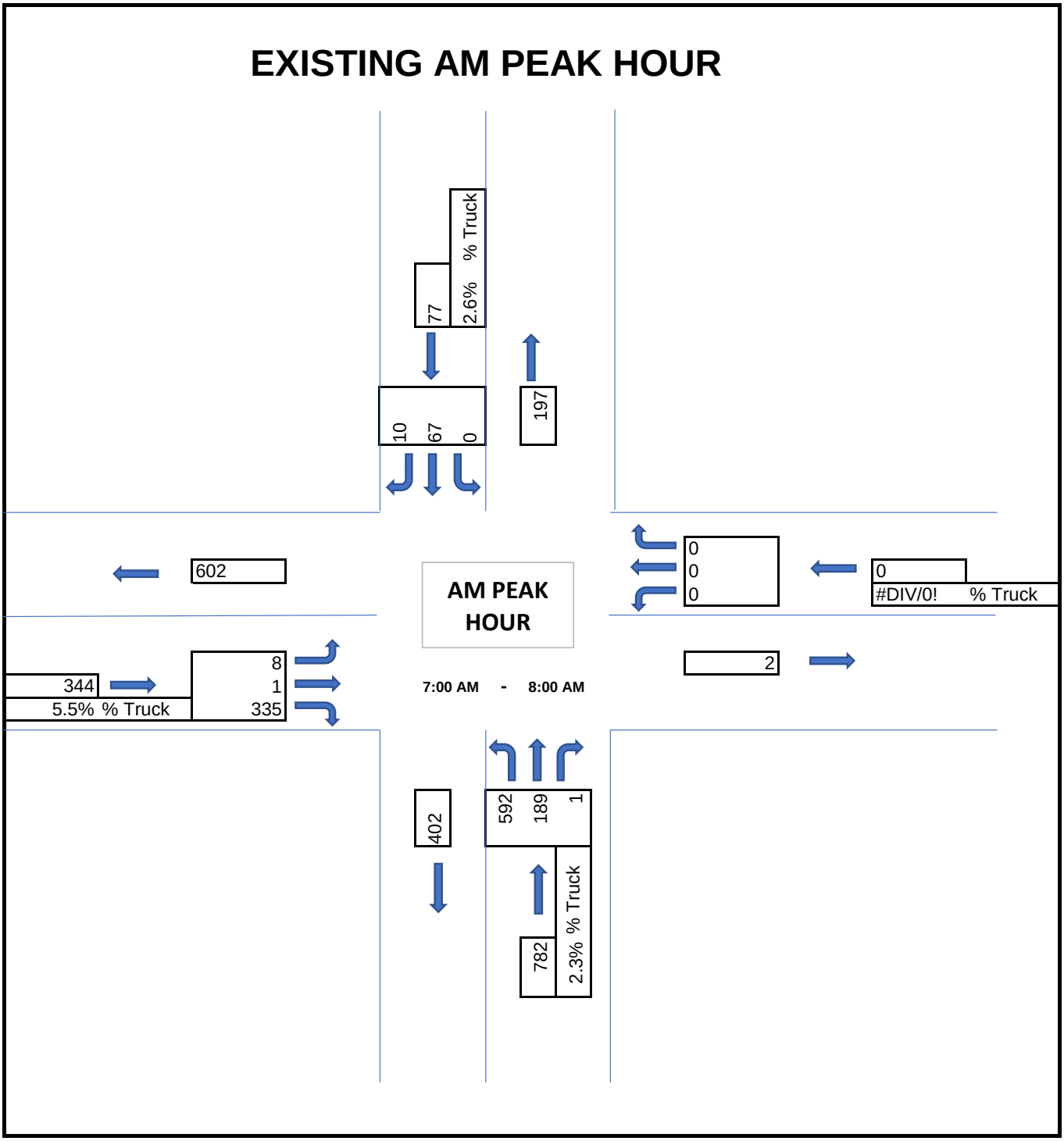
TOTAL	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:00:00 PM	0	40	7	0	0	0	0	0	104	38	0	1	1	0	128	0	
4:15:00 PM	0	49	9	0	0	1	0	0	115	42	1	0	2	0	132	0	
4:30:00 PM	0	40	7	0	0	0	0	0	106	42	0	0	3	0	140	0	
4:45:00 PM	0	40	4	0	0	1	0	0	97	37	0	0	2	0	146	0	1335
5:00:00 PM	0	29	3	0	0	0	0	0	123	37	0	0	2	0	138	0	1348
5:15:00 PM	0	46	5	0	1	0	0	0	101	15	0	0	3	0	132	0	1300
5:30:00 PM	0	25	3	0	0	0	0	0	124	28	0	0	4	1	135	0	1282
5:45:00 PM	0	34	4	0	0	1	0	0	87	26	0	0	2	0	120	0	1229

% Truck	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound			
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
4:15:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	4%	0%
4:30:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	5%	2%	0%	0%	0%	0%	1%	0%
4:45:00 PM	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	0%	0%	0%	0%	1%	0%
5:00:00 PM	0%	3%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	3%	0%
5:15:00 PM	0%	0%	20%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	0%
5:30:00 PM	0%	4%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	1%	0%
5:45:00 PM	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%

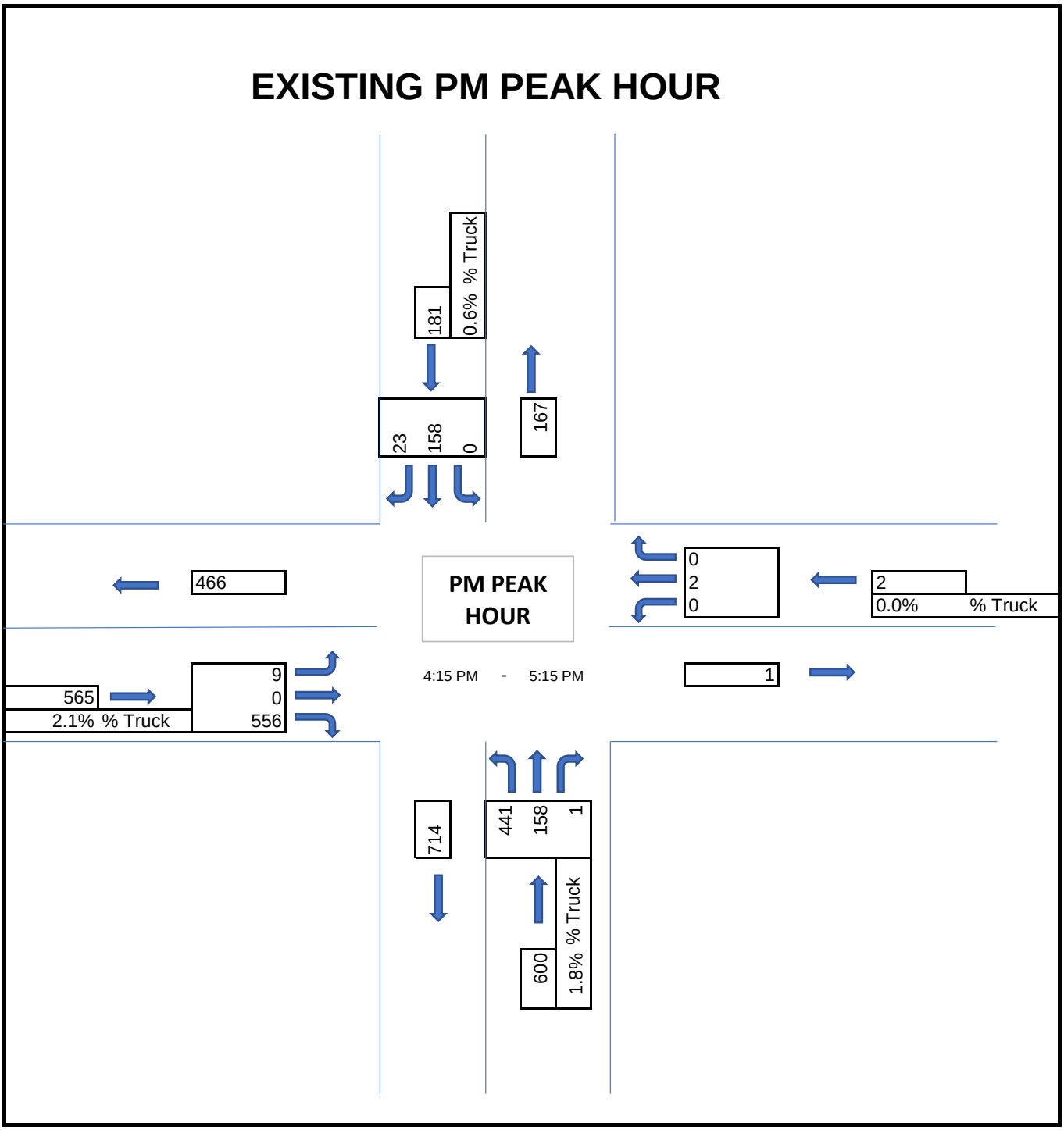
PEAK HOUR TOTAL	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:15:00 PM	0	49	9	0	0	1	0	0	115	42	1	0	2	0	132	0	
4:30:00 PM	0	40	7	0	0	0	0	0	106	42	0	0	3	0	140	0	
4:45:00 PM	0	40	4	0	0	1	0	0	97	37	0	0	2	0	146	0	
5:00:00 PM	0	29	3	0	0	0	0	0	123	37	0	0	2	0	138	0	1348
PEAK HOUR	**0**	**158**	**23**	**0**	**0**	**2**	**0**	**0**	**441**	**158**	**1**	**0**	**9**	**0**	**556**	**0**	

PEAK HOUR TRUCK PERCENT	PROSPECT STREET Southbound				ALDER STREET Westbound				PARK STREET Northbound				ROUTE 27 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
4:15:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	
4:30:00 PM	0	0	0	0	0	0	0	0	5	1	0	0	0	0	1	0	
4:45:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	
5:00:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0
PEAK HOUR	**#DIV/0!**	**0.6%**	**0.0%**	**#DIV/0!**	**#DIV/0!**	**0.0%**	**#DIV/0!**	**#DIV/0!**	**2.0%**	**1.3%**	**0.0%**	**#DIV/0!**	**0.0%**	**#DIV/0!**	**2.2%**	**#DIV/0!**	
Truck Percent on Enitre Approach		**0.6%**				**0.0%**				**1.8%**				**2.1%**			

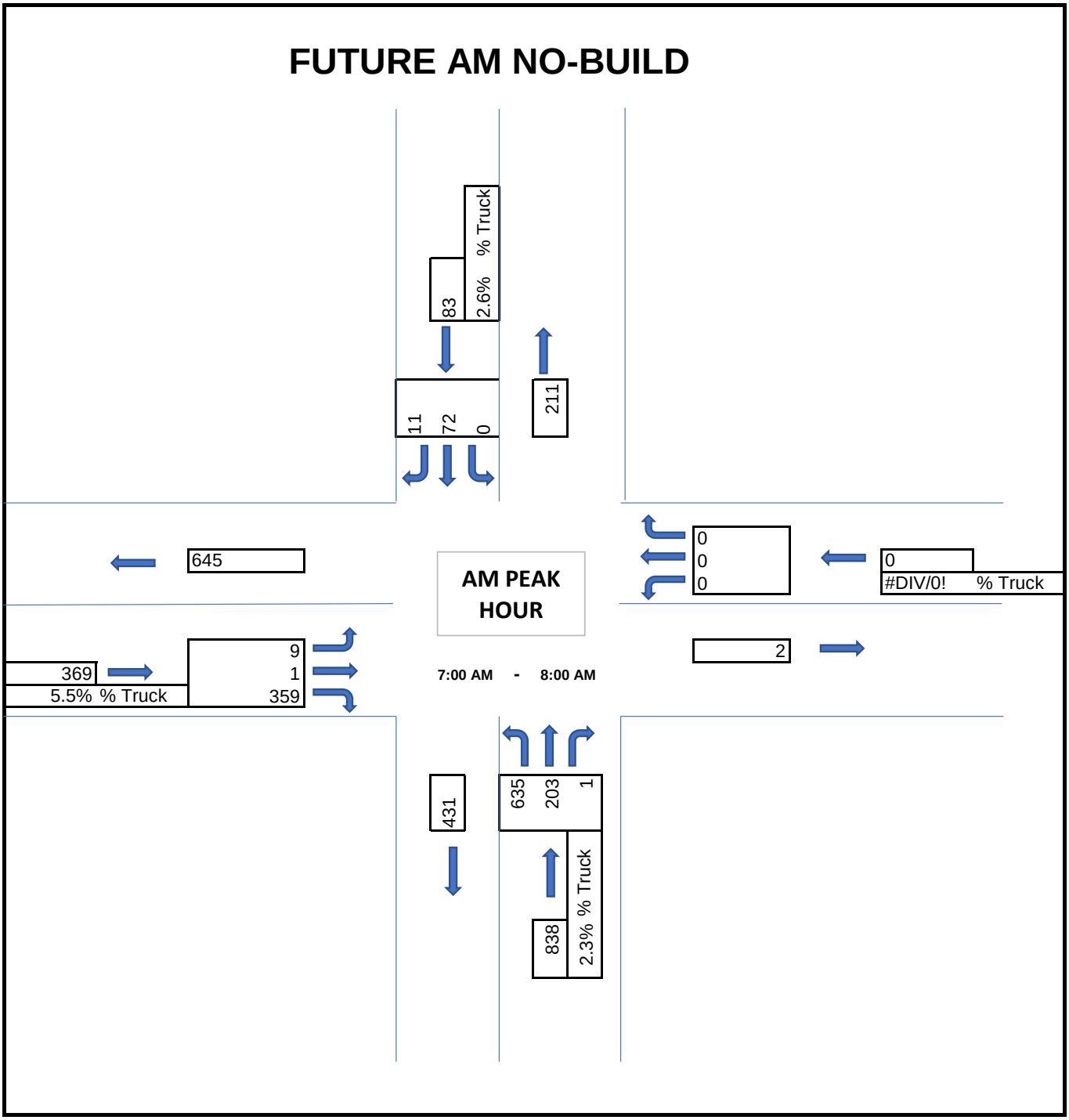
EXISTING AM PEAK HOUR



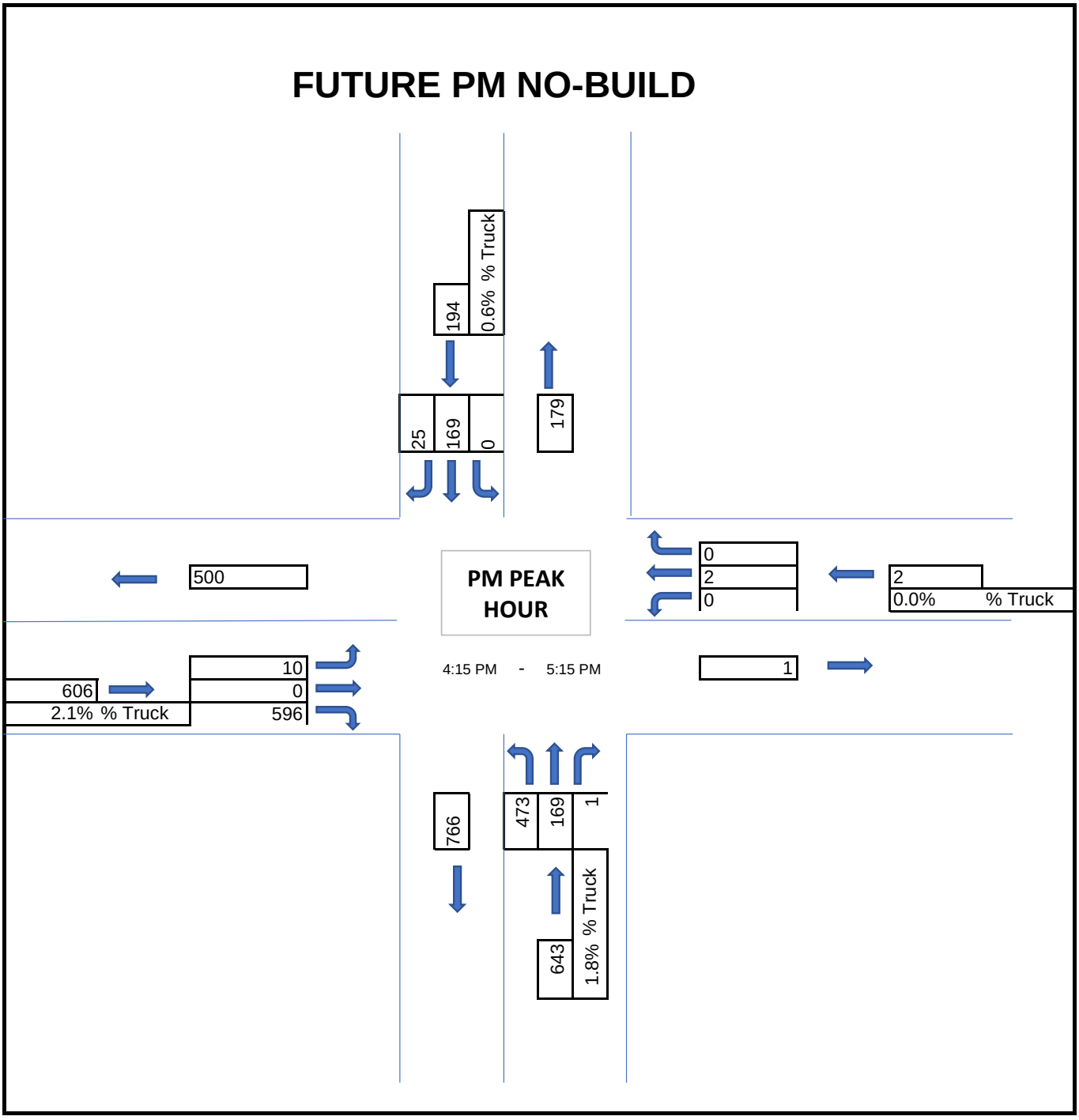
EXISTING PM PEAK HOUR



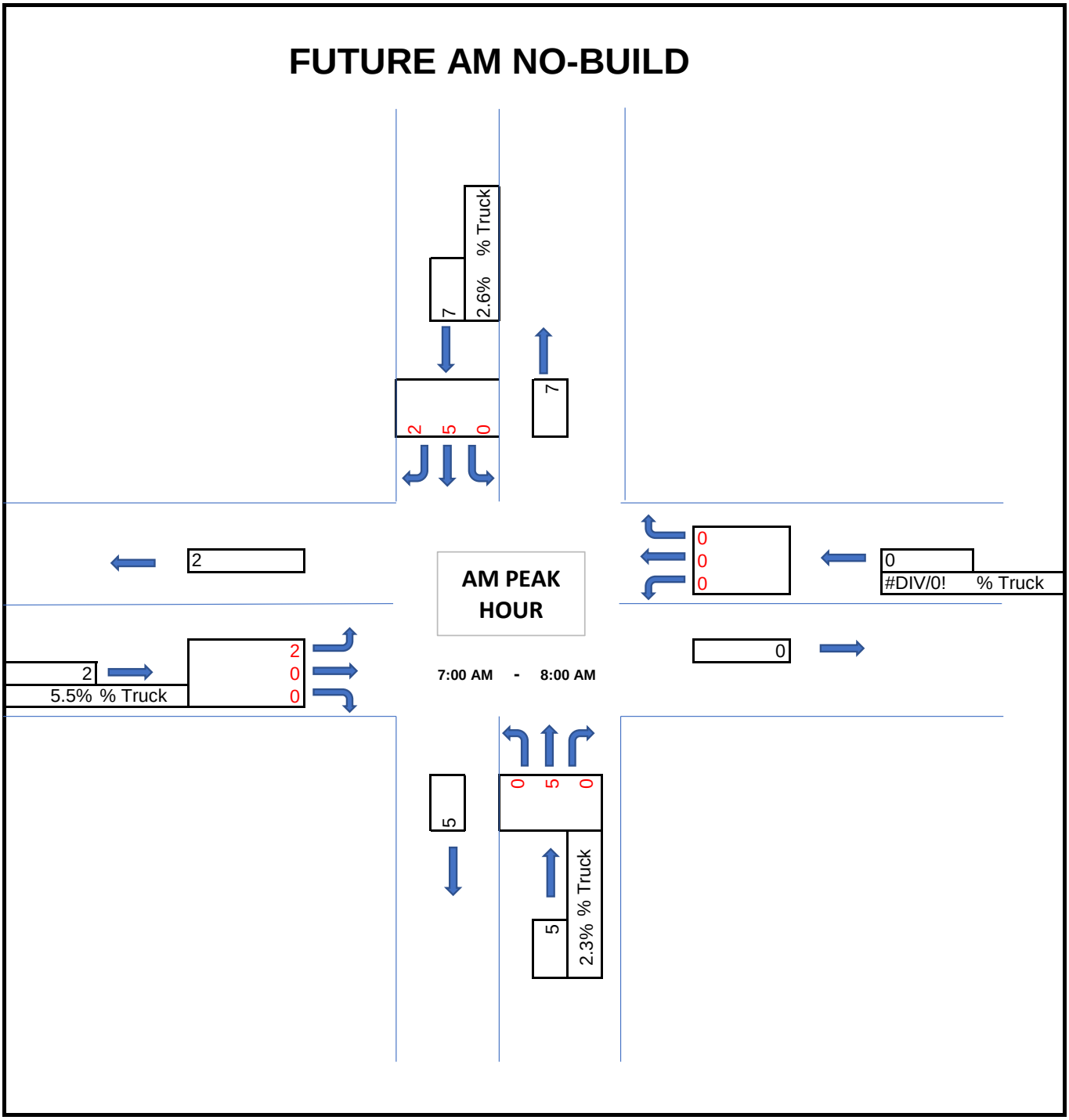
FUTURE AM NO-BUILD



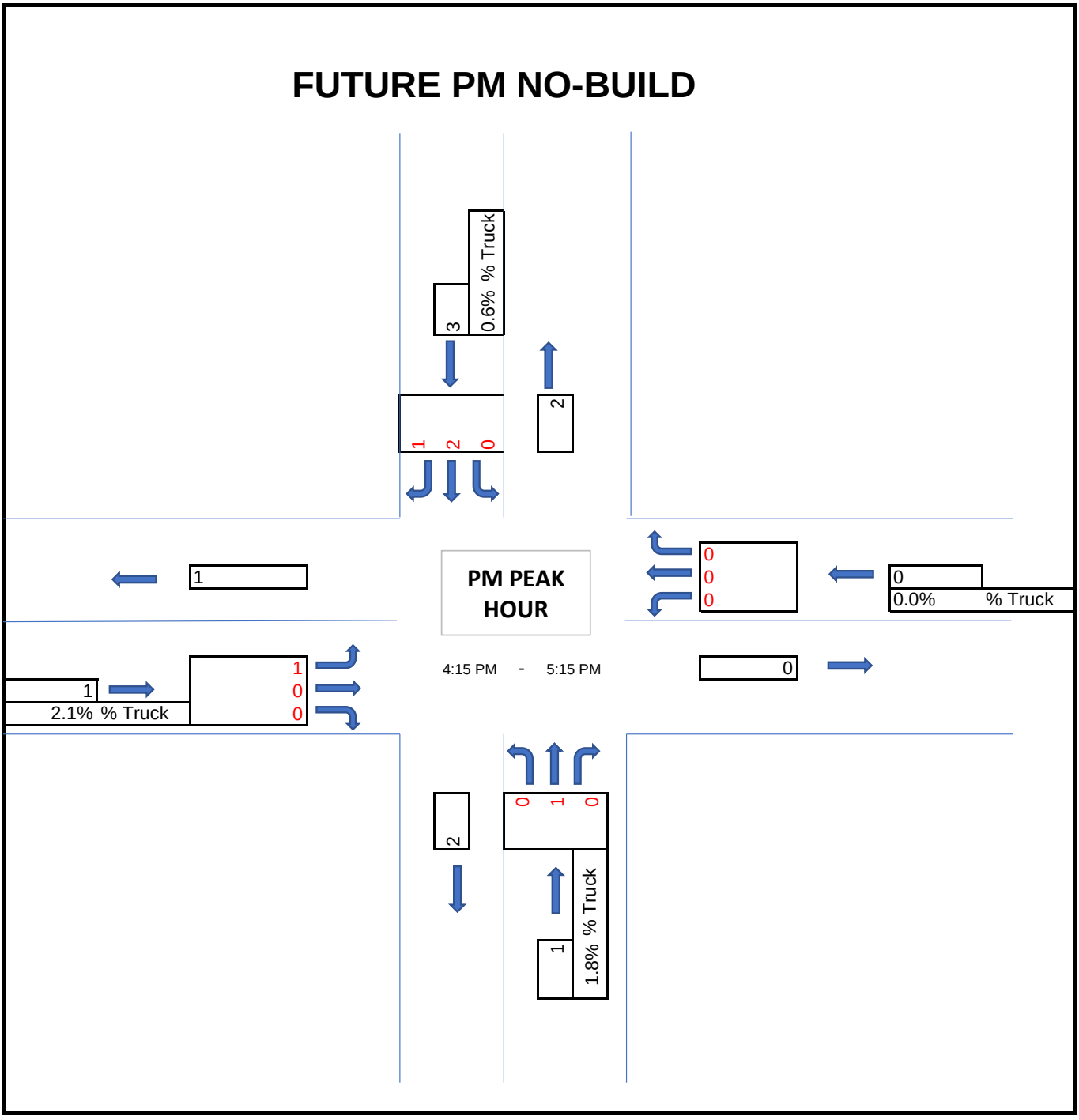
FUTURE PM NO-BUILD



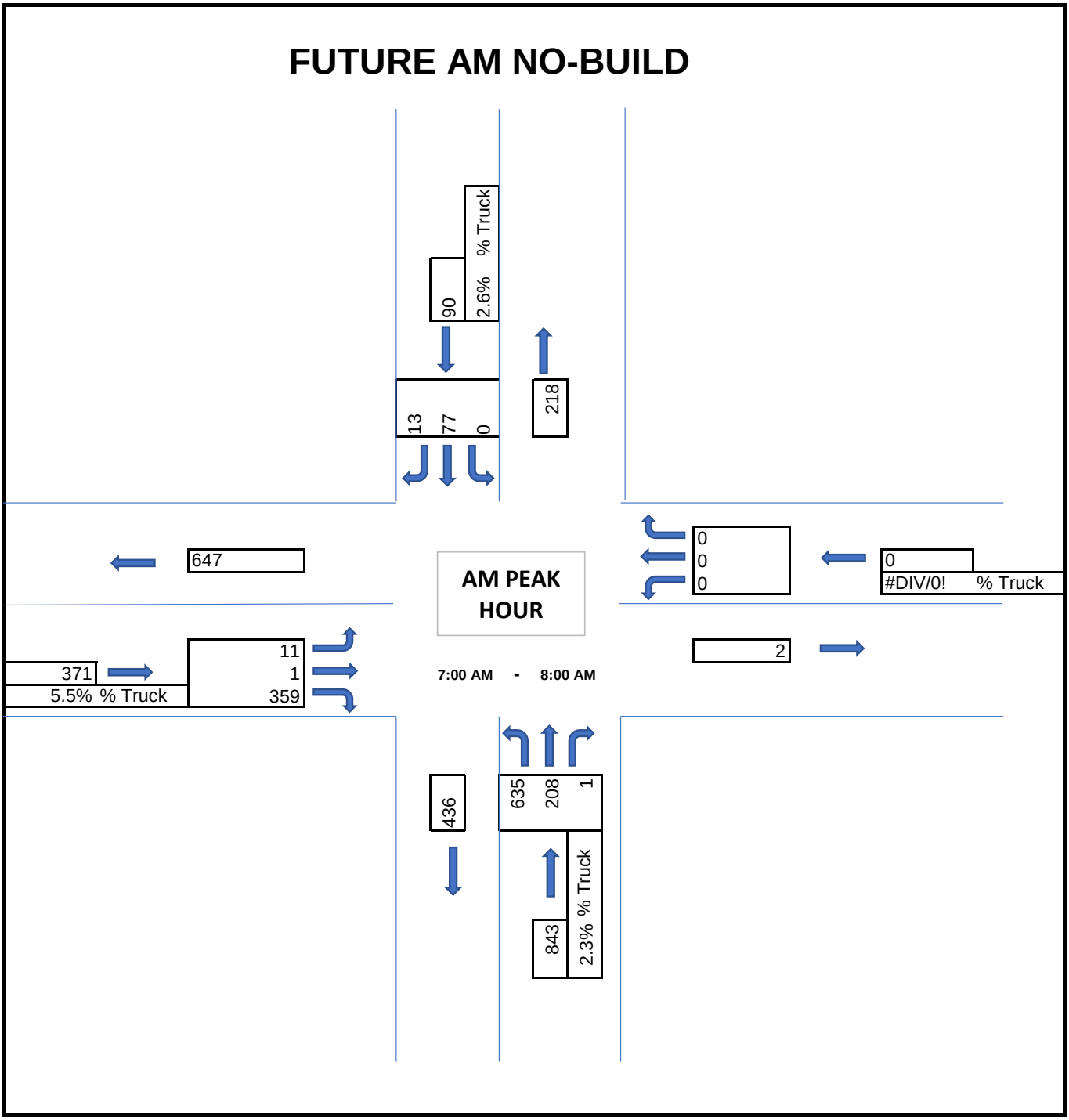
FUTURE AM NO-BUILD



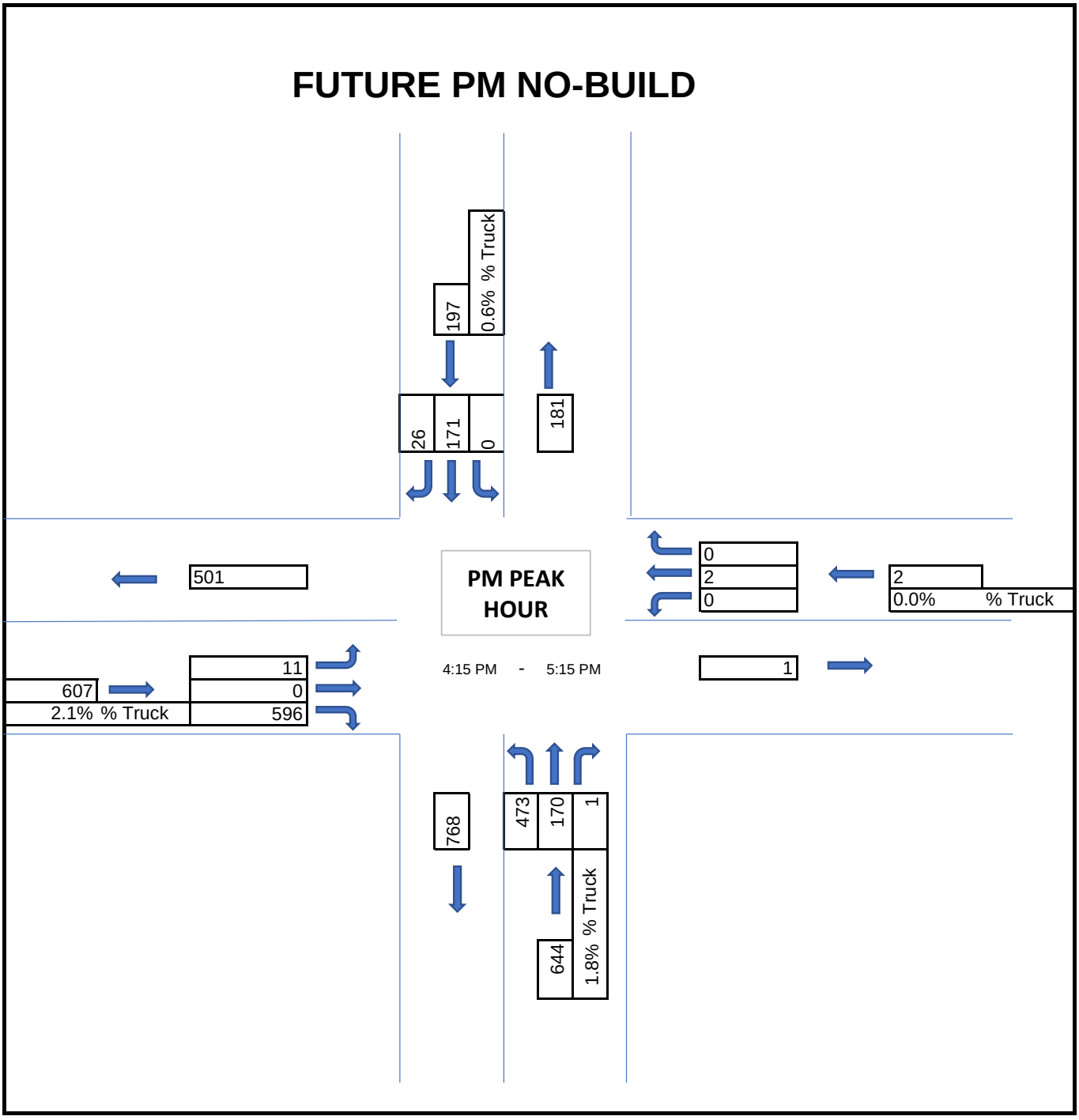
FUTURE PM NO-BUILD



FUTURE AM NO-BUILD



FUTURE PM NO-BUILD



TECHNICAL MEMORANDUM

MASSDOT CRASH RATE WORKSHEETS

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Stoughton COUNT DATE : Nov-22

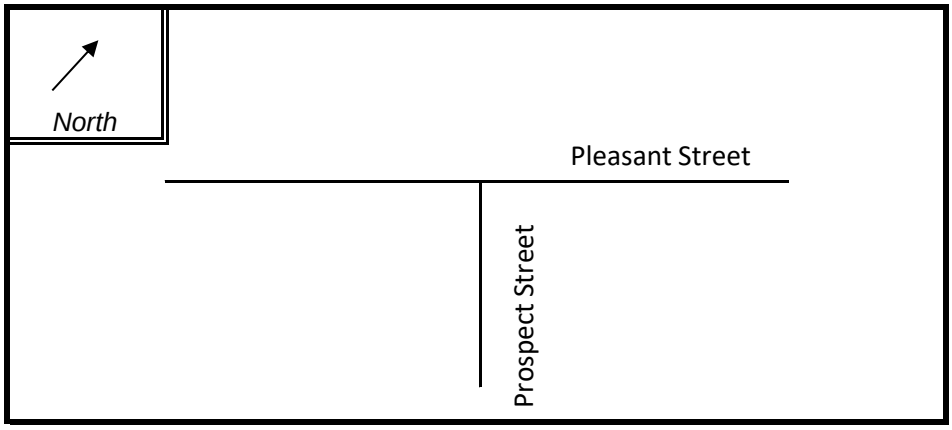
DISTRICT : 5 UNSIGNALIZED : x SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Pleasant Street

MINOR STREET(S) : Prospect Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	442	398	246	1		**1,087**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **12,078**

TOTAL # OF CRASHES : 3

OF YEARS : 4

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.75**

CRASH RATE CALCULATION : **0.17**

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

Comments :

Project Title & Date: Stoughton Fire 11-23-22

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Stoughton COUNT DATE : Nov-22

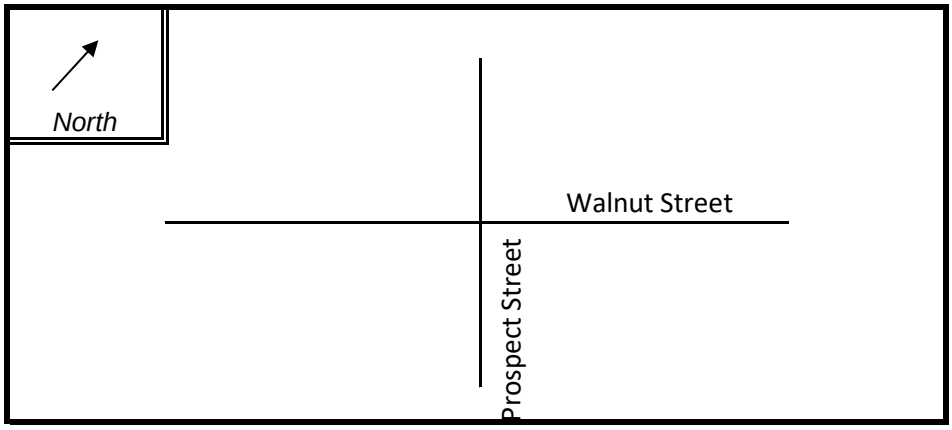
DISTRICT : 5 UNSIGNALIZED : x SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Prospect Street

MINOR STREET(S) : Walnut Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	169	161	180	331		**841**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **9,344**

TOTAL # OF CRASHES : 10

OF YEARS : 4

AVERAGE # OF CRASHES PER YEAR (**A**) : **2.50**

CRASH RATE CALCULATION : **0.73**

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

Comments :

Project Title & Date: Stoughton Fire 11-23-22

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Stoughton COUNT DATE : Nov-22

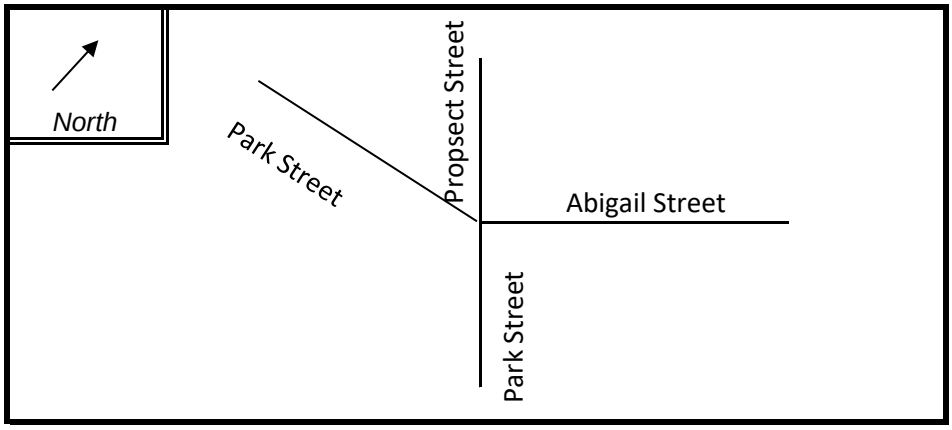
DISTRICT : 5 UNSIGNALIZED : x SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Park Street

MINOR STREET(S) : Pleasant Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SEB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	606	2	643	195		**1,446**

" K " FACTOR : **0.090** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **16,067**

TOTAL # OF CRASHES : 8 # OF YEARS : 4 AVERAGE # OF CRASHES PER YEAR (**A**) : **2.00**

CRASH RATE CALCULATION : **0.34** RATE = (A * 1,000,000) / (V * 365)

Comments :

Project Title & Date: Stoughton Fire 11-23-22

TECHNICAL MEMORANDUM

SIGHT DISTANCE CALCULATIONS

AASHTO Recommended Sight Distance Summary
(Passenger Vehicles)

LOCATION: Prospect Street at Site Drive

Side Street Direction:	WB
Number of Lanes on Mainline =	2
Median Width (Feet) =	0

STOPPING SIGHT DISTANCE

Mainline Direction:	NB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

Mainline Direction:	SB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

INTERSECTION SIGHT DISTANCE

RIGHT TURN FROM STOP:	South	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	6.5	seconds
ISD (Right Turn from Stop) = 1.47 * t_g * V =	430	FT
ISD (Right Turn from Stop) =	**430**	**FT**

LEFT TURN FROM STOP:	North	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	7.5	seconds
ISD (Left Turn from Stop) = 1.47 * t_g * V =	497	FT
ISD (Left Turn from Stop) =	**500**	**FT**

AASHTO Recommended Sight Distance Summary
(Single-Unit Trucks)

LOCATION: Prospect Street at Site Drive

Side Street Direction:	WB
Number of Lanes on Mainline =	2
Median Width (Feet) =	0

STOPPING SIGHT DISTANCE

Mainline Direction:	NB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

Mainline Direction:	SB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

INTERSECTION SIGHT DISTANCE

RIGHT TURN FROM STOP:	South	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	8.5	seconds
ISD (Right Turn from Stop) = 1.47 * t_g * V =	563	FT
ISD (Right Turn from Stop) =	**565**	**FT**

LEFT TURN FROM STOP:	North	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	9.5	seconds
ISD (Left Turn from Stop) = 1.47 * t_g * V =	629	FT
ISD (Left Turn from Stop) =	**630**	**FT**

AASHTO Recommended Sight Distance Summary
(Combination Trucks)

LOCATION: Prospect Street at Site Drive

Side Street Direction:	WB
Number of Lanes on Mainline =	2
Median Width (Feet) =	0

STOPPING SIGHT DISTANCE

Mainline Direction:	NB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

Mainline Direction:	SB	
85th Percentile Speed (V) =	45	MPH
Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Brake Reaction Time (T) =	2.5	seconds
Deceleration Rate (A) =	11.2	ft/s^2
SSD = 1.47 V * T +1.075 V^2/A =	360	FT
SSD =	**360**	**FT**

INTERSECTION SIGHT DISTANCE

RIGHT TURN FROM STOP:	South	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	10.5	seconds
ISD (Right Turn from Stop) = 1.47 * t_g * V =	695	FT
ISD (Right Turn from Stop) =	**695**	**FT**

LEFT TURN FROM STOP:	North	of Driveway
Posted Speed (V) =	45	MPH
Minor Street Approach Grade (G) =	0.0%	
Apply Grade Adjustment	No	
Time Gap (t_g) =	11.5	seconds
ISD (Left Turn from Stop) = 1.47 * t_g * V =	761	FT
ISD (Left Turn from Stop) =	**765**	**FT**

TECHNICAL MEMORANDUM

TRIP-GENERATION CALCULATIONS

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 575 - Fire and Rescue Station

General Urban/Suburban

Average Vehicle Trips Ends vs: 1000 Sq. Ft. Gross Floor Area
Independent Variable (X): #####

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.48 *X
T = 0.48 * (25.200)
T = 12.10
T = 12 vehicle trips
with 50% (3 vph) entering and 50% (9 vph) exiting.

General Urban/Suburban

Average Vehicle Trips Ends vs: Number of Employees
Independent Variable (X): 8.000

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.44 *X

T = 0.44 * (8.000)
T = 3.52
T = 4 vehicle trips
with 50% (1 vph) entering and 50% (3 vph) exiting.

Staff		Emergency Vehicles		Total Vehicles	
Morning Peak Hour *		Morning Peak Hour**		Morning Peak Hour	
In	8	In	2	In	10
Out	8	Out	2	Out	10
	16		4		20
* Shift change at 0800					
Evening Peak Hour*		Evening Peak Hour**		Evening Peak Hour**	
In	4	In	2	In	6
Out	4	Out	2	Out	6
	8		4		12
Daily		Daily**		Daily	
In	8	In	24	In	32
Out	8	Out	24	Out	32
	16		48		64

10 to 12	calls per 24 hr shift Freeman	
Average Respone	Engine & Ambulance	65%
Fire/Rescue	C-5, Engine Ladder	35%
	6400 Annual Calls Total	
	3600 Prospect	
10-Aug	daily calls	
6 to 8	oriented to Park St	
8 staff	0800-0800	

* No staff change, "other"
**Responses (based on existing Freeman St 12 calls per 24 hr shift - one call per 2 hours)
for estimating assume 1 call per peak hour
average 2 vehicles per response

STAFF			EMERGENCY EQUIPMENT				TOTAL		
	AM	**PM**	**AM**	**PM**		**AM/PM**		**AM**	**PM**
From South	197	167	72%	48%	To/From North	35%	LT IN	3	4
From North	77	181	28%	52%	To/From South	65%	RT IN	7	2
	274	348	1	1		1	LT OUT	7	3
							RT OUT	3	3
								20	12

Morning Staff Enter		Morning Staff Exit		Morning Equip Enter		Morning Equip Exit	
LT IN	RT IN	LT OUT	RT OUT	LT IN	RT IN	LT OUT	RT OUT
2	6	6	2	1	1	1	1

Evening Staff Enter		Evening Staff Exit		Evening Equip Enter		Evening Equip Exit	
LT IN	RT IN	LT OUT	RT OUT	LT IN	RT IN	LT OUT	RT OUT
3	1	2	2	1	1	1	1

	AM			PM		
	L	T	R	L	T	R
Park Street	0	67	10	0	158	23
Staff %Distribution	0%	87%	13%	0%	87%	13%
Staff Distribution	0	5	1	0	2	0
Equipment % Distribution	0%	35%	65%	0%	35%	65%
Equipment Distribution	0	0	1	0	0	1
Total	0	5	2	0	2	1

TECHNICAL MEMORANDUM

CAPACITY ANALYSIS METHODOLOGY

TECHNICAL MEMORANDUM

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).[6] 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.

[6] *Highway Capacity Manual 6th Edition*, Transportation Research Board; Washington, D.C.; 2016.

TECHNICAL MEMORANDUM

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 or v/c > 1.0	>80 or v/c > 1.0

Source *Highway Capacity Manual 6th Edition*, Transportation Research Board; Washington, D.C.; 2016. Pages 19-16, 20-6, and 21-9.

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

TECHNICAL MEMORANDUM

CAPACITY AND QUEUE ANALYSIS WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	302	39	55	141	0	179	0	184	0	0	0
Future Volume (vph)	0	302	39	55	141	0	179	0	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	7%	6%	0%	0%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	11.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	302	39	55	141	0	179	0	184	0	0	0
Future Vol, veh/h	0	302	39	55	141	0	179	0	184	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	4	5	7	6	0	0	0	2	0	0	0
Mvmt Flow	0	311	40	57	145	0	185	0	190	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	351	0	0	590	590	331	685	610	145
Stage 1	-	-	-	-	-	-	331	331	-	259	259	-
Stage 2	-	-	-	-	-	-	259	259	-	426	351	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.1	6.5	6.22	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	-	-	2.263	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1450	-	-	1181	-	-	422	423	711	365	412	908
Stage 1	-	-	-	-	-	-	687	649	-	750	697	-
Stage 2	-	-	-	-	-	-	750	697	-	610	636	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1450	-	-	1181	-	-	405	401	711	257	390	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	405	401	-	257	390	-
Stage 1	-	-	-	-	-	-	687	649	-	750	660	-
Stage 2	-	-	-	-	-	-	710	660	-	447	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.3	28	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	518	1450	-	-	1181	-	-	-
HCM Lane V/C Ratio	0.722	-	-	-	0.048	-	-	-
HCM Control Delay (s)	28	0	-	-	8.2	0	-	0
HCM Lane LOS	D	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	5.9	0	-	-	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	76	8	13	79	2	6	145	23	3	61	77
Future Volume (vph)	58	76	8	13	79	2	6	145	23	3	61	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	4%	0%	0%	1%	0%	0%	1%	0%	0%	5%	9%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	58	76	8	13	79	2	6	145	23	3	61	77
Future Vol, veh/h	58	76	8	13	79	2	6	145	23	3	61	77
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	4	0	0	1	0	0	1	0	0	5	9
Mvmt Flow	66	86	9	15	90	2	7	165	26	3	69	88
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	8.9	9.4	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	41%	14%	2%
Vol Thru, %	83%	54%	84%	43%
Vol Right, %	13%	6%	2%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	142	94	141
LT Vol	6	58	13	3
Through Vol	145	76	79	61
RT Vol	23	8	2	77
Lane Flow Rate	198	161	107	160
Geometry Grp	1	1	1	1
Degree of Util (X)	0.257	0.22	0.147	0.199
Departure Headway (Hd)	4.674	4.907	4.948	4.478
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	728	720	796
Service Time	2.728	2.966	3.011	2.534
HCM Lane V/C Ratio	0.259	0.221	0.149	0.201
HCM Control Delay	9.4	9.4	8.9	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.8	0.5	0.7

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	67	10	9	335	592	190
Future Volume (vph)	67	10	9	335	592	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	654			1047	774	
Travel Time (s)	14.9			23.8	17.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	3%	2%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	67	10	9	335	592	190
Future Vol, veh/h	67	10	9	335	592	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	6	3	2
Mvmt Flow	71	11	9	353	623	200

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1094	723	823	0	-	0
Stage 1	723	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.43	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	236	430	816	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	233	430	816	-	-	-
Mov Cap-2 Maneuver	233	-	-	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	25.3	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	816	-	233	430
HCM Lane V/C Ratio	-	-	0.012	-	0.303	0.024
HCM Control Delay (s)	-	-	9.5	0	27	13.6
HCM Lane LOS	-	-	A	A	D	B
HCM 95th %tile Q(veh)	-	-	0	-	1.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	301	108	180	190	1	99	0	131	0	0	1
Future Volume (vph)	0	301	108	180	190	1	99	0	131	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	5%	1%	2%	2%	0%	1%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	301	108	180	190	1	99	0	131	0	0	1
Future Vol, veh/h	0	301	108	180	190	1	99	0	131	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	5	1	2	2	0	1	0	2	0	0	0
Mvmt Flow	0	310	111	186	196	1	102	0	135	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	197	0	0	421	0	0	935	935	366	1002	990	197
Stage 1	-	-	-	-	-	-	366	366	-	569	569	-
Stage 2	-	-	-	-	-	-	569	569	-	433	421	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.11	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.509	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1388	-	-	1138	-	-	247	267	679	223	248	849
Stage 1	-	-	-	-	-	-	655	626	-	511	509	-
Stage 2	-	-	-	-	-	-	509	509	-	605	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1388	-	-	1138	-	-	212	218	679	153	202	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	218	-	153	202	-
Stage 1	-	-	-	-	-	-	655	626	-	511	415	-
Stage 2	-	-	-	-	-	-	415	415	-	485	592	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.3	34.6	9.2
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	1388	-	-	1138	-	-	849
HCM Lane V/C Ratio	0.679	-	-	-	0.163	-	-	0.001
HCM Control Delay (s)	34.6	0	-	-	8.8	0	-	9.2
HCM Lane LOS	D	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	4.7	0	-	-	0.6	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	91	16	29	117	5	4	136	28	11	185	113
Future Volume (vph)	50	91	16	29	117	5	4	136	28	11	185	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	3%	0%	0%	0%	1%	4%	0%	1%	4%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	91	16	29	117	5	4	136	28	11	185	113
Future Vol, veh/h	50	91	16	29	117	5	4	136	28	11	185	113
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	3	0	0	0	1	4	0	1	4
Mvmt Flow	54	98	17	31	126	5	4	146	30	12	199	122
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	10.5	10.1	11.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	32%	19%	4%
Vol Thru, %	81%	58%	77%	60%
Vol Right, %	17%	10%	3%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	168	157	151	309
LT Vol	4	50	29	11
Through Vol	136	91	117	185
RT Vol	28	16	5	113
Lane Flow Rate	181	169	162	332
Geometry Grp	1	1	1	1
Degree of Util (X)	0.262	0.258	0.251	0.452
Departure Headway (Hd)	5.226	5.5	5.576	4.901
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	686	653	645	734
Service Time	3.261	3.536	3.613	2.931
HCM Lane V/C Ratio	0.264	0.259	0.251	0.452
HCM Control Delay	10.1	10.4	10.5	11.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1	1	1	2.4

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	158	25	9	556	441	159
Future Volume (vph)	158	25	9	556	441	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	654			1047	774	
Travel Time (s)	14.9			23.8	17.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	2%	2%	1%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	158	25	9	556	441	159
Future Vol, veh/h	158	25	9	556	441	159
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	2	2	1
Mvmt Flow	165	26	9	579	459	166

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1139	542	625	0	-	0
Stage 1	542	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Critical Hdwy	6.41	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	224	544	966	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	552	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	221	544	966	-	-	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	552	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	51.2	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	966	-	221	544
HCM Lane V/C Ratio	-	-	0.01	-	0.745	0.048
HCM Control Delay (s)	-	-	8.8	0	57.4	12
HCM Lane LOS	-	-	A	A	F	B
HCM 95th %tile Q(veh)	-	-	0	-	5.1	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	324	42	59	151	0	192	0	197	0	0	0
Future Volume (vph)	0	324	42	59	151	0	192	0	197	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	7%	6%	0%	0%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	15.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	324	42	59	151	0	192	0	197	0	0	0
Future Vol, veh/h	0	324	42	59	151	0	192	0	197	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	4	5	7	6	0	0	0	2	0	0	0
Mvmt Flow	0	334	43	61	156	0	198	0	203	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	377	0	0	634	634	356	735	655	156
Stage 1	-	-	-	-	-	-	356	356	-	278	278	-
Stage 2	-	-	-	-	-	-	278	278	-	457	377	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.1	6.5	6.22	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	-	-	2.263	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1155	-	-	395	399	688	338	388	895
Stage 1	-	-	-	-	-	-	666	633	-	733	684	-
Stage 2	-	-	-	-	-	-	733	684	-	587	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1155	-	-	378	376	688	228	365	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	376	-	228	365	-
Stage 1	-	-	-	-	-	-	666	633	-	733	644	-
Stage 2	-	-	-	-	-	-	690	644	-	414	619	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.3	37.6	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	490	1436	-	-	1155	-	-	-
HCM Lane V/C Ratio	0.818	-	-	-	0.053	-	-	-
HCM Control Delay (s)	37.6	0	-	-	8.3	0	-	0
HCM Lane LOS	E	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	7.9	0	-	-	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	81	9	14	85	2	6	155	25	3	65	83
Future Volume (vph)	62	81	9	14	85	2	6	155	25	3	65	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	4%	0%	0%	1%	0%	0%	1%	0%	0%	5%	9%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	81	9	14	85	2	6	155	25	3	65	83
Future Vol, veh/h	62	81	9	14	85	2	6	155	25	3	65	83
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	4	0	0	1	0	0	1	0	0	5	9
Mvmt Flow	70	92	10	16	97	2	7	176	28	3	74	94
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	9.1	9.7	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	41%	14%	2%
Vol Thru, %	83%	53%	84%	43%
Vol Right, %	13%	6%	2%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	186	152	101	151
LT Vol	6	62	14	3
Through Vol	155	81	85	65
RT Vol	25	9	2	83
Lane Flow Rate	211	173	115	172
Geometry Grp	1	1	1	1
Degree of Util (X)	0.279	0.239	0.16	0.217
Departure Headway (Hd)	4.745	4.982	5.033	4.552
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	752	715	706	782
Service Time	2.807	3.054	3.111	2.618
HCM Lane V/C Ratio	0.281	0.242	0.163	0.22
HCM Control Delay	9.7	9.6	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.9	0.6	0.8

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	72	11	10	359	635	204
Future Volume (vph)	72	11	10	359	635	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	654			1047	774	
Travel Time (s)	14.9			23.8	17.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	3%	2%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	72	11	10	359	635	204
Future Vol, veh/h	72	11	10	359	635	204
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	6	3	2
Mvmt Flow	76	12	11	378	668	215

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1176	776	883	0	-	0
Stage 1	776	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.43	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	210	401	775	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	401	775	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	675	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	29.9	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	775	-	206	401
HCM Lane V/C Ratio	-	-	0.014	-	0.368	0.029
HCM Control Delay (s)	-	-	9.7	0	32.3	14.2
HCM Lane LOS	-	-	A	A	D	B
HCM 95th %tile Q(veh)	-	-	0	-	1.6	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	323	116	193	204	1	106	0	140	0	0	1
Future Volume (vph)	3	323	116	193	204	1	106	0	140	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	5%	1%	2%	2%	0%	1%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	13.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	323	116	193	204	1	106	0	140	0	0	1
Future Vol, veh/h	3	323	116	193	204	1	106	0	140	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	5	1	2	2	0	1	0	2	0	0	0
Mvmt Flow	3	333	120	199	210	1	109	0	144	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	453	0	0	1008	1008	393	1080	1068	211
Stage 1	-	-	-	-	-	-	399	399	-	609	609	-
Stage 2	-	-	-	-	-	-	609	609	-	471	459	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.11	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.509	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1372	-	-	1108	-	-	220	242	656	197	223	834
Stage 1	-	-	-	-	-	-	629	606	-	486	488	-
Stage 2	-	-	-	-	-	-	484	488	-	577	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1372	-	-	1108	-	-	185	192	656	129	177	834
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	192	-	129	177	-
Stage 1	-	-	-	-	-	-	627	604	-	485	388	-
Stage 2	-	-	-	-	-	-	385	388	-	449	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	4.3	51.4	9.3
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	1372	-	-	1108	-	-	834
HCM Lane V/C Ratio	0.81	0.002	-	-	0.18	-	-	0.001
HCM Control Delay (s)	51.4	7.6	0	-	9	0	-	9.3
HCM Lane LOS	F	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	6.7	0	-	-	0.7	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	98	17	31	125	5	4	146	30	12	198	121
Future Volume (vph)	54	98	17	31	125	5	4	146	30	12	198	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	3%	0%	0%	0%	1%	4%	0%	1%	4%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	98	17	31	125	5	4	146	30	12	198	121
Future Vol, veh/h	54	98	17	31	125	5	4	146	30	12	198	121
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	3	0	0	0	1	4	0	1	4
Mvmt Flow	58	105	18	33	134	5	4	157	32	13	213	130
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11	11	10.6	13
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	32%	19%	4%
Vol Thru, %	81%	58%	78%	60%
Vol Right, %	17%	10%	3%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	169	161	331
LT Vol	4	54	31	12
Through Vol	146	98	125	198
RT Vol	30	17	5	121
Lane Flow Rate	194	182	173	356
Geometry Grp	1	1	1	1
Degree of Util (X)	0.289	0.286	0.276	0.497
Departure Headway (Hd)	5.373	5.657	5.737	5.023
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	634	625	715
Service Time	3.423	3.708	3.789	3.066
HCM Lane V/C Ratio	0.291	0.287	0.277	0.498
HCM Control Delay	10.6	11	11	13
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.2	1.2	1.1	2.8

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	169	27	10	596	473	170
Future Volume (vph)	169	27	10	596	473	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	654			1047	774	
Travel Time (s)	14.9			23.8	17.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	2%	2%	1%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	10.8

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	169	27	10	596	473	170
Future Vol, veh/h	169	27	10	596	473	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	2	2	1
Mvmt Flow	176	28	10	621	493	177

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1223	582	670	0	-	0
Stage 1	582	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	6.41	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	199	517	930	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	196	517	930	-	-	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	79	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	930	-	196	517
HCM Lane V/C Ratio	-	-	0.011	-	0.898	0.054
HCM Control Delay (s)	-	-	8.9	0	89.6	12.4
HCM Lane LOS	-	-	A	A	F	B
HCM 95th %tile Q(veh)	-	-	0	-	7	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	324	43	60	151	0	193	0	198	0	0	0
Future Volume (vph)	0	324	43	60	151	0	193	0	198	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	7%	6%	0%	0%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	324	43	60	151	0	193	0	198	0	0	0
Future Vol, veh/h	0	324	43	60	151	0	193	0	198	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	4	5	7	6	0	0	0	2	0	0	0
Mvmt Flow	0	334	44	62	156	0	199	0	204	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	378	0	0	636	636	356	738	658	156
Stage 1	-	-	-	-	-	-	356	356	-	280	280	-
Stage 2	-	-	-	-	-	-	280	280	-	458	378	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.1	6.5	6.22	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	-	-	2.263	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1154	-	-	393	398	688	336	387	895
Stage 1	-	-	-	-	-	-	666	633	-	731	683	-
Stage 2	-	-	-	-	-	-	731	683	-	587	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1154	-	-	375	375	688	226	364	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	375	-	226	364	-
Stage 1	-	-	-	-	-	-	666	633	-	731	643	-
Stage 2	-	-	-	-	-	-	688	643	-	413	619	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.4	38.9	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	487	1436	-	-	1154	-	-	-
HCM Lane V/C Ratio	0.828	-	-	-	0.054	-	-	-
HCM Control Delay (s)	38.9	0	-	-	8.3	0	-	0
HCM Lane LOS	E	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	8.1	0	-	-	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	81	9	15	85	2	6	158	25	3	67	83
Future Volume (vph)	62	81	9	15	85	2	6	158	25	3	67	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	4%	0%	0%	1%	0%	0%	1%	0%	0%	5%	9%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	81	9	15	85	2	6	158	25	3	67	83
Future Vol, veh/h	62	81	9	15	85	2	6	158	25	3	67	83
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	4	0	0	1	0	0	1	0	0	5	9
Mvmt Flow	70	92	10	17	97	2	7	180	28	3	76	94
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	9.1	9.7	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	41%	15%	2%
Vol Thru, %	84%	53%	83%	44%
Vol Right, %	13%	6%	2%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	152	102	153
LT Vol	6	62	15	3
Through Vol	158	81	85	67
RT Vol	25	9	2	83
Lane Flow Rate	215	173	116	174
Geometry Grp	1	1	1	1
Degree of Util (X)	0.284	0.24	0.163	0.221
Departure Headway (Hd)	4.755	5	5.052	4.568
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	750	712	704	779
Service Time	2.82	3.074	3.131	2.635
HCM Lane V/C Ratio	0.287	0.243	0.165	0.223
HCM Control Delay	9.7	9.7	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.9	0.6	0.8

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	77	13	12	359	635	209
Future Volume (vph)	77	13	12	359	635	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	489			1047	774	
Travel Time (s)	11.1			23.8	17.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	3%	2%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.2

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	77	13	12	359	635	209
Future Vol, veh/h	77	13	12	359	635	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	6	3	2
Mvmt Flow	81	14	13	378	668	220

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1182	778	888	0	-	0
Stage 1	778	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Critical Hdwy	6.43	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	209	400	771	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	205	400	771	-	-	-
Mov Cap-2 Maneuver	205	-	-	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	30.8	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	771	-	205	400
HCM Lane V/C Ratio	-	-	0.016	-	0.395	0.034
HCM Control Delay (s)	-	-	9.7	0	33.6	14.3
HCM Lane LOS	-	-	A	A	D	B
HCM 95th %tile Q(veh)	-	-	0.1	-	1.8	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	3	212	7	3	83
Future Volume (vph)	7	3	212	7	3	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	366		489			483
Travel Time (s)	8.3		11.1			11.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		10			10
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	3	212	7	3	83
Future Vol, veh/h	7	3	212	7	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	2	2	2
Mvmt Flow	8	3	230	8	3	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	330	234	0	0	238	0
Stage 1	234	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	665	805	-	-	1329	-
Stage 1	805	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	664	805	-	-	1329	-
Mov Cap-2 Maneuver	664	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	701	1329	-
HCM Lane V/C Ratio	-	-	0.016	0.002	-
HCM Control Delay (s)	-	-	10.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	323	117	195	204	1	107	0	141	0	0	1
Future Volume (vph)	3	323	117	195	204	1	107	0	141	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			475			478			144	
Travel Time (s)		13.8			10.8			10.9			3.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	5%	1%	2%	2%	0%	1%	0%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	13.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	323	117	195	204	1	107	0	141	0	0	1
Future Vol, veh/h	3	323	117	195	204	1	107	0	141	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	5	1	2	2	0	1	0	2	0	0	0
Mvmt Flow	3	333	121	201	210	1	110	0	145	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	454	0	0	1013	1013	394	1085	1073	211
Stage 1	-	-	-	-	-	-	400	400	-	613	613	-
Stage 2	-	-	-	-	-	-	613	613	-	472	460	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.11	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.509	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1372	-	-	1107	-	-	218	241	655	196	222	834
Stage 1	-	-	-	-	-	-	628	605	-	483	486	-
Stage 2	-	-	-	-	-	-	481	486	-	576	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1372	-	-	1107	-	-	183	191	655	128	176	834
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	191	-	128	176	-
Stage 1	-	-	-	-	-	-	626	603	-	482	386	-
Stage 2	-	-	-	-	-	-	381	386	-	447	567	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	4.4	53.8	9.3
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	1372	-	-	1107	-	-	834
HCM Lane V/C Ratio	0.825	0.002	-	-	0.182	-	-	0.001
HCM Control Delay (s)	53.8	7.6	0	-	9	0	-	9.3
HCM Lane LOS	F	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	7	0	-	-	0.7	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	98	17	32	125	5	4	148	31	12	201	121
Future Volume (vph)	54	98	17	32	125	5	4	148	31	12	201	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		383			550			592			255	
Travel Time (s)		8.7			12.5			13.5			5.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	3%	0%	0%	0%	1%	4%	0%	1%	4%
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	98	17	32	125	5	4	148	31	12	201	121
Future Vol, veh/h	54	98	17	32	125	5	4	148	31	12	201	121
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	3	0	0	0	1	4	0	1	4
Mvmt Flow	58	105	18	34	134	5	4	159	33	13	216	130
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11	11	10.7	13.1
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	32%	20%	4%
Vol Thru, %	81%	58%	77%	60%
Vol Right, %	17%	10%	3%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	169	162	334
LT Vol	4	54	32	12
Through Vol	148	98	125	201
RT Vol	31	17	5	121
Lane Flow Rate	197	182	174	359
Geometry Grp	1	1	1	1
Degree of Util (X)	0.294	0.287	0.279	0.502
Departure Headway (Hd)	5.384	5.68	5.76	5.037
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	631	622	715
Service Time	3.436	3.731	3.811	3.081
HCM Lane V/C Ratio	0.296	0.288	0.28	0.502
HCM Control Delay	10.7	11	11	13.1
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.2	1.2	1.1	2.8

Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	171	28	11	596	473	171
Future Volume (vph)	171	28	11	596	473	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	16	12	12
Storage Length (ft)	60	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	489			1047	774	
Travel Time (s)	11.1			23.8	17.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	2%	2%	1%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	0.85	0.85	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	11.5

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	171	28	11	596	473	171
Future Vol, veh/h	171	28	11	596	473	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	60	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	2	2	1
Mvmt Flow	178	29	11	621	493	178

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1225	582	671	0	-	0
Stage 1	582	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.41	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	198	517	929	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	194	517	929	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	83	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	929	-	194	517
HCM Lane V/C Ratio	-	-	0.012	-	0.918	0.056
HCM Control Delay (s)	-	-	8.9	0	94.6	12.4
HCM Lane LOS	-	-	A	A	F	B
HCM 95th %tile Q(veh)	-	-	0	-	7.2	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	3	179	2	4	194
Future Volume (vph)	3	3	179	2	4	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	366		489			483
Travel Time (s)	8.3		11.1			11.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	2%	2%	1%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		10			10
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60		60	60	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	179	2	4	194
Future Vol, veh/h	3	3	179	2	4	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	2	2	1
Mvmt Flow	3	3	195	2	4	211

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	415	196	0	0	197	0
Stage 1	196	-	-	-	-	-
Stage 2	219	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	594	845	-	-	1376	-
Stage 1	837	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	592	845	-	-	1376	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	815	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	696	1376	-
HCM Lane V/C Ratio	-	-	0.009	0.003	-
HCM Control Delay (s)	-	-	10.2	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-