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Quality

Traffic Assessment

Village District Rezone
Town of Lincoln
Lincoln, Massachusetts

Accuracy

Prepared for:

Ms. Paula Vaughn-MacKenzie
16 Lincoln Road
Lincoln, MA 01773

Integrity

December 30, 2020

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Traffic Assessment

To:	Paula Vaughn-MacKenzie Director of Planning and Land Use Town of Lincoln 16 Lincoln Road Lincoln, MA 01773	Reg:	Village District Rezone Town of Lincoln Lincoln, MA
		Date:	December 30, 2020
From:	Kirsten Braun, P.E., Associate Ron Müller, P.E., Principal	Project #:	19055

INTRODUCTION

Ron Müller & Associates (RMA) has conducted this Traffic Assessment to evaluate potential traffic impacts associated with the proposed rezoning of the Town of Lincoln Village Center. The Village District consists of approximately 56.5 acres and 29 parcels that include a mix of residential and business uses. The rezoning will create one Village District with two subdistricts: Village Residential District and Business Village District. As part of this process the development potential of four parcels within the Town of Lincoln Village Center were assessed. Six intersections within the Village Center were analyzed regarding traffic impacts. The study area is shown in Figure 1.

The Metropolitan Area Planning Council (MAPC) has developed a buildout analysis of four parcels in the proposed South Lincoln Village District (SLVD). Their report outlines how the proposed zoning in each parcel will impact buildout potentials. Two buildout potentials were highlighted in MAPC's study: 60-percent lot coverage and 100-percent lot coverage. The current zoning allows 25% lot coverage. The proposed SLVD zoning allows 60 percent lot coverage with a special permit issued by the Planning Board. Lot Coverage is defined in the Zoning Bylaw as the gross floor area of all buildings on any lot. The 100-percent lot coverage scenario was also analyzed to determine the impact of lot coverage on density if increased coverage is allowed.

This study provides an estimate of the expected traffic generation and distribution characteristics associated with the two buildout potentials. Traffic impacts along Lincoln Road and at the study area intersections were evaluated under each buildout scenario. Pedestrian connectivity was also reviewed as the potential rezoning will promote mixed-use transit-oriented developments in the village district. This study was prepared in conformance with Massachusetts Department of Transportation (MassDOT) standards.

Figure 1
Study Area Map

EXISTING CONDITIONS

Study Area

Evaluation of the traffic impacts associated with each buildout alternative requires an evaluation of existing and projected traffic volumes, the volume of traffic expected to be generated by each development alternative and the impact that this additional traffic will have on the adjacent streets. In preparing this study, the following intersections were analyzed:

- Lincoln Road at Wells Road
- Lincoln Road at Lincoln Station driveway and 152 Lincoln Road driveway
- Lincoln Road at Ridge Road
- Lincoln Road at Post Office exit driveway and 160 Lincoln Road driveway

- Lincoln Road at Lewis Street
- Lincoln Road at Codman Road

The study area intersections and roadways are described in detail below.

Lincoln Road is classified as a minor arterial under town jurisdiction running in the east/west direction. Lincoln Road connects Route 117 (South Great Road) in the west with Trapelo Road, Bedford Road and Sandy Pond Road in the east. Within the study area, Lincoln Road is a two-way street with one lane per direction separated by a double yellow center line and pavement in good condition. The posted speed limit is 25 mph within the study area. Land use within the study area is a mix of residential and commercial.

Codman Road is classified as a minor arterial under town jurisdiction running in the northwest/southeast direction. Codman Road is a two-way street with one lane per direction separated by a double yellow center line and pavement in good condition. It serves as a connection between Route 117 (South Great Road) and Route 126 (Concord Road). The posted speed limit is 35 mph. Land use along Codman Road is residential.

Lewis Street is classified as a local roadway under town jurisdiction running in the north/south direction. Lewis Street is approximately 550 feet long connecting the Lincoln Town Highway Department and Lincoln Road. It is a two-way street with one lane per direction and pavement in fair condition. There is no posted speed limit. Land use along Lewis Street is a mix of commercial and industrial.

Ridge Road is classified as a local roadway under town jurisdiction running in the north/south direction. It is a dead-end street providing access to Ridge Court Condominiums. Ridge Road is a two-way street with one lane per direction and pavement in fair condition. There is no posted speed limit. Land use along Ridge Road is residential.

Wells Road is classified as a local roadway under town jurisdiction. It provides access to Lincoln Woods Apartments and connects to the town owned commuter parking lot north of Lincoln Station. Wells Road is a two-way street with one lane per direction and pavement in fair condition. There is no posted speed limit. Land use is residential.

Lincoln Road and Codman Road intersect to form a four-way unsignalized intersection. The northbound and southbound Codman Road approaches to the intersection are under STOP control while the eastbound and westbound Lincoln Road approaches operate freely. Each approach consists of a single share-use lane. There is sidewalk on the south side of Lincoln Road as well as on the west side of Codman Road north of the intersection. There are crosswalks across the western and southern legs of the intersection.

Lincoln Road and Lewis Street intersect to form a four-way unsignalized intersection with the Mobil Station driveway and Lewis Street offset from each other. Both the Lewis Street and Mobil Station driveway operate under STOP control while Lincoln Road operates freely. Each approach

consists of a single shared-use lane. There is sidewalk on the south side of Lincoln Road west of the intersection and sidewalk on both sides of Lincoln Road east of the intersection. There are crosswalks across the southern and eastern legs of the intersection.

Lincoln Road at Post Office exit driveway and 160 Lincoln Road driveway intersect to form a four-way unsignalized intersection with the 160 Lincoln Road driveway and Post Office driveway offset from each other. Both the 160 Lincoln Road driveway and the Post Office driveway operate under STOP control and Lincoln Road operates freely. The Post Office driveway is one-way exit only. Each approach consists of a single shared-use lane. There are sidewalks on both sides of Lincoln Road. There are crosswalks on the western and northern legs of the intersection. Just west of the intersection is a railroad crossing for the Fitchburg commuter rail line.

Lincoln Road and Ridge Road intersect to form a three-way unsignalized intersection. The northbound Ridge Road approach to the intersection is under STOP control while the eastbound and westbound Lincoln Road approaches operate freely. Each approach consists of a single share-use lane. There are sidewalks on both sides of Lincoln Road with crosswalks across the western and southern legs of the intersection.

Lincoln Road at Lincoln Station driveway and 152 Lincoln Road driveway intersect to form a four-way unsignalized intersection. The Lincoln Station driveway and the 152 Lincoln Road driveway operate under STOP control while Lincoln Road operates freely. Each approach consists of a single share-use lane. There are sidewalks on all approaches to the intersection with crosswalks across the northern and eastern legs of the intersection.

Lincoln Road and Wells Road intersect to form a three-way unsignalized intersection. The Wells Road approach to the intersection operates under STOP control while Lincoln Road operates freely. Each approach consists of a single share-use lane. There is a sidewalk on the north side of Lincoln Road. There are no crosswalks at the intersection.

Traffic Volumes

Base traffic conditions within the study area were developed by conducting manual turning movement and vehicle classification counts (TMC's) at the study intersections. The TMC counts were collected in January 2020. The TMC's were conducted during the weekday AM peak period (7:00 to 9:00 AM) and the PM peak period (4:00 to 6:00 PM). All traffic count data are provided in the Appendix. The count data indicate that the weekday AM peak hour generally occurs from 7:15 to 8:15 AM and the weekday PM peak hour generally occurs from 4:00 to 5:00 PM. However, the individual intersection peak hours were used to present a conservative analytical framework.

Automatic traffic recorder (ATR) counts were conducted by the Lincoln Police Department between Sunday, December 7 and Saturday, December 14, 2019. Counts were taken at a number of locations along Lincoln Road including by the Lincoln Mall, Codman Road and at Pierce Hill Road. These counts were completed to collect daily volume conditions.

To determine if the count data needed to be adjusted to represent annual average-month conditions consistent with state guidelines for traffic impact assessment, historical traffic volume data were obtained from the MassDOT. Based on the nearest MassDOT permanent count station located on Route 2 at the Lexington town line just west of I-95, traffic during the months of January and December are approximately 11-percent and 12-percent below annual average-month conditions. Therefore, the existing manual turning movement counts were increased by 11-percent and the ATR counts were increased by 12-percent to represent average month conditions. The MassDOT permanent count station data are provided in the Appendix. Table 1 summarizes the 2020 Existing traffic volumes on the adjacent street and the peak hour traffic flow networks are provided on Figure 2.

Table 1
Existing Traffic Volume Summary

Location/Time Period	Daily Volume [a]	Peak Hour Volume [b]		K-Factor [c]	Directional Distribution [d]
Lincoln Rd at Lincoln Mall:					
Weekday	6,755	AM:	656	9.7%	70% EB
		PM:	808	11.9%	90% WB
Lincoln Rd at Codman Rd:					
Weekday	9,620	AM:	941	9.8%	81% EB
		PM:	1,074	11.2%	76% WB
Lincoln Rd at Pierce Hill Rd:					
Weekday	8,660	AM:	843	9.7%	75% EB
		PM:	1,016	11.7%	79% WB

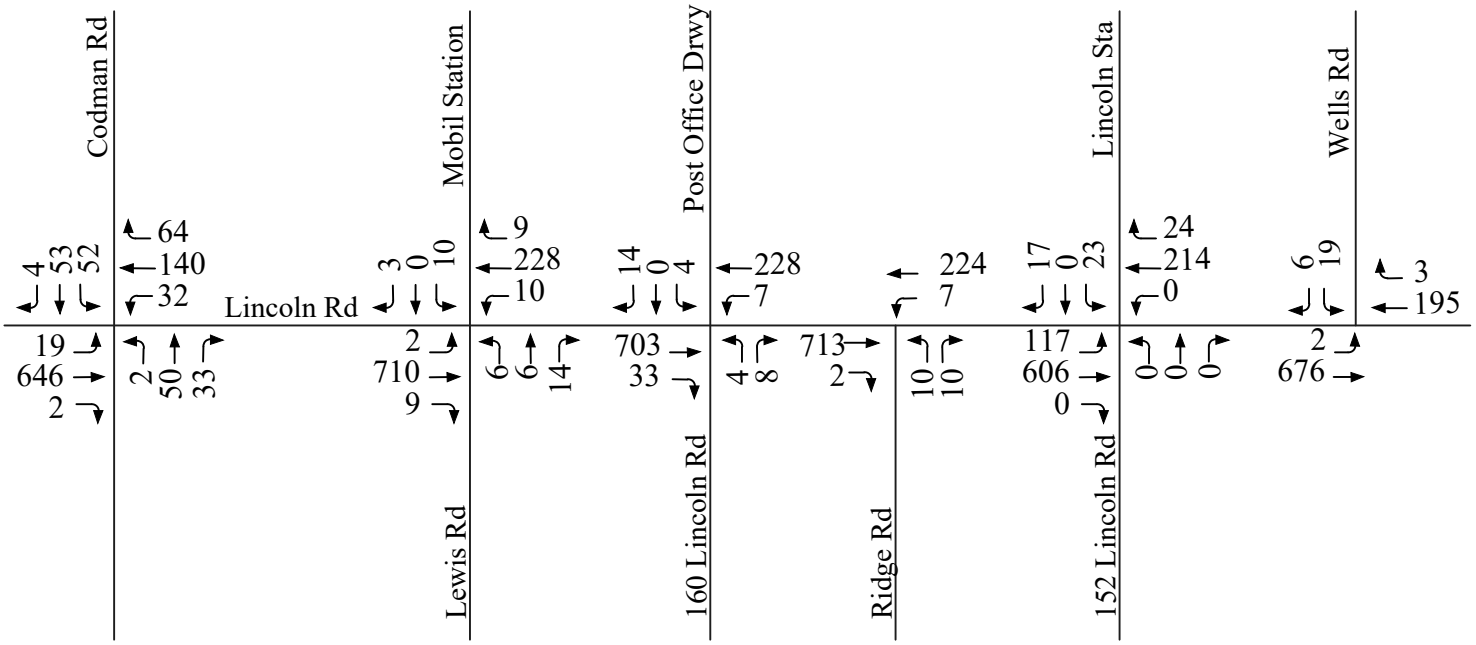
[a] In vehicles per day.
[b] In vehicles per hour.
[c] Percentage of daily traffic occurring during the peak hour.
[d] EB = eastbound, WB = Westbound

Public Transportation

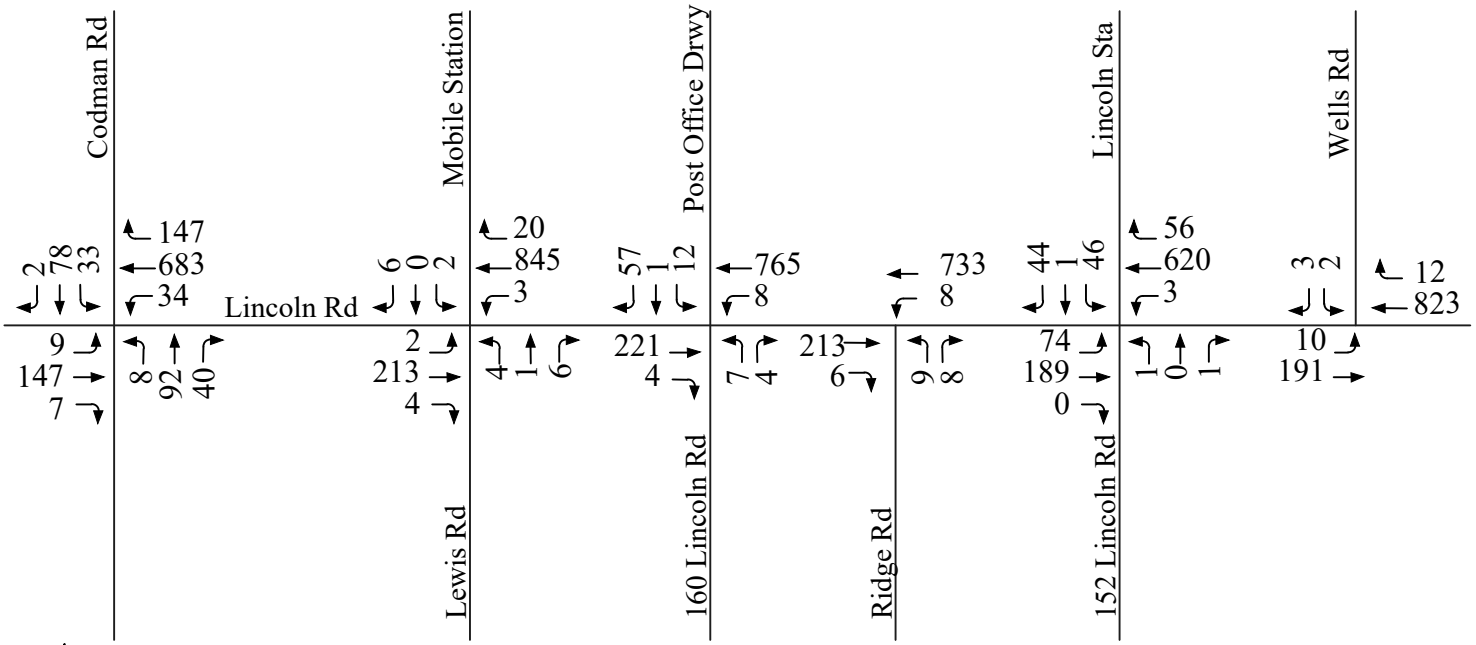
There is one Massachusetts Bay Transportation Authority (MBTA) commuter rail stop near the site, Lincoln Station. Lincoln Station is on the Fitchburg line which runs between Wachusett and North Station in Boston. The Fitchburg commuter rail line operates on weekdays between 4:50 AM and 1:45 AM and on Saturdays and Sundays between 6:30 AM and 1:00 AM. Current schedules and information for the Fitchburg commuter rail line can be found at https://mbta.com/schedules/CR-Fitchburg/timetable.

Figure 2
2020 Existing
Peak Hour Traffic Volumes

Weekday AM Peak Hour



Weekday PM Peak Hour



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MBTA Train Crossing at Lincoln Road

The train crossing was assessed as part of existing conditions analysis. Under current conditions, the train pulls up to the platform on the south side of Lincoln Road when traveling inbound and the north side of Lincoln Road when traveling outbound. The gate on Lincoln Road closes for approximately 60 seconds while the train is crossing Lincoln Road and reopens while passengers are boarding or deboarding the train. During the AM peak hour, approximately 12 cars were observed queuing on the eastbound approach to the rail crossing while six cars were observed queuing on the westbound approach. During the PM peak hour, approximately 14 cars were observed queuing on the westbound approach to the rail crossing while four cars were observed queuing on the eastbound approach to the rail crossing. It should be noted that based on field observations, the queue quickly dissipates once the rail crossing gate reopens. Impacts to adjacent driveways due to these queue lengths are shown on Figures 3 and 4 for the weekday AM and PM periods, respectively.

Based on the MBTA train schedule for the Fitchburg commuter rail line there are four train crossings on Lincoln Road occurring during the weekday 7:00 to 9:00 AM period, two in the inbound direction and two in the outbound direction. Specifically, within the AM peak hour (7:15 AM to 8:15 AM) two train crossings occur with one train traveling in the inbound direction and one train traveling in the outbound direction. During the 4:00 to 6:00 PM period, there are five train crossings, two inbound and three outbound, with two of those train crossings occurring during the weekday PM peak hour (4:00 PM – 5:00 PM). Therefore, queues created by the rail crossing only occur twice during both the weekday AM and weekday PM peak hours.

Figure 3
Weekday AM Peak Rail Crossing Queue Lengths

Figure 4
Weekday PM Peak Rail Crossing Queue Lengths

Existing Pedestrian and Bicycle Accommodation

Within the study area, there are sidewalks on both sides of Lincoln Road east of the rail crossing, while west of the rail crossing there is only one sidewalk on the south side of the road. There are five unsignalized pedestrian crossings across Lincoln Road within the downtown area with locations at Lewis Street, the Post Office (just east of the train crossing), Ridge Road, 152 Lincoln Road and St. Joseph Catholic Church. There are no bicycle lanes on Lincoln Road.

South Lincoln Village District (SLVD) Parcels

Four parcels within the SLVD were analyzed as part of MAPC's buildout memo. These four parcels were selected to be included in the analysis due to their location and higher development potentials. Rezoning and developing these parcels would create a denser, mixed-use transit-oriented development within the village district. The following provides a description of the existing conditions of each parcel while Figure 5 shows each parcel location.

Parcel 1 consists of the Lincoln Station Shopping Center, otherwise known as "The Mall". Parcel 1 is four acres and contains 37,500 square-feet of commercial space. There are a variety of businesses within the parcel including Donelan's Supermarket, Twisted Tree Café, U.S. Post Office, a bank and other miscellaneous retail uses. Primary access to the Lincoln Station Shopping Center is off of Lincoln Road opposite the driveway to 152 Lincoln Road. There is another entrance to the Lincoln Station Shopping Center located off of Lincoln Road on the east side of the parcel. This driveway is restricted to enter only and is located opposite St. Joseph Catholic Church. There is a secondary egress from the Lincoln Station Shopping Center that is primarily used by the post office located just west of the post office building.

Parcel 2 is the town-owned commuter parking lot used for Lincoln Station. The parcel is 1.25 acres and consists of a surface parking lot containing 161 parking spaces. The weekday daily fee to park is five dollars. Parking on weekends and holidays is free. Primary access to the parcel is via the entrances to Lincoln Station Shopping Center. There is also a connector roadway to Wells Road and the Lincoln Woods Apartments at the north end of the parcel, however it is assumed that this entrance is rarely used as most residents of Lincoln Woods Apartments would walk to the train station

Parcel 3 is 20 acres and consists of the Lincoln Woods apartment complex. The apartment complex contains 125 residential units located within a number of buildings. Each building is two stories tall and assigned parking is provided for each unit. Primary access to the development is via Wells Road, which connects to Lincoln Road at the south end of the parcel. There is a northerly connection between Wells Road and the town owned commuter lot in Parcel 2.

Parcel 4 is privately owned and consists of 6.64 acres. Currently the parcel is occupied by Ridge Court Condominiums. There are nine condominium buildings each consisting of four residential units for a total of 36 residential units. Parking is provided for each unit. Primary access to the condominiums is provided by Ridge Road which connects to Lincoln Road just east of Lincoln Station.

Figure 5
South Lincoln Village District Parcels

FUTURE CONDITIONS

Traffic Growth

To estimate traffic impacts associated with the proposed rezoning, future traffic conditions were projected to the year 2030, representing a 10-year design horizon. To project traffic conditions within this design horizon, two components of traffic growth were included. First, an annual average traffic growth rate was determined to account for general population growth and smaller development projects that may impact traffic along roadways in the site vicinity. Based on historic traffic counts collected by the MassDOT permanent count station located on Route 2 west of I-95 at the Lexington town line (Station #4013), traffic volumes have increased on average by approximately one-percent per year over the last 10 years of collected data. The MassDOT permanent count station data are provided in the Appendix.

MAPC population growth data was also reviewed to help determine an appropriate growth rate. Based on the MAPC report, Metro Boston 2030 Population and Housing Demand Projections, it is expected that Lincoln will experience a population decrease over the next ten years. Since the year 2000 the total population within Lincoln has been steadily decreasing and that trend is expected to continue to 2030. Although the population data shows a decline of residents in Lincoln, a one-percent annual growth rate was used to provide a conservative analysis to account for an increase in traffic due to population growth outside of Lincoln that may use Lincoln roads.

Lastly, 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 investigated. Based on discussions with local officials, it was determined that there are no approved developments that should be included in the study beyond the South Lincoln Village District rezoning efforts that are the focus of this analysis.

Given the project's proximity to the Town of Sudbury, officials within the town were also contacted to determine if there are any planned or approved developments that would impact the study. There is a residential development (Cold Brook Crossing) proposed at 16 and 36 North Road (Route 117). This residential development is to consist of 274 residential units, of which 151 units will be mid-rise multifamily housing and the remaining 123 units will be townhouses. Based on review of the traffic study performed by MDM Transportation Consultants, Inc., this development will not have an impact on the study area and any growth associated with this development would be included in the background growth adjustment.

Additionally, it was noted that both the Towns of Weston and Sudbury were investigating running a shuttle to connect residents to the Lincoln MBTA station. Based on discussions with town officials, it was found that neither town is moving forward with the shuttle within the near future. Therefore, no adjustments were made to the background traffic growth to reflect this.

No-Build Conditions

The 2030 No-Build networks were accordingly developed by applying a compounded one-percent annual growth rate (10.5 percent over 10 years) to the existing adjacent street volumes. The 2030 No-Build peak-hour traffic-flow networks are shown on Figure 6.

Transit Oriented Development (TOD)

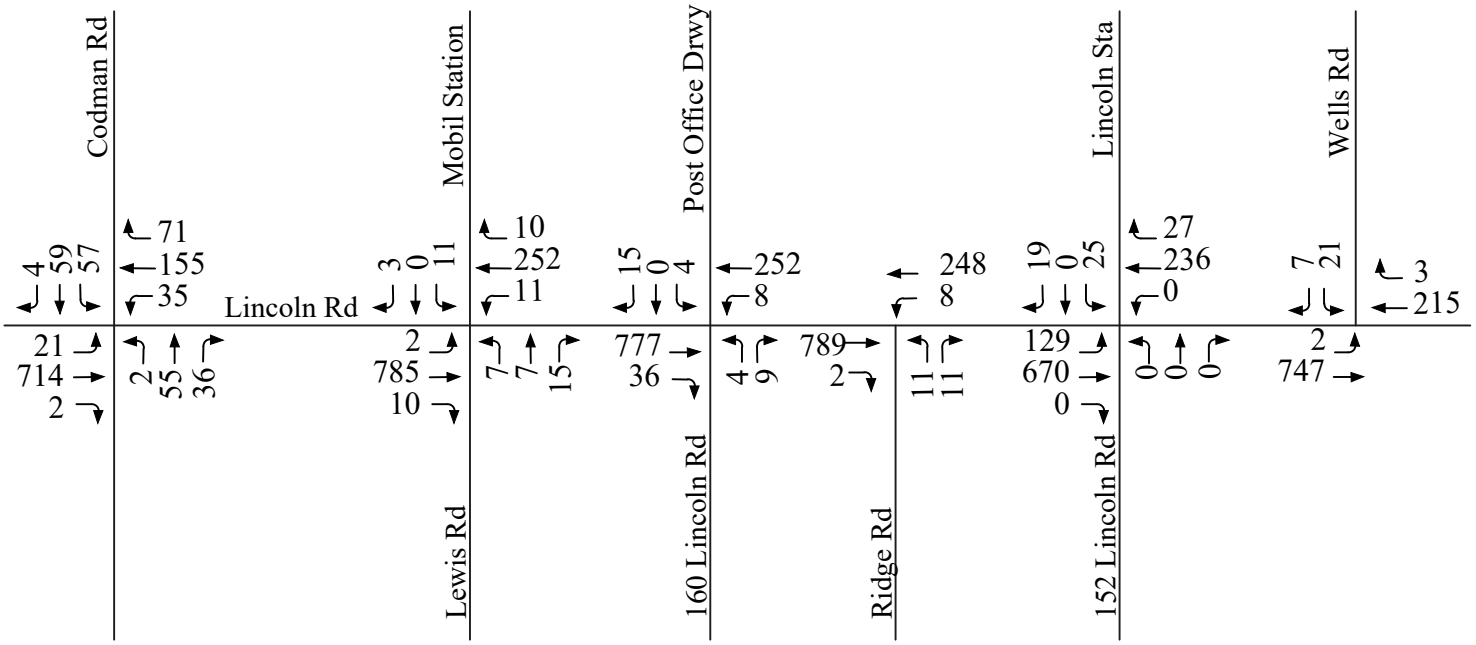
MAPC in coordination with the South Lincoln Planning and Implementation Committee (SLPIC) and Town staff have been working collectively toward rezoning the Lincoln Station Area to promote transit-oriented development (TOD). Transit oriented development encourages more compact, pedestrian friendly, mixed-use development centered around transit stations. This type of development reduces dependency on cars by creating denser walkable communities arranged around a mix of residential, commercial and office developments.

To determine the means of transportation that Lincoln residents currently use for travel to work, Census Transportation Planning Products (CTPP) data were reviewed. As shown on Figure 7 most residents in Lincoln (70-percent) commute to work by driving alone, while seven-percent of residents commute in carpools. Approximately eight-percent of Lincoln commuters use public transit. Additionally, four-percent of commuters walk or bike. The remaining commuters work from home.

It should further be noted, that given the current pandemic, a number of employers are adapting to remote work. It is expected that employers will continue to promote remote work for their employees, or allow a hybrid of remote and in-office work for the foreseeable future. This change in work style will likely result in a decrease in the number of residents commuting and an increase in the number of residents working from home.

Figure 6
2030 No-Build
Peak Hour Traffic Volumes

Weekday AM Peak Hour



Weekday PM Peak Hour

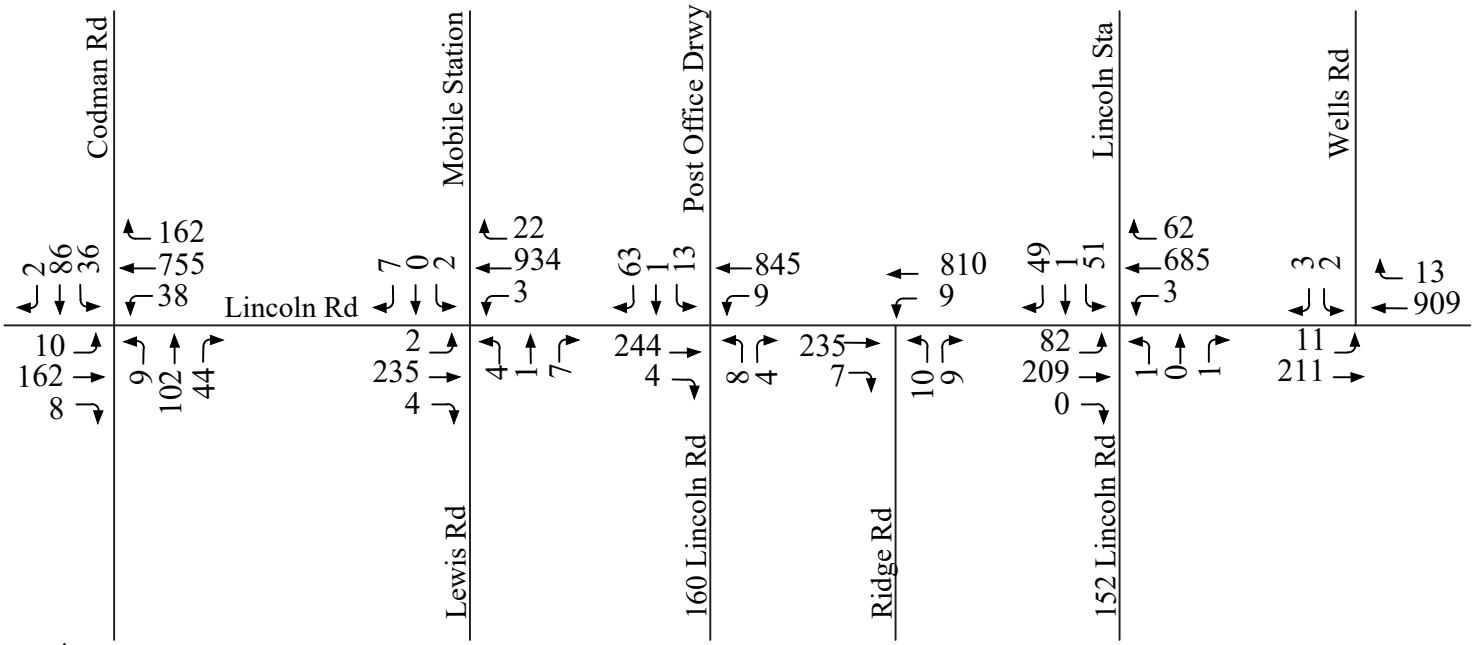


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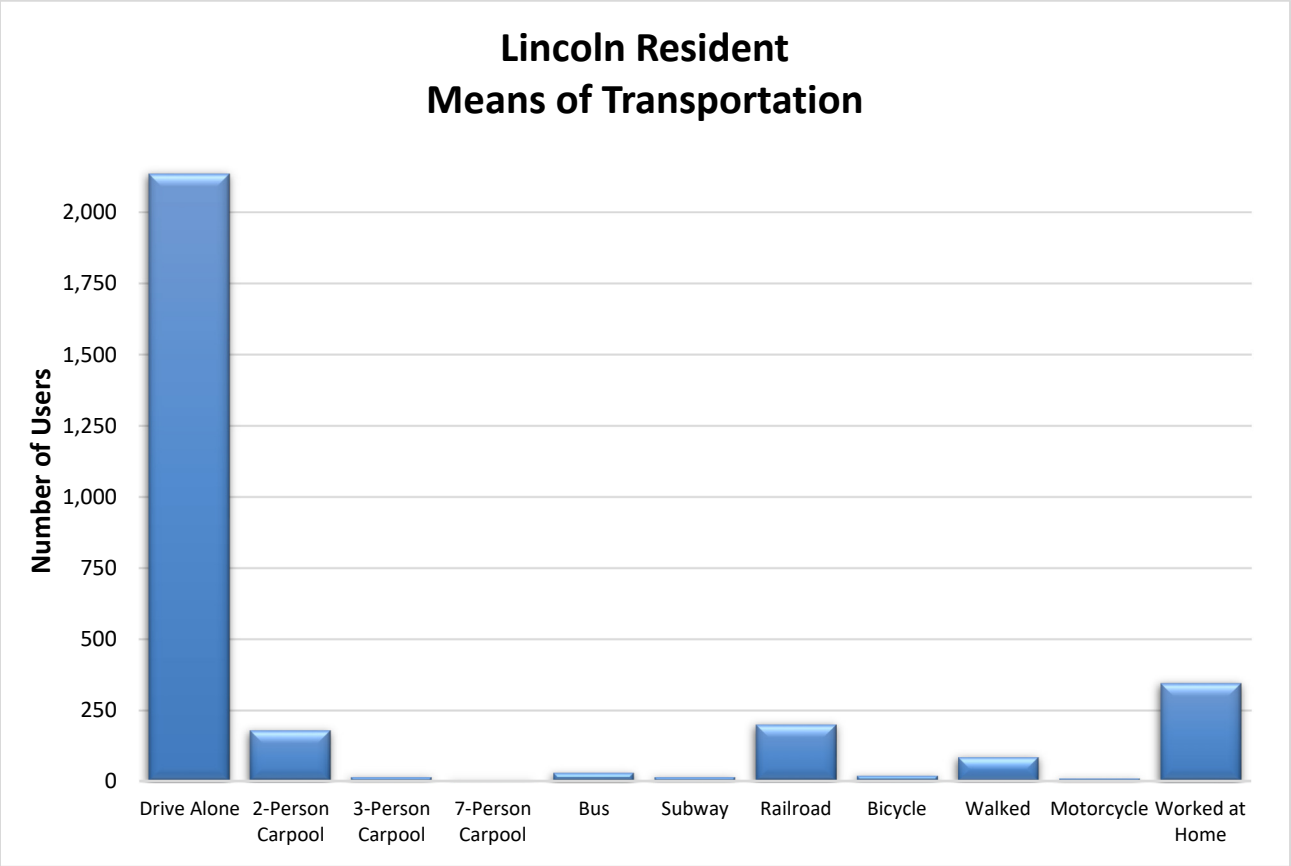
Figure 7
Lincoln Commuter Means of Transportation



Build-Out Analysis

MAPC developed a build-out analysis based on two different scenarios: 60-percent lot coverage and 100-percent lot coverage. As documented in their report, the potential development capacity for each parcel was assessed. Under the proposed SLVD zoning, lot coverage up to 60-percent would be allowed with a special permit. This lot coverage means that the total building gross floor area is not to exceed 60-percent of the total lot area. Table 2 shows the potential build-out of each parcel under the proposed zoning regulations.

Table 2
Potential Buildout Alternative 1 – 60-Percent Lot Coverage

	Alternative 1		
Parcel	Existing Land Use	Potential Build-Out	Potential Net New
Parcel 1	37,500 SF - Commercial	37,500 SF – Commercial 50 Residential Units	50 Residential Units
Parcel 2	None	25 Residential Units	25 Residential Units
Parcel 3	125 Residential Units	205 Residential Units	80 Residential Units
Parcel 4	36 Residential Units	121 Residential Units	85 Residential Units

An alternative scenario was analyzed by MAPC which assumes 100-percent lot coverage. Currently, 100-percent lot coverage is not permitted in the SLVD, however, this analysis was used to determine the impact of lot coverage on density if increased coverage is allowed. As documented in the MAPC report, only two parcels were considered for 100-percent lot coverage: Parcel 1: Lincoln Mall and Parcel 2: the town-owned surface parking lot. Table 3 shows the potential build-out of each parcel assuming 100-percent lot coverage.

Table 3
Potential Buildout Alternative 2 – 100-Percent Lot Coverage

	Alternative 2		
Parcel	Existing Land Use	Potential Land Use	Potential Net New
Parcel 1	37,500 SF - Commercial	40,000 SF – Commercial 81 Residential Units	2,500 SF - Commercial 81 Residential Units
Parcel 2	None	12,000 SF - Commercial 25 Residential Units	12,000 SF - Commercial 25 Residential Units
Parcel 3	125 Residential Units	205 Residential Units	80 Residential Units
Parcel 4	36 Residential Units	121 Residential Units	85 Residential Units

Trip Generation

Trip generation was estimated for both the 60-percent lot coverage and 100-percent lot coverage scenarios. To estimate the volume of traffic to be generated under each alternative, trip-generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*[1] were researched. ITE land use code (LUC) 220 provides trip generation characteristics for apartment units while LUC 820 provides trip generation characteristics for commercial retail developments. Although some commercial establishments such as offices and specialty shops may generate traffic at a lower rate than LUC 820 would suggest, these trip rates were applied to the proposed expansion space to provide a conservative, worst-case scenario.

Internal Capture

Due to the nature of mixed-use developments, an internal capture trip generation credit should be applied. Internal capture trips are defined as shared trips between various uses in close proximity that do not necessitate a separate trip to each use. Therefore, the total trip generation to the site reduced over that which would otherwise be calculated for each individual use. For example, some motorists ultimately destined for the grocery store in Lincoln Mall may also make stops at the Post Office or various commercial uses during the same visit. This motorist would only account for one new trip on the roadway where otherwise they would account for new trips to each land use. Therefore, a percentage of the total trip generation will be considered internal capture trips as classified in the ITE *Trip Generation Handbook*[2]. The National Cooperative Highway Research Program (NCHRP) Trip Capture Estimate Tool was used to determine the number of internal capture trips as well as the number of external trips that would occur under each buildout alternative.

It is likely that any new development in the area will share internal trips with the existing development, so to accurately estimate the total number of new trips to the area, post development, trips were generated using ITE data for the existing land uses and square footages. Internal capture trips were then estimated using the NCHRP Trip Capture Estimate Tool and the number of external trips were compared to existing traffic volumes to ensure accuracy. Additional traffic volumes were then layered onto the existing traffic volumes to determine overall internal capture and ultimately the number of external trips to be generated. The net new trip generation for both zoning alternatives is shown in Table 4.

[1] *Trip Generation Manual*, *10th Edition;* Institute of Transportation Engineers; Washington, DC; 2017.
[2] *Trip Generation Handbook, 3rd Edition;* Institute of Transportation Engineers; Washington, DC; 2014.

Table 4
Net New Trip Generation Summary

Time Period	60-Percent Lot Coverage		100-Percent Lot Coverage	
	Enter	Exit	Enter	Exit
Weekday AM Peak Hour				
Parcel 1	4	14	8	23
Parcel 2	2	7	4	9
Parcel 3	6	23	6	23
Parcel 4	7	25	7	25
Total	**19**	**69**	**25**	**80**
Weekday PM Peak Hour				
Parcel 1	9	7	18	12
Parcel 2	4	3	25	5
Parcel 3	14	12	13	10
Parcel 4	15	13	13	11
Total	**42**	**35**	**69**	**38**

As shown in Table 4, after the internal capture credit, a maximum build out based on a 60-percent lot coverage zoning restriction will generate approximately 88 additional vehicle trips (19 entering and 69 exiting) during the weekday AM peak hour and 77 additional vehicle trips (42 entering and 35 exiting) during the weekday PM peak hour. If the lot coverage restriction is increased to 100-percent, 105 additional vehicle trips (25 entering and 80 exiting) can be expected during the weekday AM peak hour and 107 additional vehicle trips (69 entering and 38 exiting) can be expected during the weekday PM peak hour. The NCHRP trip generation worksheets are provided in the Appendix.

It should further be noted that most residential units may actually experience a higher trip reduction than what is documented in the NCHRP worksheets due to the proximity to transit. A study completed by Mineta National Research Consortium and Rutgers University in 2014 found that "nearly 20-percent of those who lived within a half-mile of transit used transit to travel to work, compared to less than nine percent of those living more than a half-mile from a station" [3]. Based on the potential buildout of each parcel and their proximity to the MBTA commuter rail station it is likely that 20-percent of commuters will use public transit, further reducing the number of trips estimated during the weekday AM and PM peak hours.

[3] *Measuring the Benefits of Transit Oriented Development, Report 12-18;* Mineta National Transit Research Consortium, Rutgers University; San Jose, CA; October 2014.

Trip Distribution

The distribution of traffic generated by the two alternative lot coverage scenarios was estimated based on Journey-to-Work data provided by the U.S. Census Bureau for people residing in Lincoln. A summary of the Journey-to-Work data is provided in the Appendix. It is accordingly expected that approximately 70-percent of the site traffic will be oriented to and from the east on Lincoln Road and 30-percent of the site traffic will be oriented to and from the west on Lincoln Road. Furthermore, of the 30-percent of site traffic oriented to and from the west, 15-percent of site traffic will be oriented to and from the north on Codman Road and five-percent of site traffic will be oriented to and from the south on Codman Road. The remaining 10-percent of site traffic will be oriented to and from the west on Lincoln Road.

The distribution of commercial site traffic on the area roadways is based on the surrounding population densities and existing travel patterns observed at Lincoln Station. Accordingly, approximately 75-percent of site traffic is expected on Lincoln Road to and from the east and 25-percent to and from the west. Of the 25-percent of site traffic to and from the west, 15-percent is expected on Lincoln Road west of Codman Road and 5-percent is expected to and from the north and south on Codman Road.

Build Conditions

Based on the traffic generation and distribution estimates, traffic volumes associated with both buildout potentials were assigned to the roadway network as shown on Figure 8 and Figure 9. These volumes were then added to the 2030 No-Build traffic volumes to develop the 2030 Build traffic volumes for each scenario. The 2030 Build peak hour traffic volumes associated with a 60-percent lot coverage are shown on Figure 10 while the 2030 Build peak hour traffic volumes associated with a 100-percent lot coverage are shown on Figure 11.

Traffic Increases

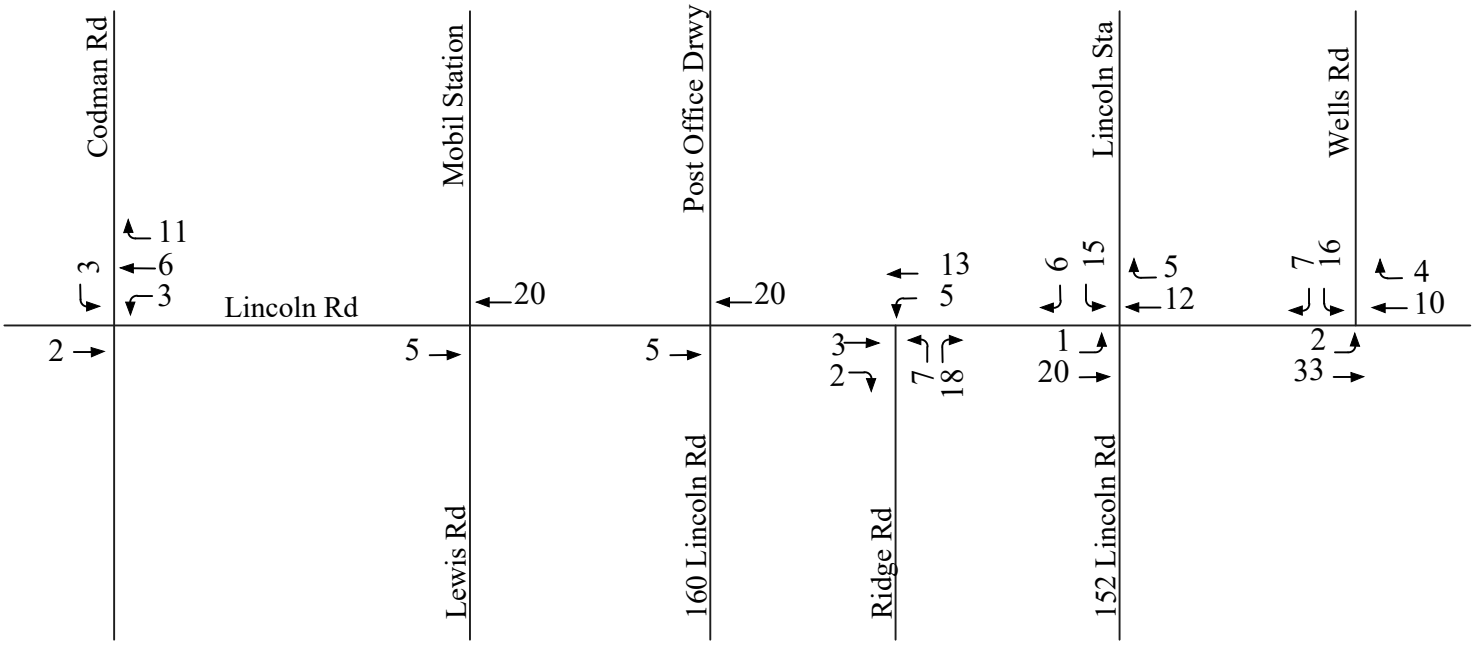
The proposed rezoning of downtown Lincoln and subsequent development will result in increases in traffic on the study area roadways. Traffic-volume increases on Lincoln Road to the east and west of the study area are expected in the range of six to 62 vehicles under 60-percent lot coverage. Under 100-percent lot coverage, traffic-volume increases are expected in the range of 10 to 76 vehicles on Lincoln Road. Traffic volume increases on other roadways within the study area are expected to be negligible and well within the daily fluctuation of traffic.

Capacity Analysis

Level-of-service (LOS) analyses were conducted at study area intersections under existing and projected volume conditions to determine the effect that the additional traffic associated with each

Figure 8
60-Percent Lot Coverage
Peak Hour Traffic Volumes

Weekday AM Peak Hour



Weekday PM Peak Hour

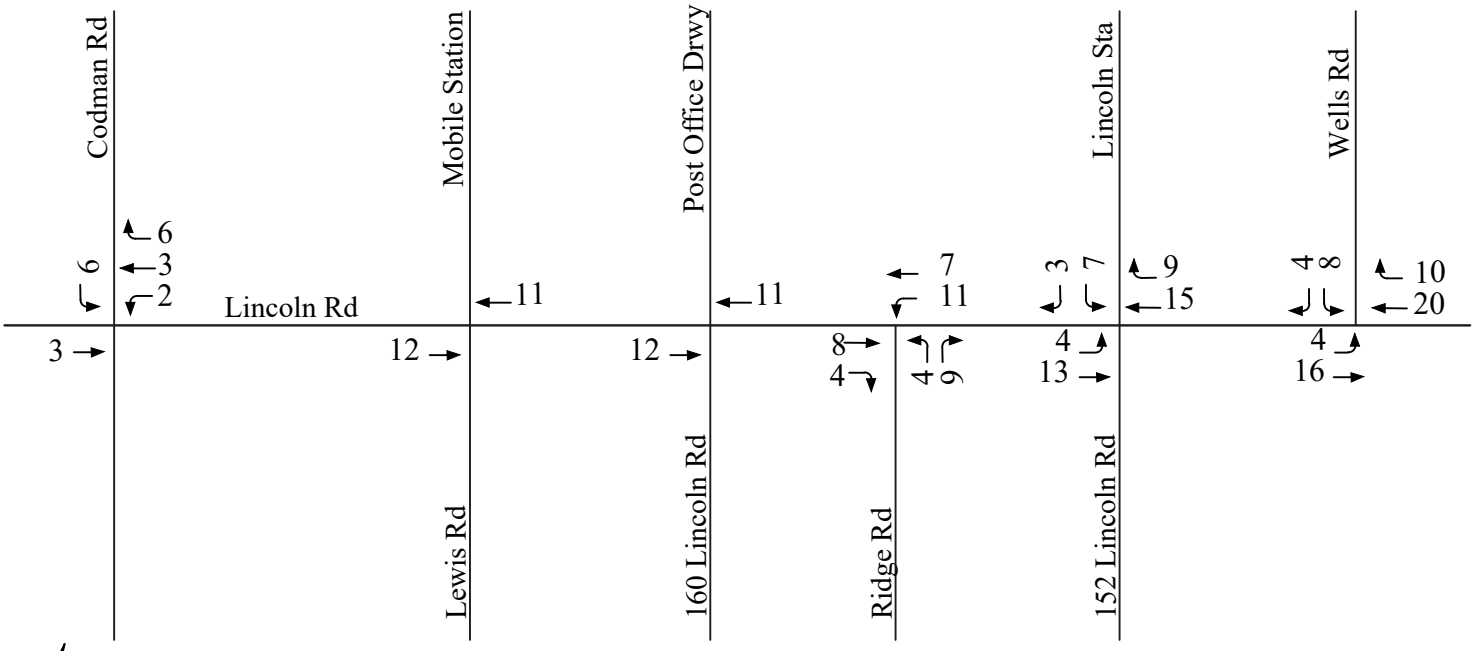


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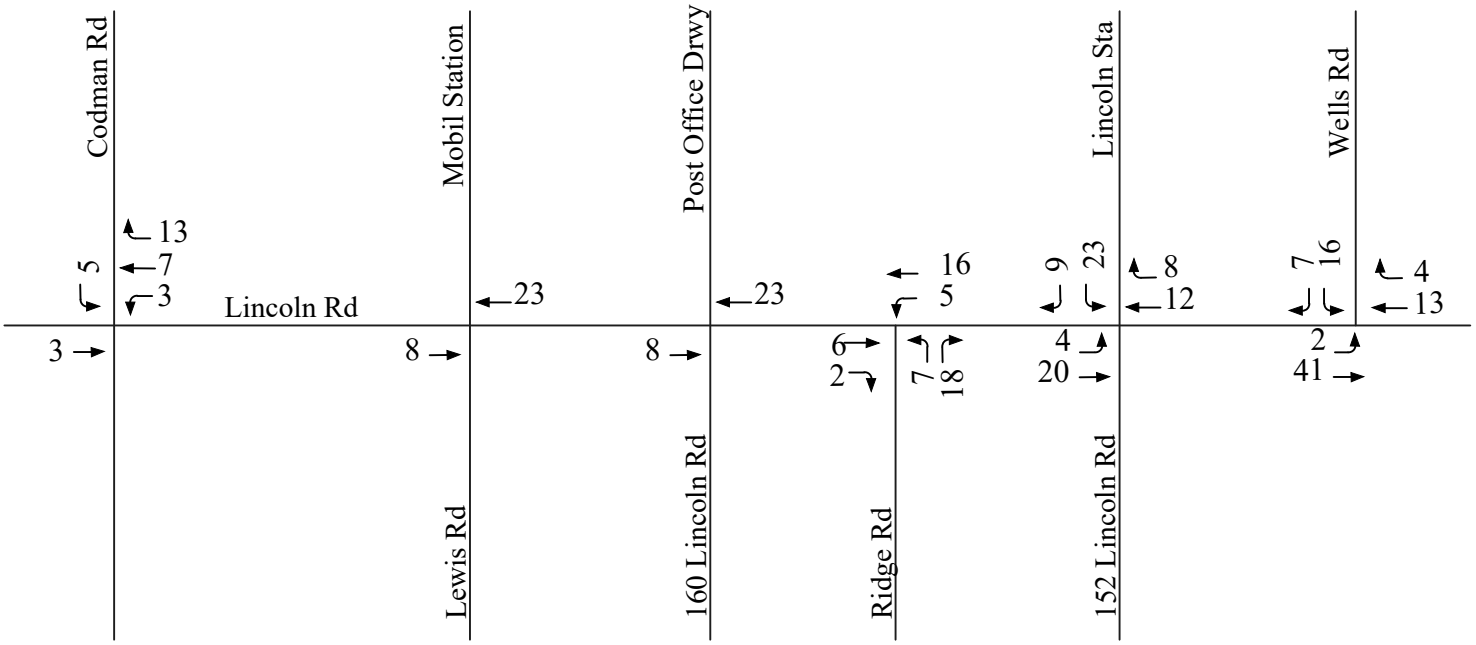
Figure 9
100-Percent Lot Coverage
Peak Hour Traffic Volumes

Weekday AM Peak Hour



Weekday PM Peak Hour

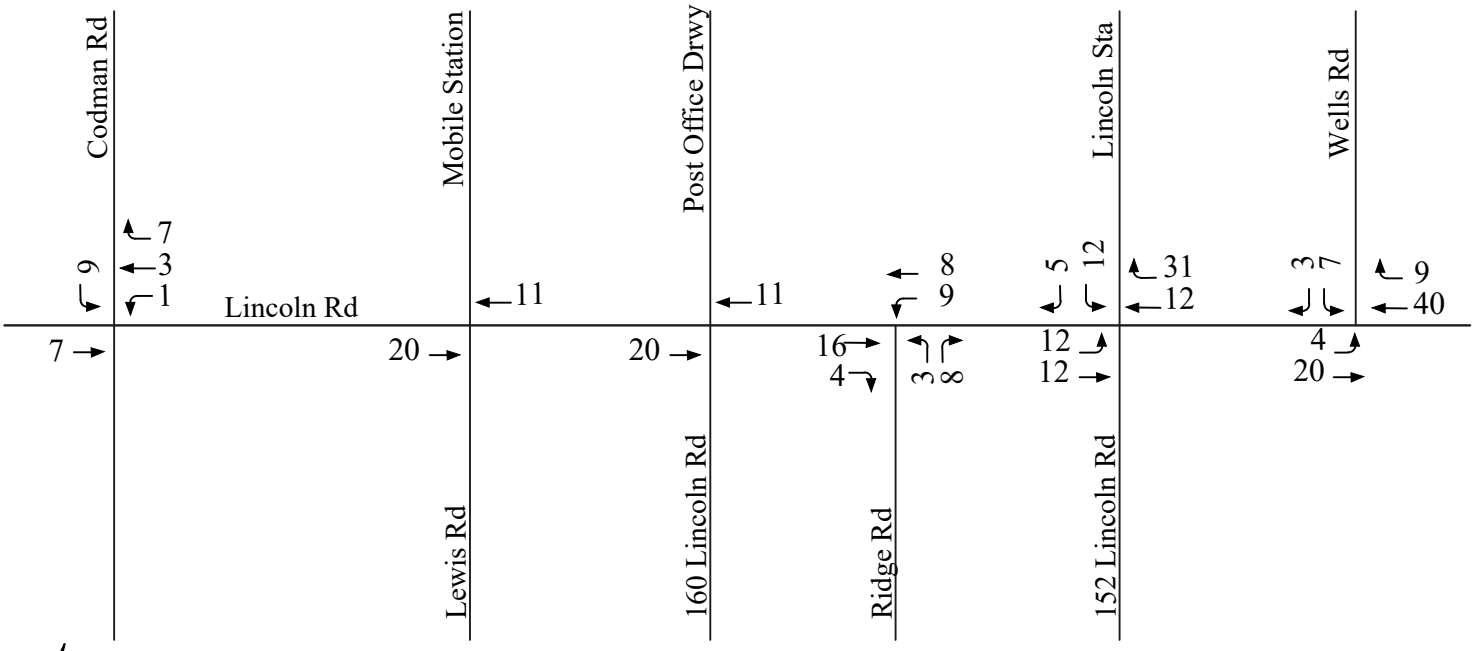


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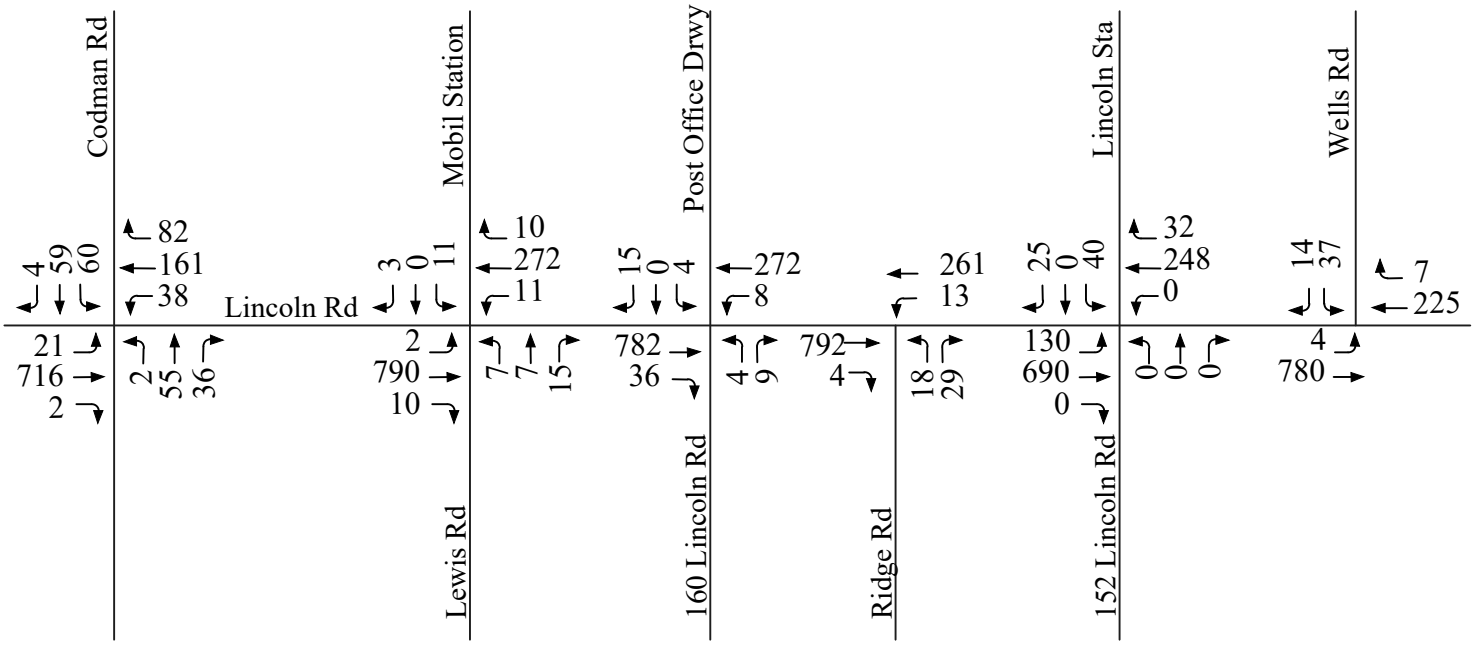
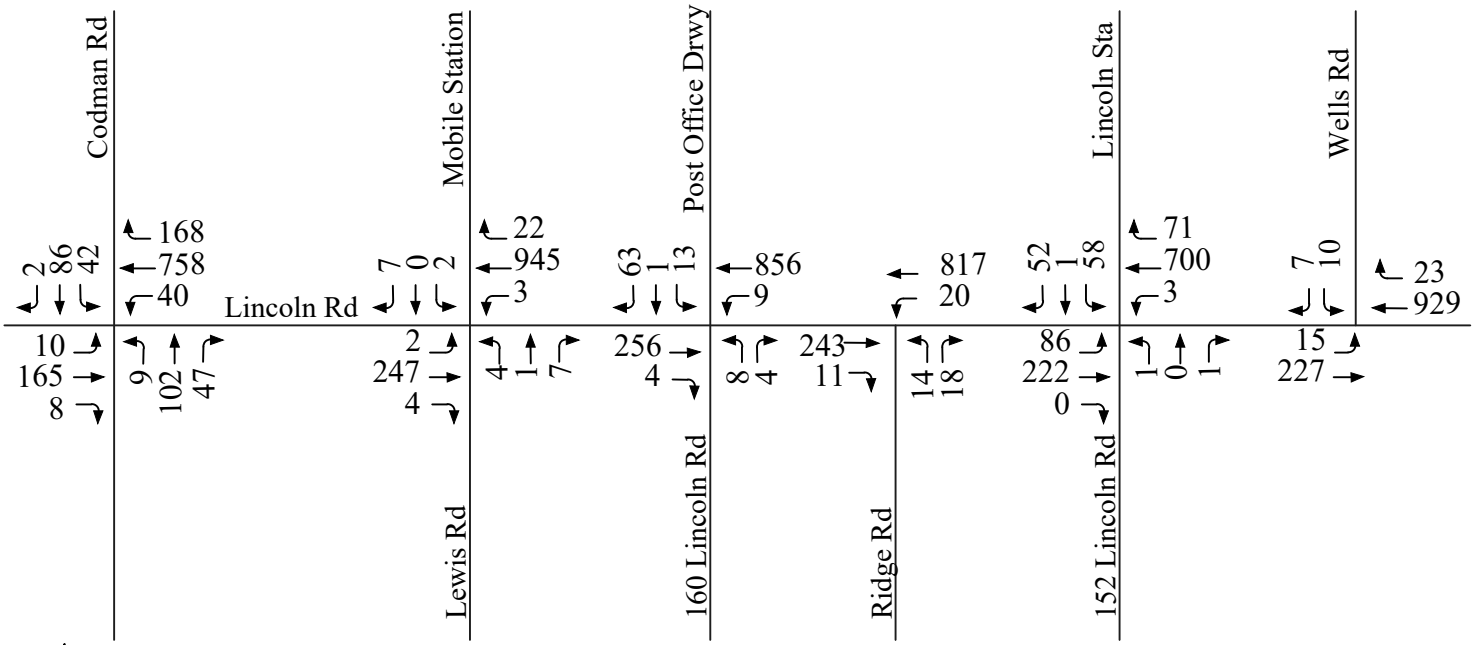
Figure 10
2030 Build - 60-Percent
Peak Hour Traffic Volumes

Weekday AM Peak Hour



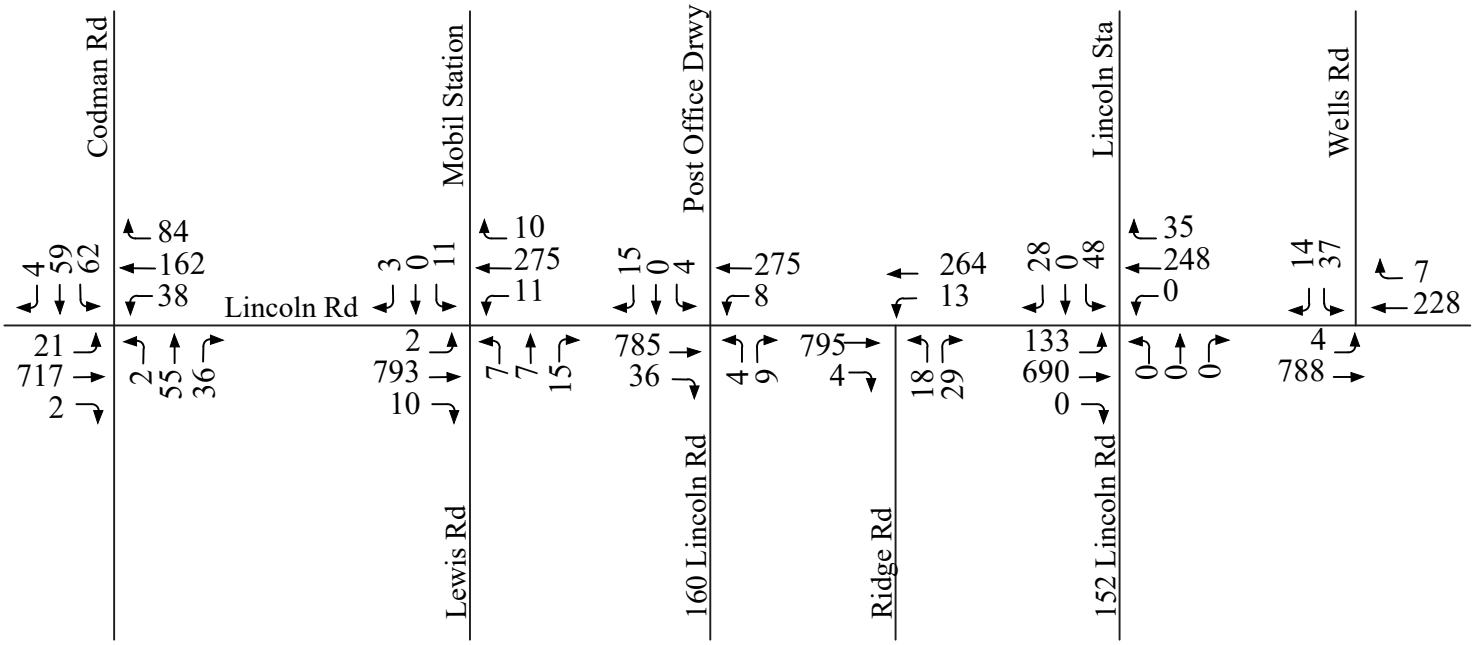
Weekday PM Peak Hour



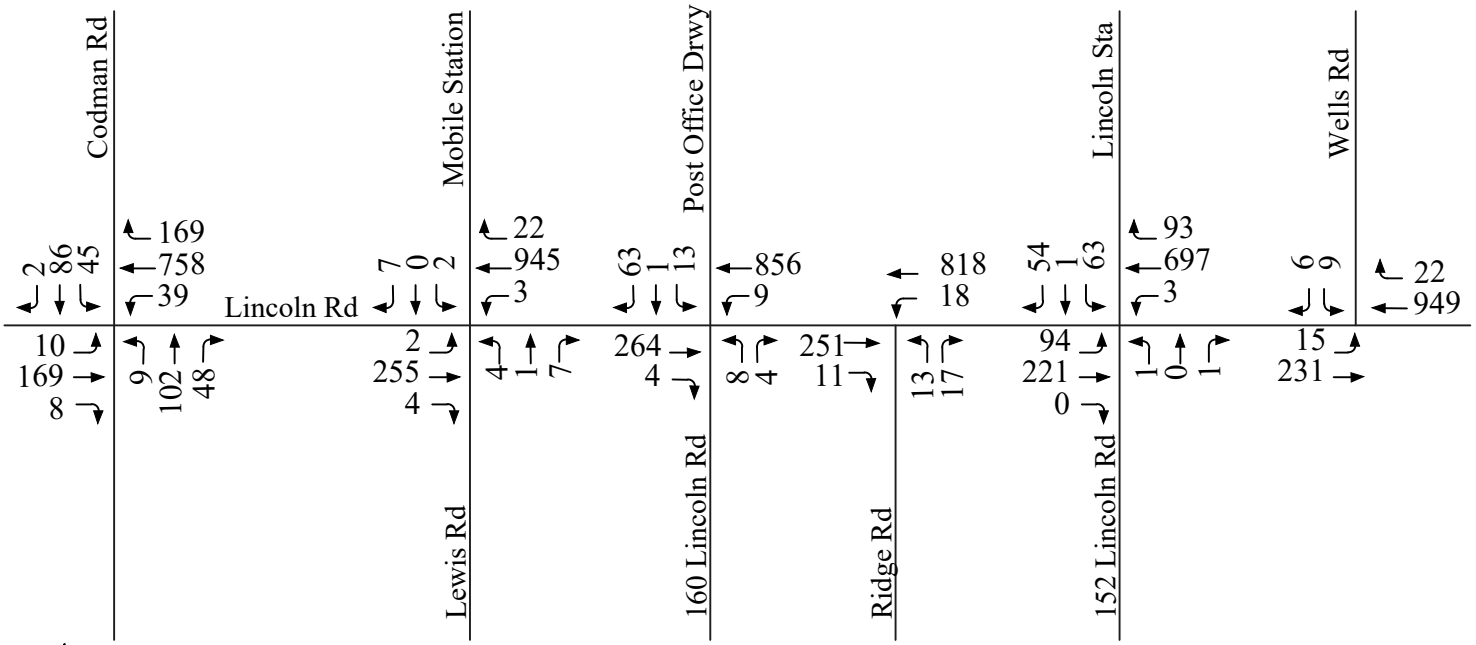
NOT TO SCALE

Figure 11
2030 Build - 100-Percent
Peak Hour Traffic Volumes

Weekday AM Peak Hour



Weekday PM Peak Hour



NOT TO SCALE

buildout potential will have on traffic operations. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual*[4] (HCM) 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. The level-of-service and queue results are presented in Table 5 and are discussed below. All analysis worksheets are provided in the Appendix.

[4] *Highway Capacity Manual 2010;* Transportation Research Board; Washington, DC; 2010.

Table 5
Unsignalized Intersection Level-of-Service Analysis Summary

Location/Peak Hour/Movement	2020 Existing				2030 No-Build				2030 Build – 60% Lot Coverage				2030 Build – 100% Lot Coverage			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Lincoln Road at Codman Road																
Weekday AM Peak Hour																
EB Left	0.02	7.7	A	0	0.02	7.8	A	25	0.02	7.8	A	25	0.02	7.8	A	25
WB Left	0.04	9.2	A	25	0.05	9.5	A	25	0.05	9.5	A	25	0.05	9.5	A	25
NB All	0.35	25.7	D	50	0.44	32.6	D	75	0.46	34.3	D	75	0.46	34.6	D	75
SB All	0.66	56.3	F	100	0.90	110	F	175	0.98	133.4	F	175	1.00	140.3	F	200
Weekday PM Peak Hour																
EB Left	0.01	9.8	A	0	0.02	10.3	B	0	0.02	10.3	B	0	0.02	10.3	B	0
WB Left	0.03	7.6	A	25	0.03	7.7	A	25	0.03	7.7	A	25	0.03	7.7	A	25
NB All	0.67	48.6	E	125	0.91	95.9	F	175	0.95	106.2	F	200	0.94	104.5	F	200
SB All	0.82	92.2	F	150	1.31	268.8	F	250	1.55	376.6	F	300	1.61	399.4	F	300
Lincoln Road at Lewis Street/Mobil Station Drive																
Weekday AM Peak Hour																
EB Left	0.01	7.8	A	0	0.01	7.8	A	0	0.01	7.9	A	0	0.01	7.9	A	0
WB Left	0.01	9.4	A	0	0.02	9.7	A	0	0.02	9.7	A	0	0.02	9.7	A	0
NB All	0.06	19.2	C	25	0.13	22.3	C	25	0.14	22.9	C	25	0.14	23.0	C	25
SB All	0.10	22.1	C	25	0.08	26.4	D	25	0.09	27.5	D	25	0.09	27.7	D	25
Weekday PM Peak Hour																
EB Left	0.01	10.0	A	0	0.01	10.4	B	0	0.01	10.5	B	0	0.01	10.5	B	0
WB Left	0.01	7.7	A	0	0.01	7.8	A	0	0.01	7.8	A	0	0.01	7.8	A	0
NB All	0.04	17.7	C	25	0.05	19.2	C	25	0.05	19.8	C	25	0.05	20.1	C	25
SB All	0.03	19.3	C	25	0.04	21.4	C	25	0.04	21.9	C	25	0.04	22.0	C	25
Lincoln Road at 160 Lincoln Road/Post Office																
Weekday AM Peak Hour																
WB Left	0.01	9.4	A	0	0.01	9.8	A	0	0.01	9.8	A	0	0.01	9.8	A	0
NB All	0.04	17.7	C	25	0.05	19.5	C	25	0.06	19.9	C	25	0.06	20.0	C	25
SB All	0.04	12.9	B	25	0.05	13.7	B	25	0.05	14.0	B	25	0.05	14.1	B	25
Weekday PM Peak Hour																
WB Left	0.01	7.7	A	0	0.01	7.8	A	0	0.01	7.8	A	0	0.01	7.9	A	0
NB All	0.06	22.9	C	25	0.08	28.8	D	25	0.08	29.8	D	25	0.08	30.2	D	25
SB All	0.24	20.1	C	25	0.30	23.7	C	50	0.31	24.3	C	50	0.31	24.4	C	50

Table 5 (Continued)
Unsignalized Intersection Level-of-Service Analysis Summary

Location/Peak Hour/Movement	2020 Existing				2030 No-Build				2030 Build – 60% Lot Coverage				2030 Build – 100% Lot Coverage			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Lincoln Road at Ridge Road																
Weekday AM Peak Hour																
WB Left	0.01	9.3	A	0	0.01	9.7	A	0	0.01	9.7	A	0	0.02	9.7	A	25
NB All	0.07	17.5	C	25	0.09	19.6	C	25	0.18	20.6	C	25	0.18	20.9	C	25
Weekday PM Peak Hour																
WB Left	0.01	7.7	A	0	0.01	7.8	A	0	0.02	7.8	A	25	0.02	7.9	A	0
NB All	0.05	15.3	C	25	0.06	16.8	C	25	0.10	16.8	C	25	0.10	16.8	C	25
Lincoln Road at Lincoln Station Driveway																
Weekday AM Peak Hour																
EB Left	0.10	8.1	A	25	0.11	8.2	A	25	0.11	8.2	A	25	0.12	8.2	A	25
WB Left	0.0	0.0	A	0	0.0	0.0	A	0	0.0	0.0	A	0	0.0	0.0	A	0
NB All	0.0	0.0	A	0	0.0	0.0	A	0	0.0	0.0	A	0	0.0	0.0	A	0
SB All	0.19	24.0	C	25	0.25	29.7	D	25	0.42	40.8	E	50	0.51	47.8	E	75
Weekday PM Peak Hour																
EB Left	0.09	9.6	A	25	0.11	10.0	A	25	0.12	10.1	B	25	0.13	10.3	B	25
WB Left	0.0	0.0	A	0	0.01	7.7	A	0	0.01	7.7	A	0	0.01	7.7	A	0
NB All	0.01	18.8	C	0	0.01	22.0	C	0	0.01	23.6	C	0	0.01	24.8	C	0
SB All	0.39	27.9	D	50	0.52	38.6	E	75	0.62	49.0	E	100	0.69	59.5	F	125
Lincoln Road at Wells Road																
Weekday AM Peak Hour																
EB Left	0.01	7.7	A	0	0.01	7.7	A	0	0.01	7.7	A	0	0.01	7.8	A	0
SB All	0.08	16.5	C	25	0.10	18.3	C	25	0.19	20.4	C	25	0.20	20.8	C	25
Weekday PM Peak Hour																
EB Left	0.01	9.9	A	0	0.02	10.3	B	25	0.02	10.5	B	25	0.03	10.6	B	25
SB All	0.02	18.2	C	25	0.02	20.3	C	25	0.09	24.1	C	25	0.08	24.8	C	25

[a] Volume-to-capacity ratio;
[b] Average control delay in seconds per vehicle;
[c] Level of service;
[d] 95th percentile queue in feet, assuming 25 feet per vehicle.

As shown in Table 5, all study area intersections currently operate at acceptable levels of service during peak hours with the exception of the intersection of Lincoln Road and Codman Road. During the AM peak hour, the southbound approach to the intersection operates at LOS F while during the PM peak hour the northbound approach operates at LOS E and the southbound approach operates at LOS F.

With the growth in traffic anticipated under 2030 No-Build conditions, operations are expected to be comparable to existing conditions at the intersections of Lincoln Road at Lewis Street/Mobil Station driveway, Lincoln Road at the 160 Lincoln Road/Post Office, Lincoln Road at Ridge Road and Lincoln Road at Wells Road. At the intersection of Lincoln Road and Codman Road the northbound approach degrades from LOS E to LOS F during the PM peak hour and the volume of traffic on the southbound Codman Road approach exceeds the theoretical capacity of the approach (volume-to-capacity = 1.31). This indicates that drivers will start to accept gaps in mainline traffic shorter than recommended in the HCM and could lead to safety concerns. At the intersection of Lincoln Road and Lincoln Station driveway the southbound movement is expected to degrade from LOS D to LOS E during the PM peak hour.

The increase in traffic expected from maximum buildout within the Lincoln Station area does not significantly alter traffic operations over the No-Build conditions, regardless of 60-percent or 100-percent lot coverage zoning restrictions. The delays experienced on the Codman Road approaches will be exacerbated particularly during the weekday PM peak hour where a volume-to-capacity ratio of up to 1.61 is calculated for the southbound approach. It is recommended that this intersection be closely monitored in the future including calculation of actual vehicle delays and accident experience and that corrective measures be considered if the monitoring shows unacceptable traffic delays or increased accident experience. Such measures could include roundabout traffic control or traffic signal installation.

The Lincoln Station driveway approach to Lincoln Road is expected to experience increased delays as a result of maximum build-out of the Lincoln Station area and is projected to degrade to LOS F under the 100-percent lot coverage scenario. However, volume-to-capacity ratios remain well below 1.0 indicating that ample capacity remains for the approach to allow safe operation.

RECOMMENDATIONS

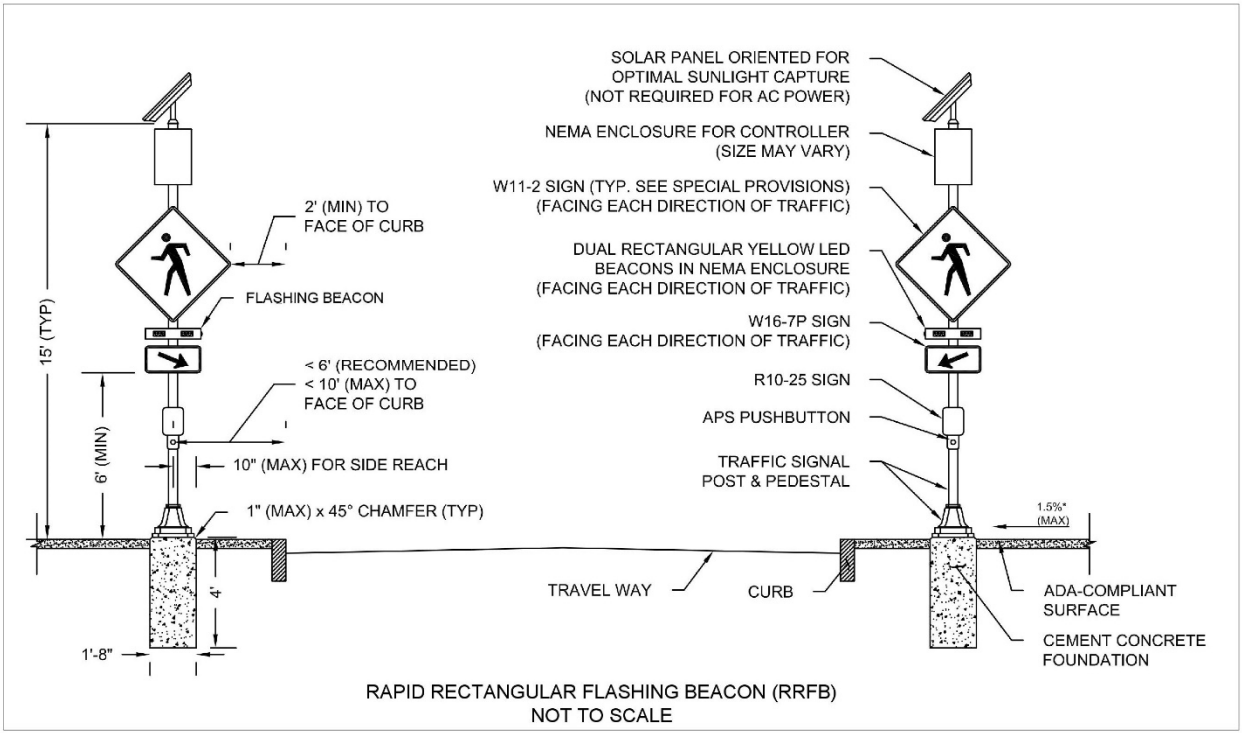
Figure 12
Source : https://tti.tamu.edu/researcher/new-rapid-flashing-beacon-shows-great-promise-in-improving-pedestrian-safety

Based on a review of the existing conditions and analysis of projected traffic operations, a number of recommendations are made to improve operations and safety in the SLVD. Pedestrian connectivity between uses is important to promote a transit-oriented development. To improve pedestrian accessibility in the downtown area, it is recommended that the number of unsignalized, mid-block crosswalks along Lincoln Road be consolidated. Consolidating the multiple crossings will help direct pedestrians to use the crosswalks at the most appropriate locations and limit the number of interactions between pedestrians and vehicles. Currently there are five unsignalized crossings within the village district at the following locations: Lewis Street, Post Office, Ridge Road, 152 Lincoln Road and at St. Joseph Catholic Church. These five crossings all occur within an approximately 650-foot section of Lincoln Road. Additionally, most crossings are missing the proper pedestrian crossing signs (W11-2 with W16-7P arrow plaques as shown on Figure 12).

Based on the pedestrian counts conducted at each of the crosswalks and given the fact that a sidewalk does not currently exist along Ridge Road, it is recommended that the Lincoln Road crosswalk at Ridge Road be removed. In addition, it is recommended that proper pedestrian crossing warning signs be placed at all remaining crossings (W11-2 with W16-7P arrow plaques) as well as appropriate handicap-accessible wheelchair ramps. It is further recommended that Rectangular Rapid Flashing Beacons (RRFB) be installed at all remaining crossings, as also shown on Figure 12. The recommended sign assembly is shown on Figure 13.

Finally, and as discussed in the *Capacity Analysis* section of this report, it is recommended that the Lincoln Road and Codman Road intersection be closely monitored in the future including calculation of actual vehicle delays and accident experience and that corrective measures be considered if the monitoring shows unacceptable traffic delays or increased accident experience. Such measures could include installation of flashing beacons to advise motorists of the intersecting streets (if delays are acceptable, but an increase in traffic crashes is observed) or traffic capacity improvements such as roundabout traffic control or traffic signal installation. Based on the projected 2030 volumes, the warrants for traffic signal installation are not expected to be met.

Figure 13
RRFB Sign Assembly



CONCLUSIONS

Existing and future conditions under each zoning alternative have been described and analyzed with respect to traffic operations at the study area intersections. Conclusions of this effort and recommendations are presented below.

- MAPC performed a potential build out analysis of four parcels within the South Lincoln Village District. The buildout memorandum highlights two buildout alternatives, 60-percent lot coverage and 100-percent lot coverage. The 60-pecent lot coverage analysis is based on proposed SLVD zoning requirements restricting the total building floor area to 60-percent of the total lot area. The 100-percent lot coverage scenario was analyzed to assess the impact of lot coverage on density.

- Based on a zoning restriction of 60-percent lot coverage, a maximum buildout of the SLVD can be expected to generate approximately 87 additional trips (19 entering and 68 exiting)

during the weekday AM peak hour and 76 additional trips (41 entering and 35 exiting) during the weekday PM peak hour.

- If the zoning requirement is increased to allow 100-percent lot coverage, 104 additional trips (25 entering and 79 exiting) can be expected during the weekday AM peak hour and 106 additional trips (68 entering and 38 exiting) during the weekday PM peak hour.

- Due to the nature of a Transit Oriented Development (TOD) and the proximity of all four parcels to the MBTA commuter rail station, additional trips associated with residential development could be reduced by as much as 20 percent as more residents will likely commute via public transit.

- Based on the zoning restriction of 60-percent lot coverage, traffic increases on Lincoln Road to the east and west of the study area are expected in the range of six (west of Codman Road) to 62 (east of Wells Road) additional vehicles during the weekday AM and PM peak hours.

- Based on 100-percent lot coverage, traffic increases on Lincoln Road to the east and west of the study area are expected in the range of 10 (west of Codman Road) to 76 (east of Wells Road) additional vehicles during the weekday AM and PM peak hours.

- The maximum buildout potential under both the 60-percent and 100-percent lot coverage scenarios is expected to result in minimal increases in delay and vehicle queues at most intersections along Lincoln Road during both the weekday AM and PM peak hours.

- The delays experienced on the Codman Road approaches will be exacerbated by both buildout alternatives particularly during the weekday PM peak hour where a volume-to-capacity ratio of up to 1.61 is calculated for the southbound approach.

- It is recommended that the Lincoln Road and Codman Road intersection be closely monitored in the future including calculation of actual vehicle delays and accident experience and that corrective measures be considered if the monitoring shows unacceptable traffic delays or increased accident experience.

- The Lincoln Station driveway approach to Lincoln Road is expected to experience increased delays as a result of both build-out scenarios and is projected to degrade to LOS F under the 100-percent lot coverage scenario. However, volume-to-capacity ratios remain well below 1.0 indicating that ample capacity remains for the approach to allow safe operation.

- It is recommended that the unsignalized pedestrian crossings on Lincoln Road be consolidated by removing the pedestrian crossing at Ridge Road to reduce the number of pedestrian and vehicle conflicts through the downtown area. Pedestrians using this crossing will still be able to use the crossing at the Post Office or the crossing at 152 Lincoln Road.

- It is recommended that proper pedestrian crossing warning signs (W11-2 with W16-7P arrow plaques) be placed at all remaining crossings. It is further recommended that all wheelchair ramps be updated to be handicap accessible.

- To further improve pedestrian safety, it is recommended that Rectangular Rapid Flashing Beacons (RRFB) be installed at the remaining pedestrian crossings.

APPENDIX

Traffic Count Data
Seasonal/Historical Adjustment Data
Trip Generation and Distribution Worksheets
Capacity Analysis Methodology and Worksheets

Traffic Count Data

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Post Office Exit AM
Site Code : 19055
Start Date : 1/14/2020
Page No : 1

E-W Street: Lincoln Street
N-S Street: Post Office Exit-160 Lincoln

Groups Printed- Cars - Trucks

	Post Office Exit From North					Lincoln Street From East					160 Lincoln St. Driveway From South					Lincoln Street From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	0	21	0	1	22	0	0	1	3	4	0	189	1	0	190	217
07:15 AM	2	0	3	0	5	1	35	0	0	36	1	0	2	2	5	0	174	7	1	182	228
07:30 AM	1	0	1	17	19	3	49	0	0	52	3	0	5	2	10	0	152	8	1	161	242
07:45 AM	1	0	5	1	7	0	50	0	1	51	0	0	0	1	1	0	138	4	1	143	202
Total	4	0	9	19	32	4	155	0	2	161	4	0	8	8	20	0	653	20	3	676	889
08:00 AM	0	0	4	11	15	2	71	0	0	73	0	0	0	0	0	0	153	11	0	164	252
08:15 AM	1	0	5	5	11	0	50	0	0	50	2	0	2	0	4	0	127	1	1	129	194
08:30 AM	0	0	9	0	9	1	40	0	0	41	1	0	0	1	2	0	127	3	0	130	182
08:45 AM	2	0	2	2	6	3	23	0	0	26	1	0	1	0	2	0	111	5	0	116	150
Total	3	0	20	18	41	6	184	0	0	190	4	0	3	1	8	0	518	20	1	539	778
Grand Total	7	0	29	37	73	10	339	0	2	351	8	0	11	9	28	0	1171	40	4	1215	1667
Apprch %	9.6	0	39.7	50.7		2.8	96.6	0	0.6		28.6	0	39.3	32.1		0	96.4	3.3	0.3		
Total %	0.4	0	1.7	2.2	4.4	0.6	20.3	0	0.1	21.1	0.5	0	0.7	0.5	1.7	0	70.2	2.4	0.2	72.9	
Cars	7	0	28	37	72	10	318	0	2	330	8	0	11	9	28	0	1141	40	4	1185	1615
% Cars	100	0	96.6	100	98.6	100	93.8	0	100	94	100	0	100	100	100	0	97.4	100	100	97.5	96.9
Trucks	0	0	1	0	1	0	21	0	0	21	0	0	0	0	0	0	30	0	0	30	52
% Trucks	0	0	3.4	0	1.4	0	6.2	0	0	6	0	0	0	0	0	0	2.6	0	0	2.5	3.1

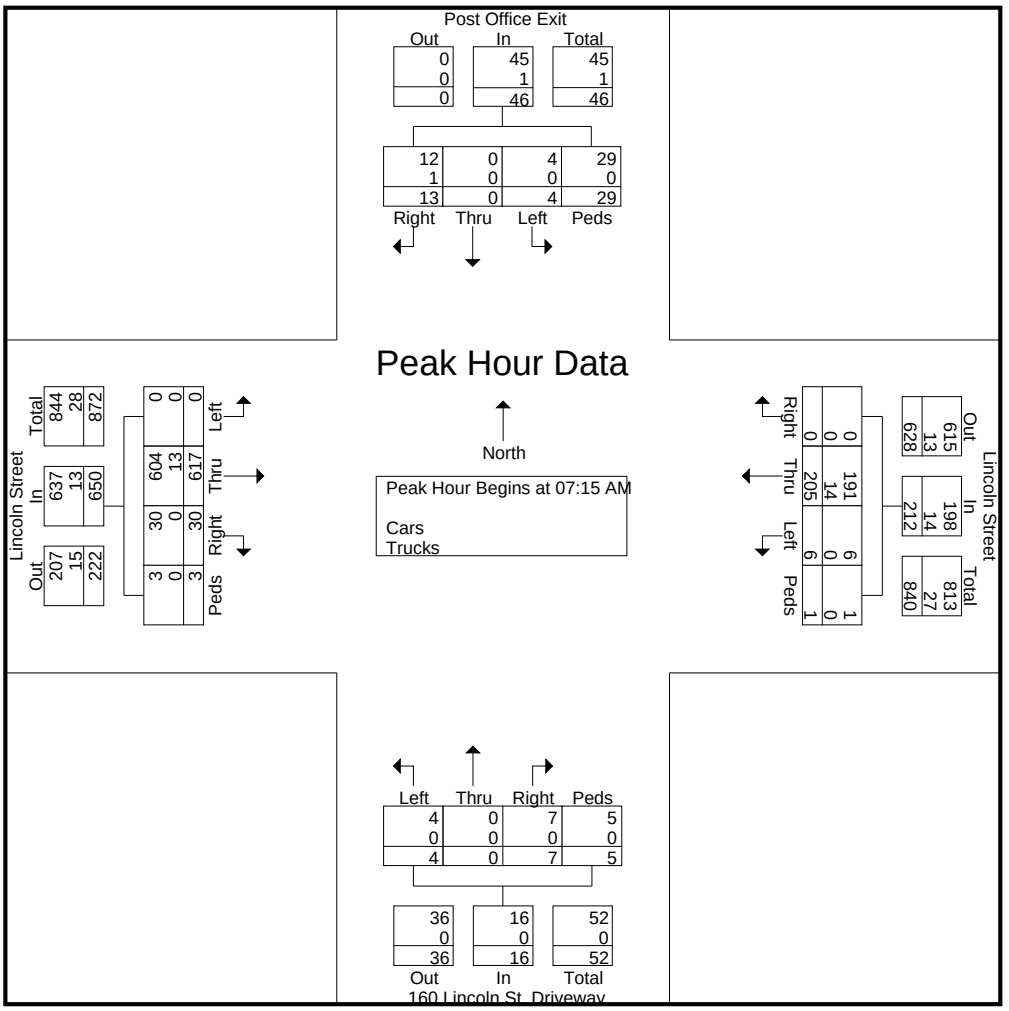
Ron Müller & Associates

Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Post Office Exit AM
Site Code : 19055
Start Date : 1/14/2020
Page No : 2

E-W Street: Lincoln Street
N-S Street: Post Office Exit-160 Lincoln

	Post Office Exit From North					Lincoln Street From East					160 Lincoln St. Driveway From South					Lincoln Street From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**2**	0	3	0	5	1	35	0	0	36	1	0	2	**2**	5	0	**174**	7	**1**	**182**	228
07:30 AM	1	0	1	**17**	**19**	**3**	49	0	0	52	**3**	0	**5**	2	**10**	0	152	8	1	161	242
07:45 AM	1	0	**5**	1	7	0	50	0	**1**	51	0	0	0	1	1	0	138	4	1	143	202
08:00 AM	0	0	4	11	15	2	**71**	0	0	**73**	0	0	0	0	0	0	153	**11**	0	164	**252**
Total Volume	4	0	13	29	46	6	205	0	1	212	4	0	7	5	16	0	617	30	3	650	924
% App. Total	8.7	0	28.3	63		2.8	96.7	0	0.5		25	0	43.8	31.2		0	94.9	4.6	0.5		
PHF	.500	.000	.650	.426	.605	.500	.722	.000	.250	.726	.333	.000	.350	.625	.400	.000	.886	.682	.750	.893	.917
Cars	4	0	12	29	45	6	191	0	1	198	4	0	7	5	16	0	604	30	3	637	896
% Cars	100	0	92.3	100	97.8	100	93.2	0	100	93.4	100	0	100	100	100	0	97.9	100	100	98.0	97.0
Trucks	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	0	13	0	0	13	28
% Trucks	0	0	7.7	0	2.2	0	6.8	0	0	6.6	0	0	0	0	0	0	2.1	0	0	2.0	3.0



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Post Office Exit PM
Site Code : 19055
Start Date : 1/8/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Post Office Exit-160 Lincoln

Groups Printed- Cars - Trucks

	Post Office Exit From North					Lincoln Road From East					160 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:45 PM	3	0	12	1	16	1	186	0	0	187	1	0	2	1	4	0	54	2	4	60	267
Total	3	0	12	1	16	1	186	0	0	187	1	0	2	1	4	0	54	2	4	60	267
04:00 PM	4	0	8	2	14	1	187	0	0	188	1	0	1	0	2	0	45	0	1	46	250
04:15 PM	1	1	18	1	21	0	173	0	0	173	2	0	0	0	2	0	59	2	2	63	259
04:30 PM	3	0	13	0	16	0	143	0	0	143	2	0	1	2	5	0	41	0	1	42	206
04:45 PM	1	0	8	1	10	0	172	0	0	172	5	0	0	0	5	0	55	1	0	56	243
Total	9	1	47	4	61	1	675	0	0	676	10	0	2	2	14	0	200	3	4	207	958
05:00 PM	3	0	11	0	14	0	161	0	0	161	1	0	1	0	2	0	43	1	4	48	225
05:15 PM	0	0	3	3	6	0	165	0	0	165	1	0	0	0	1	0	54	0	1	55	227
05:30 PM	2	1	19	0	22	0	184	0	0	184	3	0	2	0	5	0	39	1	9	49	260
Grand Total	17	2	92	8	119	2	1371	0	0	1373	16	0	7	3	26	0	390	7	22	419	1937
Apprch %	14.3	1.7	77.3	6.7		0.1	99.9	0	0		61.5	0	26.9	11.5		0	93.1	1.7	5.3		
Total %	0.9	0.1	4.7	0.4	6.1	0.1	70.8	0	0	70.9	0.8	0	0.4	0.2	1.3	0	20.1	0.4	1.1	21.6	
Cars	17	2	91	8	118	2	1363	0	0	1365	16	0	7	3	26	0	385	7	22	414	1923
% Cars	100	100	98.9	100	99.2	100	99.4	0	0	99.4	100	0	100	100	100	0	98.7	100	100	98.8	99.3
Trucks	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	14
% Trucks	0	0	1.1	0	0.8	0	0.6	0	0	0.6	0	0	0	0	0	0	1.3	0	0	1.2	0.7

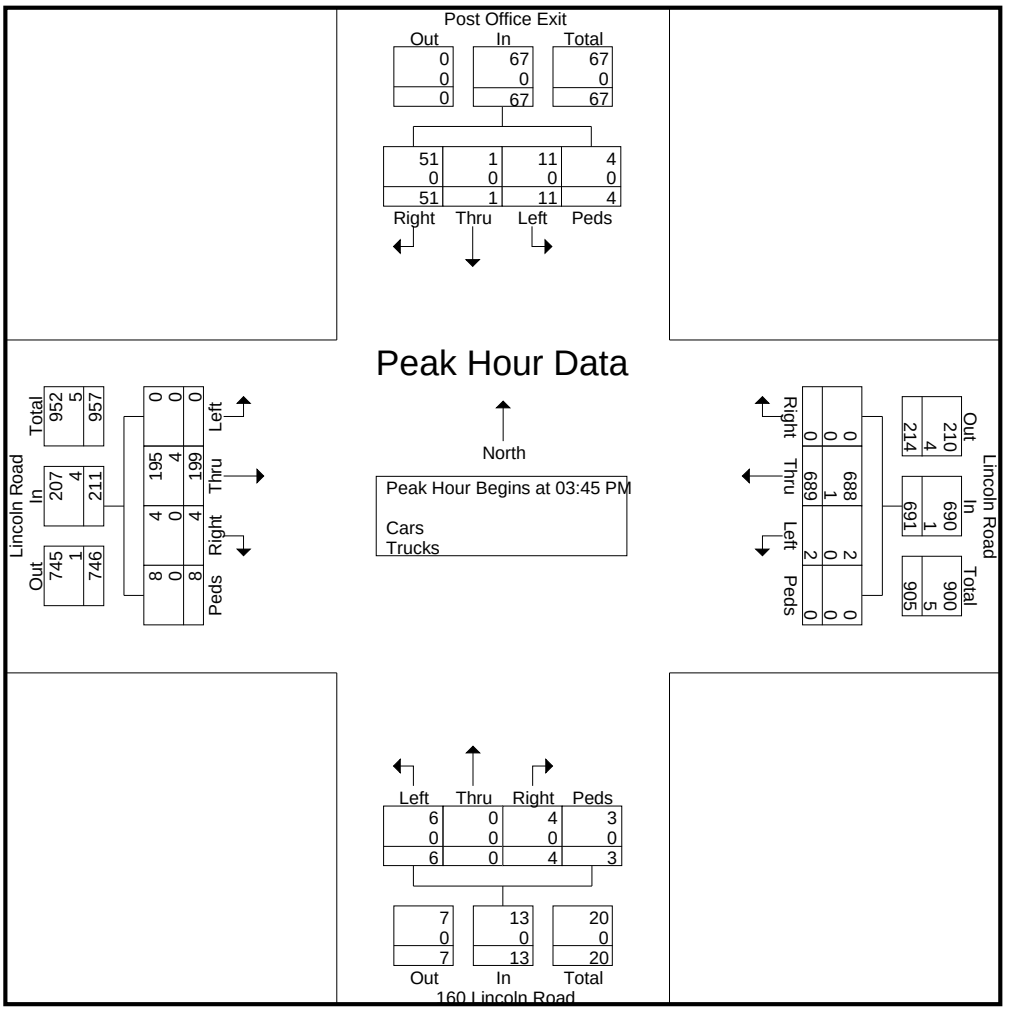
Ron Müller & Associates

Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Post Office Exit PM
Site Code : 19055
Start Date : 1/8/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Post Office Exit-160 Lincoln

	Post Office Exit From North					Lincoln Road From East					160 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	3	0	12	1	16	**1**	186	0	0	187	1	0	**2**	1	4	0	54	**2**	**4**	60	**267**
04:00 PM	**4**	0	8	**2**	14	1	**187**	0	0	**188**	1	0	1	0	2	0	45	0	1	46	250
04:15 PM	1	**1**	**18**	1	**21**	0	173	0	0	173	**2**	0	0	0	2	0	**59**	2	2	**63**	259
04:30 PM	3	0	13	0	16	0	143	0	0	143	2	0	1	**2**	**5**	0	41	0	1	42	206
Total Volume	11	1	51	4	67	2	689	0	0	691	6	0	4	3	13	0	199	4	8	211	982
% App. Total	16.4	1.5	76.1	6		0.3	99.7	0	0		46.2	0	30.8	23.1		0	94.3	1.9	3.8		
PHF	.688	.250	.708	.500	.798	.500	.921	.000	.000	.919	.750	.000	.500	.375	.650	.000	.843	.500	.500	.837	.919
Cars	11	1	51	4	67	2	688	0	0	690	6	0	4	3	13	0	195	4	8	207	977
% Cars	100	100	100	100	100	100	99.9	0	0	99.9	100	0	100	100	100	0	98.0	100	100	98.1	99.5
Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
% Trucks	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	2.0	0	0	1.9	0.5



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Codman AM
Site Code : 19055
Start Date : 1/15/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Codman Road

Groups Printed- Cars - Trucks

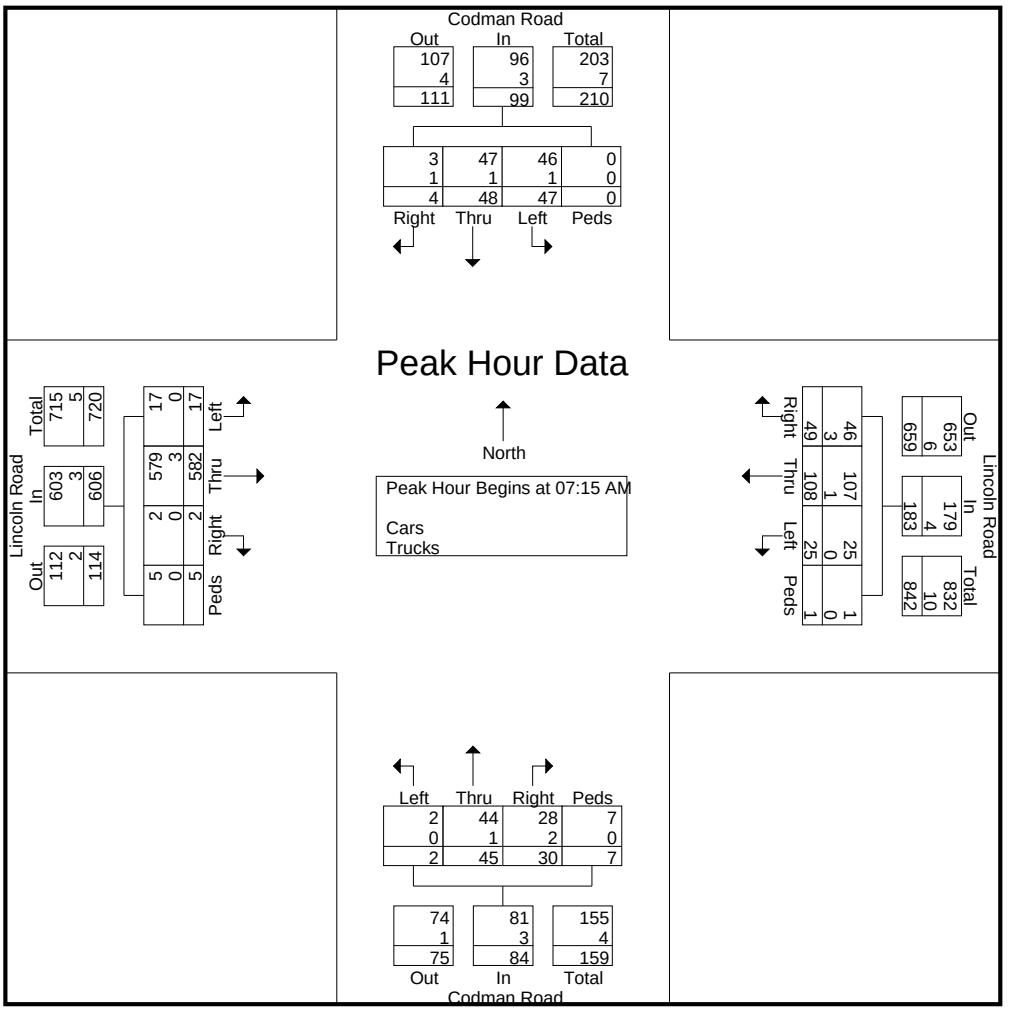
	Codman Road From North					Lincoln Road From East					Codman Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	10	1	0	14	3	13	2	0	18	1	7	2	1	11	3	160	1	1	165	208
07:15 AM	10	14	0	0	24	3	20	8	0	31	0	12	4	0	16	2	167	0	0	169	240
07:30 AM	11	8	2	0	21	5	30	10	0	45	0	9	11	3	23	2	144	0	3	149	238
07:45 AM	19	13	1	0	33	7	27	14	0	48	1	13	5	1	20	6	146	0	1	153	254
Total	43	45	4	0	92	18	90	34	0	142	2	41	22	5	70	13	617	1	5	636	940
08:00 AM	7	13	1	0	21	10	31	17	1	59	1	11	10	3	25	7	125	2	1	135	240
08:15 AM	8	21	1	0	30	7	33	14	0	54	0	13	1	0	14	3	119	1	0	123	221
08:30 AM	10	13	0	0	23	5	27	14	0	46	1	9	7	3	20	1	117	0	3	121	210
08:45 AM	6	17	0	0	23	8	26	9	0	43	1	11	12	0	24	5	89	0	0	94	184
Total	31	64	2	0	97	30	117	54	1	202	3	44	30	6	83	16	450	3	4	473	855
Grand Total	74	109	6	0	189	48	207	88	1	344	5	85	52	11	153	29	1067	4	9	1109	1795
Apprch %	39.2	57.7	3.2	0		14	60.2	25.6	0.3		3.3	55.6	34	7.2		2.6	96.2	0.4	0.8		
Total %	4.1	6.1	0.3	0	10.5	2.7	11.5	4.9	0.1	19.2	0.3	4.7	2.9	0.6	8.5	1.6	59.4	0.2	0.5	61.8	
Cars	72	107	4	0	183	47	200	85	1	333	4	83	49	11	147	28	1062	4	9	1103	1766
% Cars	97.3	98.2	66.7	0	96.8	97.9	96.6	96.6	100	96.8	80	97.6	94.2	100	96.1	96.6	99.5	100	100	99.5	98.4
Trucks	2	2	2	0	6	1	7	3	0	11	1	2	3	0	6	1	5	0	0	6	29
% Trucks	2.7	1.8	33.3	0	3.2	2.1	3.4	3.4	0	3.2	20	2.4	5.8	0	3.9	3.4	0.5	0	0	0.5	1.6

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Codman AM
Site Code : 19055
Start Date : 1/15/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Codman Road

	Codman Road From North					Lincoln Road From East					Codman Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	10	**14**	0	0	24	3	20	8	0	31	0	12	4	0	16	2	**167**	0	0	**169**	240
07:30 AM	11	8	**2**	0	21	5	30	10	0	45	0	9	**11**	**3**	23	2	144	0	**3**	149	238
07:45 AM	**19**	13	1	0	**33**	7	27	14	0	48	**1**	**13**	5	1	20	6	146	0	1	153	**254**
08:00 AM	7	13	1	0	21	**10**	**31**	**17**	**1**	**59**	1	11	10	3	**25**	**7**	125	**2**	1	135	240
Total Volume	47	48	4	0	99	25	108	49	1	183	2	45	30	7	84	17	582	2	5	606	972
% App. Total	47.5	48.5	4	0		13.7	59	26.8	0.5		2.4	53.6	35.7	8.3		2.8	96	0.3	0.8		
PHF	.618	.857	.500	.000	.750	.625	.871	.721	.250	.775	.500	.865	.682	.583	.840	.607	.871	.250	.417	.896	.957
Cars	46	47	3	0	96	25	107	46	1	179	2	44	28	7	81	17	579	2	5	603	959
% Cars	97.9	97.9	75.0	0	97.0	100	99.1	93.9	100	97.8	100	97.8	93.3	100	96.4	100	99.5	100	100	99.5	98.7
Trucks	1	1	1	0	3	0	1	3	0	4	0	1	2	0	3	0	3	0	0	3	13
% Trucks	2.1	2.1	25.0	0	3.0	0	0.9	6.1	0	2.2	0	2.2	6.7	0	3.6	0	0.5	0	0	0.5	1.3



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Codman PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Codman Road

Groups Printed- Cars - Trucks

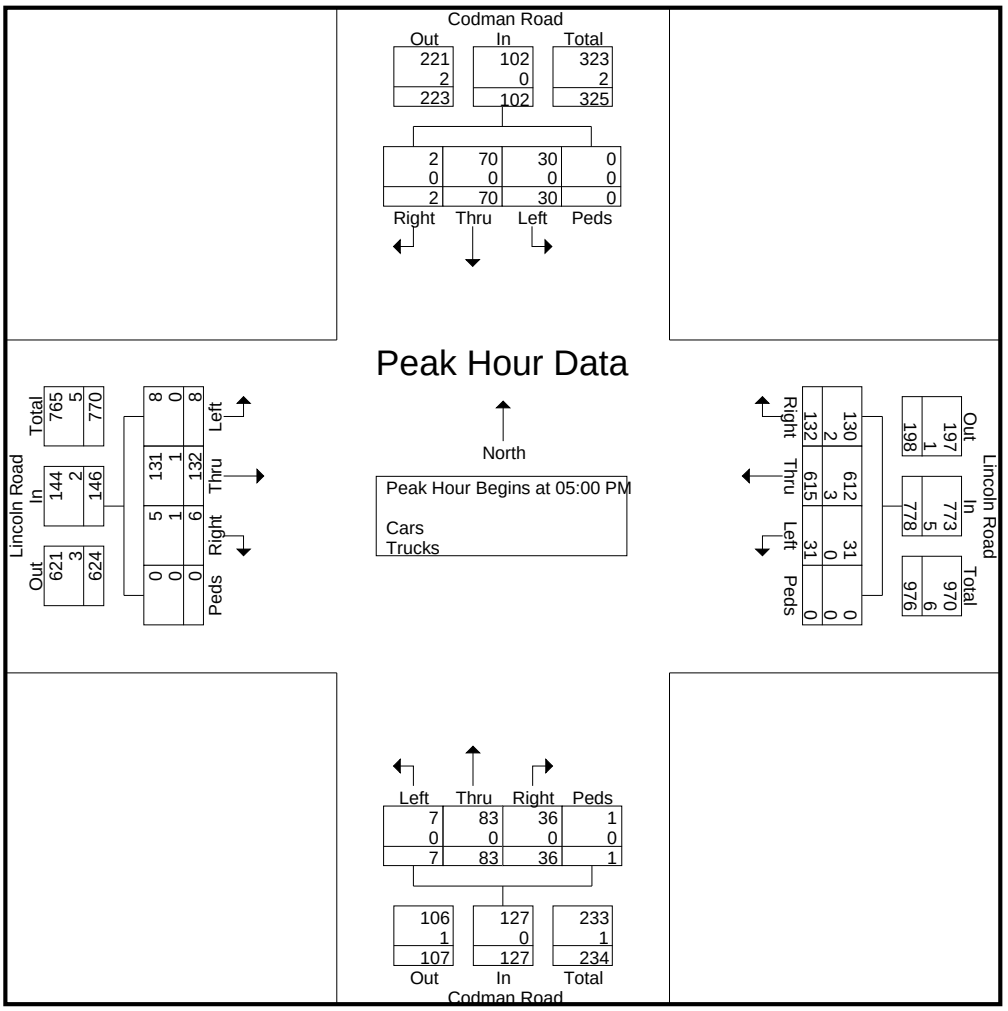
	Codman Road From North					Lincoln Road From East					Codman Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	9	11	0	0	20	6	141	23	0	170	0	25	3	4	32	2	35	0	2	39	261
04:15 PM	7	15	0	0	22	5	134	26	0	165	1	20	4	1	26	1	30	2	1	34	247
04:30 PM	7	17	1	0	25	7	145	36	0	188	1	28	7	0	36	4	32	1	0	37	286
04:45 PM	12	15	4	0	31	5	145	25	0	175	0	28	6	0	34	2	35	4	0	41	281
Total	35	58	5	0	98	23	565	110	0	698	2	101	20	5	128	9	132	7	3	151	1075
05:00 PM	7	16	1	0	24	11	125	21	0	157	0	14	9	0	23	2	34	1	0	37	241
05:15 PM	6	10	0	0	16	5	167	33	0	205	1	24	8	0	33	1	34	1	0	36	290
05:30 PM	6	28	1	0	35	4	165	26	0	195	2	21	10	0	33	2	33	2	0	37	300
05:45 PM	11	16	0	0	27	11	158	52	0	221	4	24	9	1	38	3	31	2	0	36	322
Total	30	70	2	0	102	31	615	132	0	778	7	83	36	1	127	8	132	6	0	146	1153
Grand Total	65	128	7	0	200	54	1180	242	0	1476	9	184	56	6	255	17	264	13	3	297	2228
Apprch %	32.5	64	3.5	0		3.7	79.9	16.4	0		3.5	72.2	22	2.4		5.7	88.9	4.4	1		
Total %	2.9	5.7	0.3	0	9	2.4	53	10.9	0	66.2	0.4	8.3	2.5	0.3	11.4	0.8	11.8	0.6	0.1	13.3	
Cars	65	127	7	0	199	54	1175	238	0	1467	9	184	56	6	255	15	262	12	3	292	2213
% Cars	100	99.2	100	0	99.5	100	99.6	98.3	0	99.4	100	100	100	100	100	88.2	99.2	92.3	100	98.3	99.3
Trucks	0	1	0	0	1	0	5	4	0	9	0	0	0	0	0	2	2	1	0	5	15
% Trucks	0	0.8	0	0	0.5	0	0.4	1.7	0	0.6	0	0	0	0	0	11.8	0.8	7.7	0	1.7	0.7

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Codman PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Codman Road

	Codman Road From North					Lincoln Road From East					Codman Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	7	16	**1**	0	24	**11**	125	21	0	157	0	14	9	0	23	2	**34**	1	0	**37**	241
05:15 PM	6	10	0	0	16	5	**167**	33	0	205	1	**24**	8	0	33	1	34	1	0	36	290
05:30 PM	6	**28**	1	0	**35**	4	165	26	0	195	2	21	**10**	0	33	2	33	**2**	0	37	300
05:45 PM	**11**	16	0	0	27	11	158	**52**	0	**221**	**4**	24	9	**1**	**38**	**3**	31	2	0	36	**322**
Total Volume	30	70	2	0	102	31	615	132	0	778	7	83	36	1	127	8	132	6	0	146	1153
% App. Total	29.4	68.6	2	0		4	79	17	0		5.5	65.4	28.3	0.8		5.5	90.4	4.1	0		
PHF	.682	.625	.500	.000	.729	.705	.921	.635	.000	.880	.438	.865	.900	.250	.836	.667	.971	.750	.000	.986	.895
Cars	30	70	2	0	102	31	612	130	0	773	7	83	36	1	127	8	131	5	0	144	1146
% Cars	100	100	100	0	100	100	99.5	98.5	0	99.4	100	100	100	100	100	100	99.2	83.3	0	98.6	99.4
Trucks	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	0	1	1	0	2	7
% Trucks	0	0	0	0	0	0	0.5	1.5	0	0.6	0	0	0	0	0	0	0.8	16.7	0	1.4	0.6



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lewis AM
Site Code : 19055
Start Date : 1/7/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Mobil Station-Lewis St.

Groups Printed- Cars - Trucks

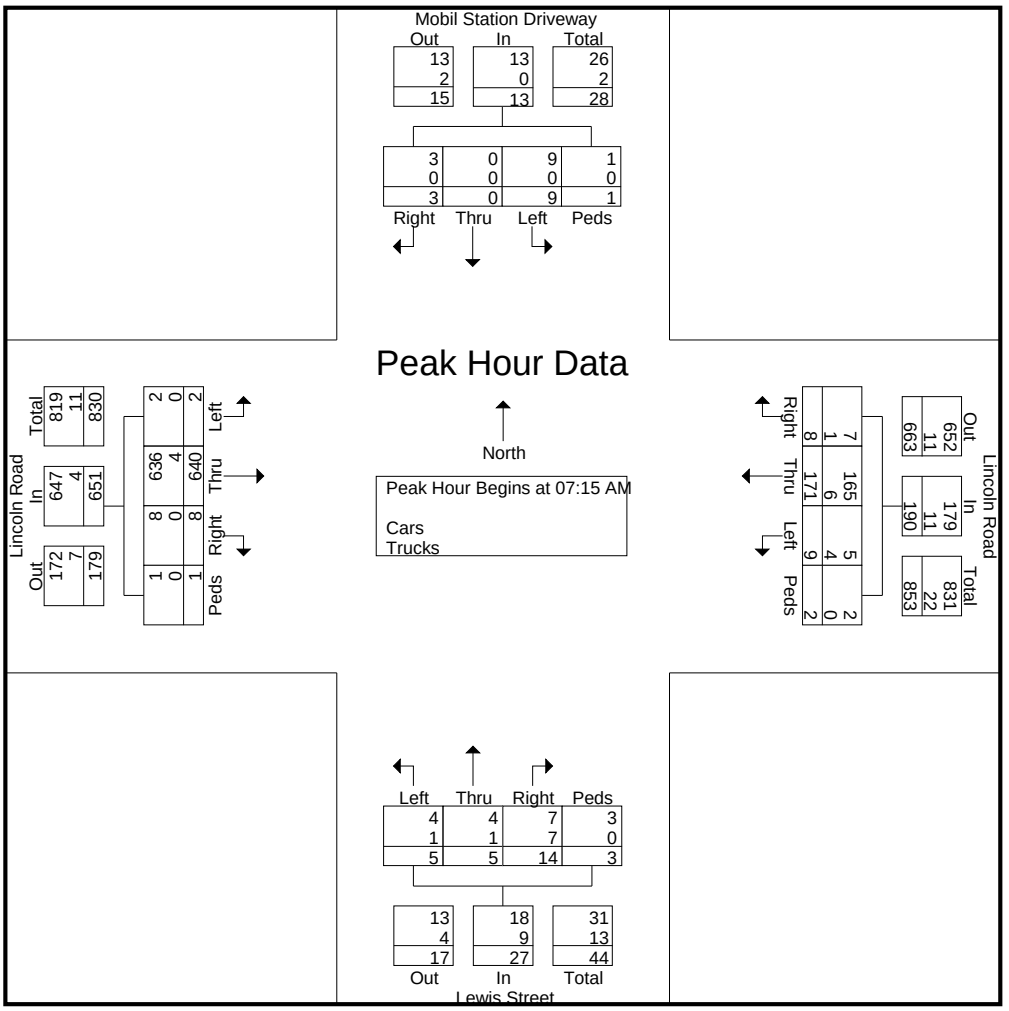
	Mobil Station Driveway From North					Lincoln Road From East					Lewis Street From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	6	0	0	0	6	2	16	1	0	19	1	1	4	0	6	1	168	0	0	169	200
07:15 AM	4	0	0	1	5	2	34	0	0	36	4	0	4	0	8	0	196	2	0	198	247
07:30 AM	1	0	1	0	2	1	46	0	0	47	1	0	3	1	5	2	164	2	0	168	222
07:45 AM	2	0	1	0	3	5	43	3	0	51	0	0	0	1	1	0	141	1	0	142	197
Total	13	0	2	1	16	10	139	4	0	153	6	1	11	2	20	3	669	5	0	677	866
08:00 AM	2	0	1	0	3	1	48	5	2	56	0	5	7	1	13	0	139	3	1	143	215
08:15 AM	2	0	1	0	3	1	57	2	2	62	2	0	0	1	3	0	113	0	0	113	181
08:30 AM	1	0	0	0	1	0	42	4	1	47	0	0	1	0	1	1	113	1	0	115	164
08:45 AM	3	1	0	0	4	1	32	0	0	33	2	2	1	1	6	1	148	2	0	151	194
Total	8	1	2	0	11	3	179	11	5	198	4	7	9	3	23	2	513	6	1	522	754
Grand Total	21	1	4	1	27	13	318	15	5	351	10	8	20	5	43	5	1182	11	1	1199	1620
Apprch %	77.8	3.7	14.8	3.7		3.7	90.6	4.3	1.4		23.3	18.6	46.5	11.6		0.4	98.6	0.9	0.1		
Total %	1.3	0.1	0.2	0.1	1.7	0.8	19.6	0.9	0.3	21.7	0.6	0.5	1.2	0.3	2.7	0.3	73	0.7	0.1	74	
Cars	18	0	4	1	23	9	308	14	5	336	9	6	11	5	31	5	1173	11	1	1190	1580
% Cars	85.7	0	100	100	85.2	69.2	96.9	93.3	100	95.7	90	75	55	100	72.1	100	99.2	100	100	99.2	97.5
Trucks	3	1	0	0	4	4	10	1	0	15	1	2	9	0	12	0	9	0	0	9	40
% Trucks	14.3	100	0	0	14.8	30.8	3.1	6.7	0	4.3	10	25	45	0	27.9	0	0.8	0	0	0.8	2.5

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lewis AM
Site Code : 19055
Start Date : 1/7/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Mobil Station-Lewis St.

	Mobil Station Driveway From North					Lincoln Road From East					Lewis Street From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**4**	0	0	**1**	**5**	2	34	0	0	36	**4**	0	4	0	8	0	**196**	2	0	**198**	**247**
07:30 AM	1	0	**1**	0	2	1	46	0	0	47	1	0	3	**1**	5	**2**	164	2	0	168	222
07:45 AM	2	0	1	0	3	**5**	43	3	0	51	0	0	0	1	1	0	141	1	0	142	197
08:00 AM	2	0	1	0	3	1	**48**	**5**	**2**	**56**	0	**5**	**7**	1	**13**	0	139	**3**	**1**	143	215
Total Volume	9	0	3	1	13	9	171	8	2	190	5	5	14	3	27	2	640	8	1	651	881
% App. Total	69.2	0	23.1	7.7		4.7	90	4.2	1.1		18.5	18.5	51.9	11.1		0.3	98.3	1.2	0.2		
PHF	.563	.000	.750	.250	.650	.450	.891	.400	.250	.848	.313	.250	.500	.750	.519	.250	.816	.667	.250	.822	.892
Cars	9	0	3	1	13	5	165	7	2	179	4	4	7	3	18	2	636	8	1	647	857
% Cars	100	0	100	100	100	55.6	96.5	87.5	100	94.2	80.0	80.0	50.0	100	66.7	100	99.4	100	100	99.4	97.3
Trucks	0	0	0	0	0	4	6	1	0	11	1	1	7	0	9	0	4	0	0	4	24
% Trucks	0	0	0	0	0	44.4	3.5	12.5	0	5.8	20.0	20.0	50.0	0	33.3	0	0.6	0	0	0.6	2.7



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lewis PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Mobil Station-Lewis St.

Groups Printed- Cars - Trucks

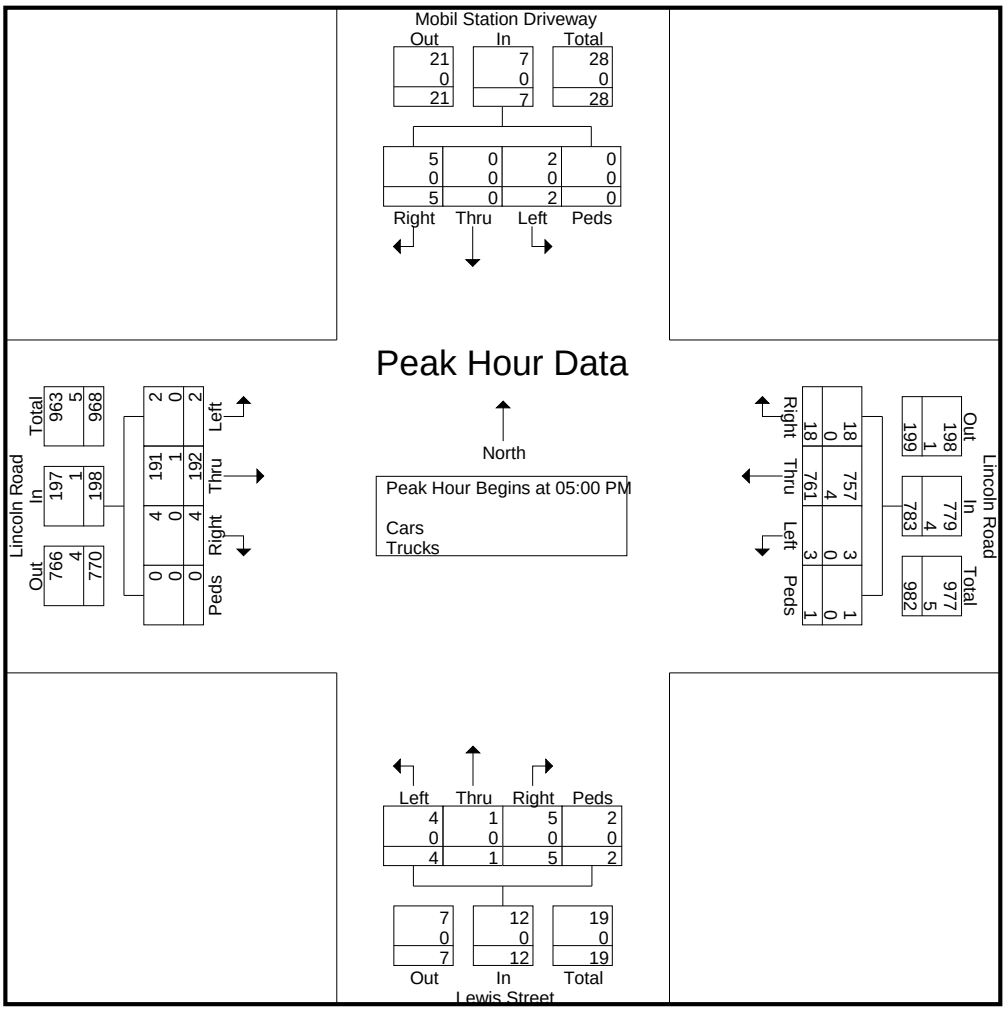
	Mobil Station Driveway From North					Lincoln Road From East					Lewis Street From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	3	0	1	0	4	2	152	8	0	162	5	1	2	6	14	1	43	1	0	45	225
04:15 PM	3	0	1	0	4	0	165	5	2	172	1	0	3	0	4	0	46	0	0	46	226
04:30 PM	1	0	0	0	1	1	184	5	0	190	2	0	1	0	3	1	49	0	0	50	244
04:45 PM	2	0	1	0	3	1	163	7	0	171	0	0	0	0	0	0	52	1	0	53	227
Total	9	0	3	0	12	4	664	25	2	695	8	1	6	6	21	2	190	2	0	194	922
05:00 PM	1	0	3	0	4	1	160	4	1	166	0	0	1	1	2	1	50	0	0	51	223
05:15 PM	1	0	0	0	1	0	196	2	0	198	1	0	2	0	3	0	45	0	0	45	247
05:30 PM	0	0	2	0	2	1	189	5	0	195	1	0	0	0	1	1	47	2	0	50	248
05:45 PM	0	0	0	0	0	1	216	7	0	224	2	1	2	1	6	0	50	2	0	52	282
Total	2	0	5	0	7	3	761	18	1	783	4	1	5	2	12	2	192	4	0	198	1000
Grand Total	11	0	8	0	19	7	1425	43	3	1478	12	2	11	8	33	4	382	6	0	392	1922
Apprch %	57.9	0	42.1	0		0.5	96.4	2.9	0.2		36.4	6.1	33.3	24.2		1	97.4	1.5	0		
Total %	0.6	0	0.4	0	1	0.4	74.1	2.2	0.2	76.9	0.6	0.1	0.6	0.4	1.7	0.2	19.9	0.3	0	20.4	
Cars	11	0	8	0	19	7	1419	43	3	1472	12	2	11	8	33	4	381	6	0	391	1915
% Cars	100	0	100	0	100	100	99.6	100	100	99.6	100	100	100	100	100	100	99.7	100	0	99.7	99.6
Trucks	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	7
% Trucks	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0	0.3	0	0	0.3	0.4

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lewis PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Mobil Station-Lewis St.

	Mobil Station Driveway From North					Lincoln Road From East					Lewis Street From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**1**	0	**3**	0	**4**	**1**	160	4	**1**	166	0	0	1	**1**	2	**1**	**50**	0	0	51	223
05:15 PM	1	0	0	0	1	0	196	2	0	198	1	0	**2**	0	3	0	45	0	0	45	247
05:30 PM	0	0	2	0	2	1	189	5	0	195	1	0	0	0	1	1	47	**2**	0	50	248
05:45 PM	0	0	0	0	0	1	**216**	**7**	0	**224**	**2**	**1**	2	1	**6**	0	50	2	0	**52**	**282**
Total Volume	2	0	5	0	7	3	761	18	1	783	4	1	5	2	12	2	192	4	0	198	1000
% App. Total	28.6	0	71.4	0		0.4	97.2	2.3	0.1		33.3	8.3	41.7	16.7		1	97	2	0		
PHF	.500	.000	.417	.000	.438	.750	.881	.643	.250	.874	.500	.250	.625	.500	.500	.500	.960	.500	.000	.952	.887
Cars	2	0	5	0	7	3	757	18	1	779	4	1	5	2	12	2	191	4	0	197	995
% Cars	100	0	100	0	100	100	99.5	100	100	99.5	100	100	100	100	100	100	99.5	100	0	99.5	99.5
Trucks	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
% Trucks	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.5	0	0	0.5	0.5



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Ridge AM
Site Code : 19055
Start Date : 1/14/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Ridge Road

Groups Printed- Cars - Trucks

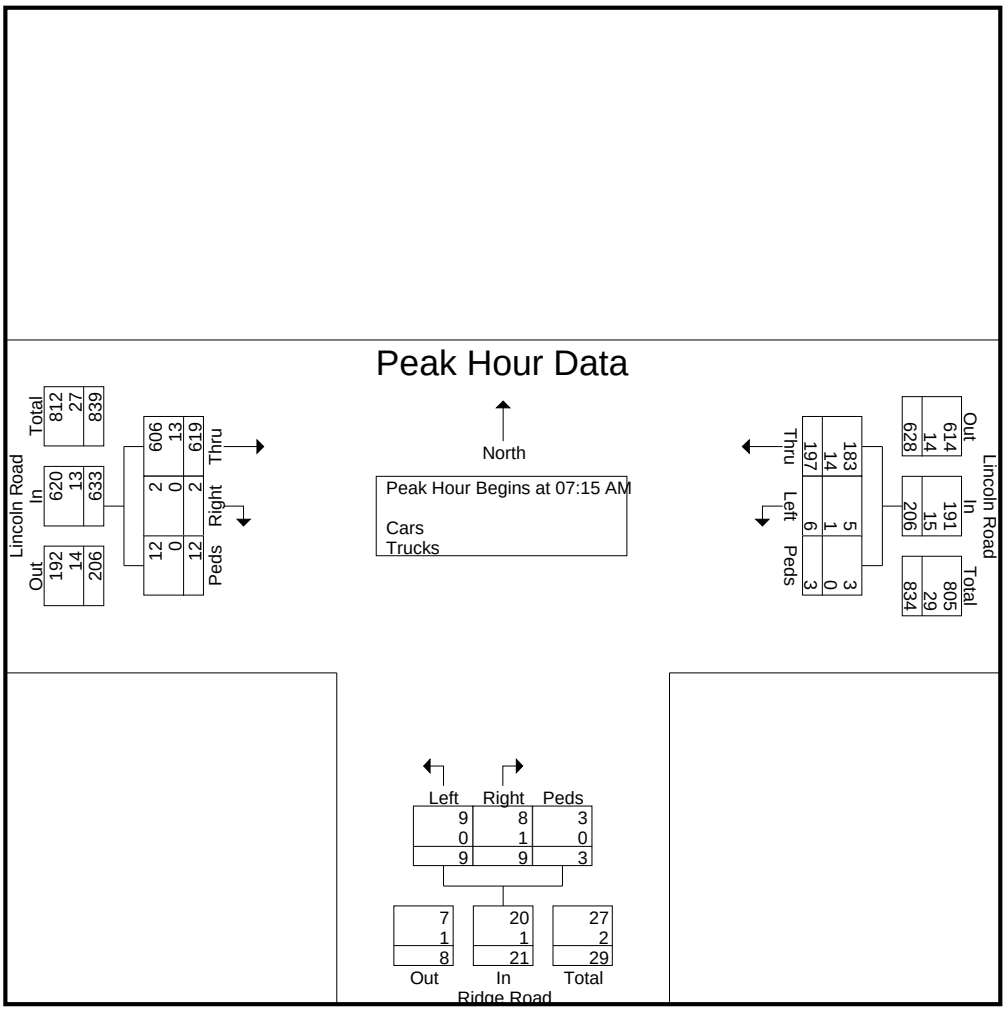
	Lincoln Road From East				Ridge Road From South				Lincoln Road From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	17	1	19	2	2	0	4	189	0	4	193	216
07:15 AM	0	34	0	34	0	1	0	1	167	1	2	170	205
07:30 AM	2	45	2	49	4	0	0	4	155	0	4	159	212
07:45 AM	1	50	1	52	1	6	2	9	144	1	0	145	206
Total	4	146	4	154	7	9	2	18	655	2	10	667	839
08:00 AM	3	68	0	71	4	2	1	7	153	0	6	159	237
08:15 AM	1	48	0	49	2	0	0	2	131	0	4	135	186
08:30 AM	1	39	0	40	0	2	0	2	124	0	1	125	167
08:45 AM	1	26	0	27	0	4	0	4	111	1	1	113	144
Total	6	181	0	187	6	8	1	15	519	1	12	532	734
Grand Total	10	327	4	341	13	17	3	33	1174	3	22	1199	1573
Apprch %	2.9	95.9	1.2		39.4	51.5	9.1		97.9	0.3	1.8		
Total %	0.6	20.8	0.3	21.7	0.8	1.1	0.2	2.1	74.6	0.2	1.4	76.2	
Cars	9	306	4	319	13	16	3	32	1144	3	22	1169	1520
% Cars	90	93.6	100	93.5	100	94.1	100	97	97.4	100	100	97.5	96.6
Trucks	1	21	0	22	0	1	0	1	30	0	0	30	53
% Trucks	10	6.4	0	6.5	0	5.9	0	3	2.6	0	0	2.5	3.4

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Ridge AM
Site Code : 19055
Start Date : 1/14/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Ridge Road

	Lincoln Road From East				Ridge Road From South				Lincoln Road From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	34	0	34	0	1	0	1	**167**	**1**	2	**170**	205
07:30 AM	2	45	**2**	49	**4**	0	0	4	155	0	4	159	212
07:45 AM	1	50	1	52	1	**6**	**2**	**9**	144	1	0	145	206
08:00 AM	**3**	**68**	0	**71**	4	2	1	7	153	0	**6**	159	**237**
Total Volume	6	197	3	206	9	9	3	21	619	2	12	633	860
% App. Total	2.9	95.6	1.5		42.9	42.9	14.3		97.8	0.3	1.9		
PHF	.500	.724	.375	.725	.563	.375	.375	.583	.927	.500	.500	.931	.907
Cars	5	183	3	191	9	8	3	20	606	2	12	620	831
% Cars	83.3	92.9	100	92.7	100	88.9	100	95.2	97.9	100	100	97.9	96.6
Trucks	1	14	0	15	0	1	0	1	13	0	0	13	29
% Trucks	16.7	7.1	0	7.3	0	11.1	0	4.8	2.1	0	0	2.1	3.4



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Ridge PM
Site Code : 19055
Start Date : 1/14/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Ridge Road

Groups Printed- Cars - Trucks

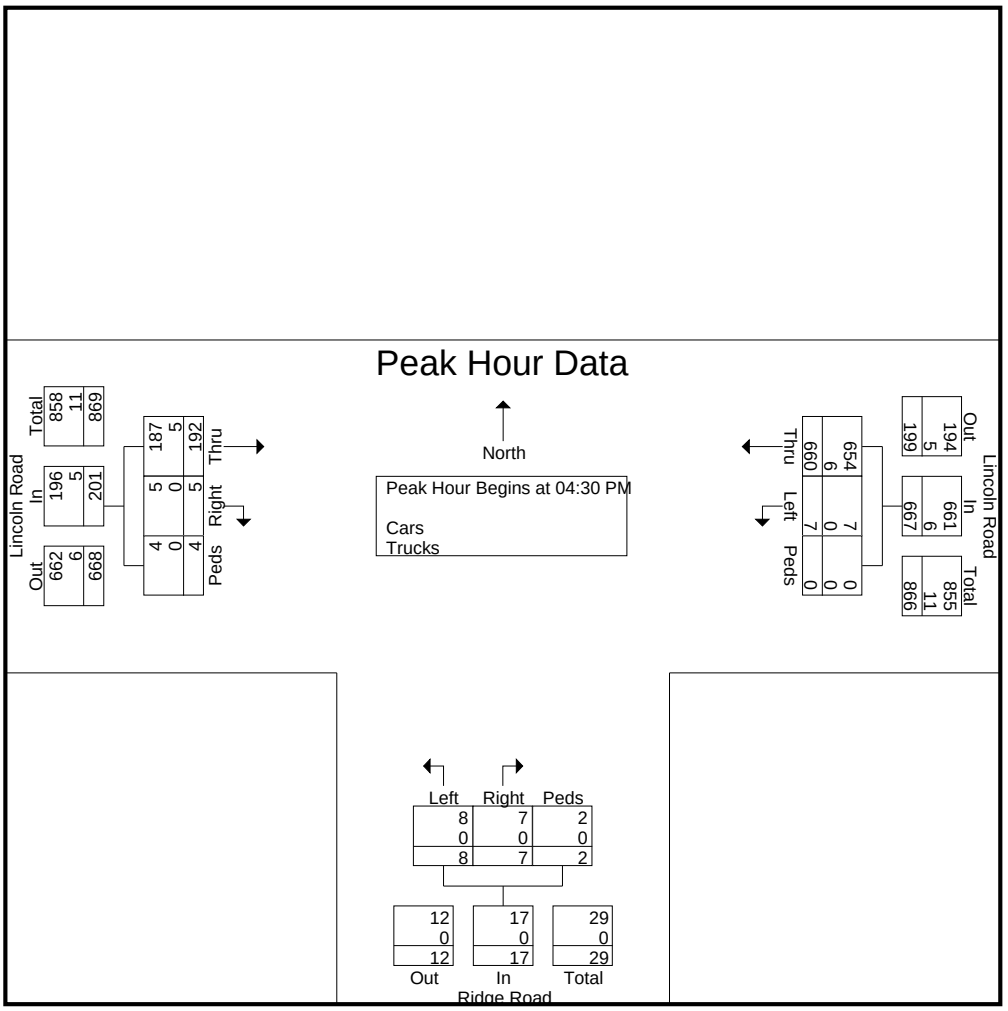
	Lincoln Road From East				Ridge Road From South				Lincoln Road From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	127	0	127	1	4	0	5	73	1	2	76	208
04:15 PM	2	156	0	158	0	3	0	3	43	2	1	46	207
04:30 PM	3	169	0	172	3	0	0	3	43	0	1	44	219
04:45 PM	0	153	0	153	0	5	1	6	48	3	2	53	212
Total	5	605	0	610	4	12	1	17	207	6	6	219	846
05:00 PM	2	182	0	184	1	1	0	2	48	2	1	51	237
05:15 PM	2	156	0	158	4	1	1	6	53	0	0	53	217
05:30 PM	2	153	0	155	1	0	0	1	45	0	0	45	201
05:45 PM	0	138	0	138	2	3	0	5	40	2	4	46	189
Total	6	629	0	635	8	5	1	14	186	4	5	195	844
Grand Total	11	1234	0	1245	12	17	2	31	393	10	11	414	1690
Apprch %	0.9	99.1	0		38.7	54.8	6.5		94.9	2.4	2.7		
Total %	0.7	73	0	73.7	0.7	1	0.1	1.8	23.3	0.6	0.7	24.5	
Cars	11	1225	0	1236	12	17	2	31	387	10	11	408	1675
% Cars	100	99.3	0	99.3	100	100	100	100	98.5	100	100	98.6	99.1
Trucks	0	9	0	9	0	0	0	0	6	0	0	6	15
% Trucks	0	0.7	0	0.7	0	0	0	0	1.5	0	0	1.4	0.9

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Ridge PM
Site Code : 19055
Start Date : 1/14/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Ridge Road

	Lincoln Road From East				Ridge Road From South				Lincoln Road From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**3**	169	0	172	3	0	0	3	43	0	1	44	219
04:45 PM	0	153	0	153	0	**5**	**1**	**6**	48	**3**	**2**	**53**	212
05:00 PM	2	**182**	0	**184**	1	1	0	2	48	2	1	51	**237**
05:15 PM	2	156	0	158	**4**	1	1	6	**53**	0	0	53	217
Total Volume	7	660	0	667	8	7	2	17	192	5	4	201	885
% App. Total	1	99	0		47.1	41.2	11.8		95.5	2.5	2		
PHF	.583	.907	.000	.906	.500	.350	.500	.708	.906	.417	.500	.948	.934
Cars	7	654	0	661	8	7	2	17	187	5	4	196	874
% Cars	100	99.1	0	99.1	100	100	100	100	97.4	100	100	97.5	98.8
Trucks	0	6	0	6	0	0	0	0	5	0	0	5	11
% Trucks	0	0.9	0	0.9	0	0	0	0	2.6	0	0	2.5	1.2



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lincoln Station Dvwy AM
Site Code : 19055
Start Date : 1/8/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Lincoln Station-152 Lincoln

Groups Printed- Cars - Trucks

	Lincoln Station Driveway From North					Lincoln Road From East					153 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	0	2	0	5	0	19	6	0	25	0	0	0	2	2	7	162	0	0	169	201
07:15 AM	5	0	2	0	7	0	33	4	0	37	0	0	0	0	0	32	148	0	0	180	224
07:30 AM	5	0	4	2	11	0	40	5	1	46	0	0	0	0	0	28	132	0	0	160	217
07:45 AM	7	0	5	2	14	0	49	4	0	53	0	0	0	0	0	18	127	0	0	145	212
Total	20	0	13	4	37	0	141	19	1	161	0	0	0	2	2	85	569	0	0	654	854
08:00 AM	4	0	4	1	9	0	70	9	0	79	0	0	0	1	1	22	112	0	0	134	223
08:15 AM	9	0	6	2	17	0	40	6	0	46	0	0	0	0	0	13	114	1	0	128	191
08:30 AM	7	0	4	0	11	0	25	2	0	27	1	0	0	0	1	8	98	1	0	107	146
08:45 AM	7	0	9	0	16	0	29	3	0	32	0	0	0	0	0	18	107	0	0	125	173
Total	27	0	23	3	53	0	164	20	0	184	1	0	0	1	2	61	431	2	0	494	733
Grand Total	47	0	36	7	90	0	305	39	1	345	1	0	0	3	4	146	1000	2	0	1148	1587
Apprch %	52.2	0	40	7.8		0	88.4	11.3	0.3		25	0	0	75		12.7	87.1	0.2	0		
Total %	3	0	2.3	0.4	5.7	0	19.2	2.5	0.1	21.7	0.1	0	0	0.2	0.3	9.2	63	0.1	0	72.3	
Cars	43	0	31	7	81	0	291	38	1	330	1	0	0	3	4	139	985	2	0	1126	1541
% Cars	91.5	0	86.1	100	90	0	95.4	97.4	100	95.7	100	0	0	100	100	95.2	98.5	100	0	98.1	97.1
Trucks	4	0	5	0	9	0	14	1	0	15	0	0	0	0	0	7	15	0	0	22	46
% Trucks	8.5	0	13.9	0	10	0	4.6	2.6	0	4.3	0	0	0	0	0	4.8	1.5	0	0	1.9	2.9

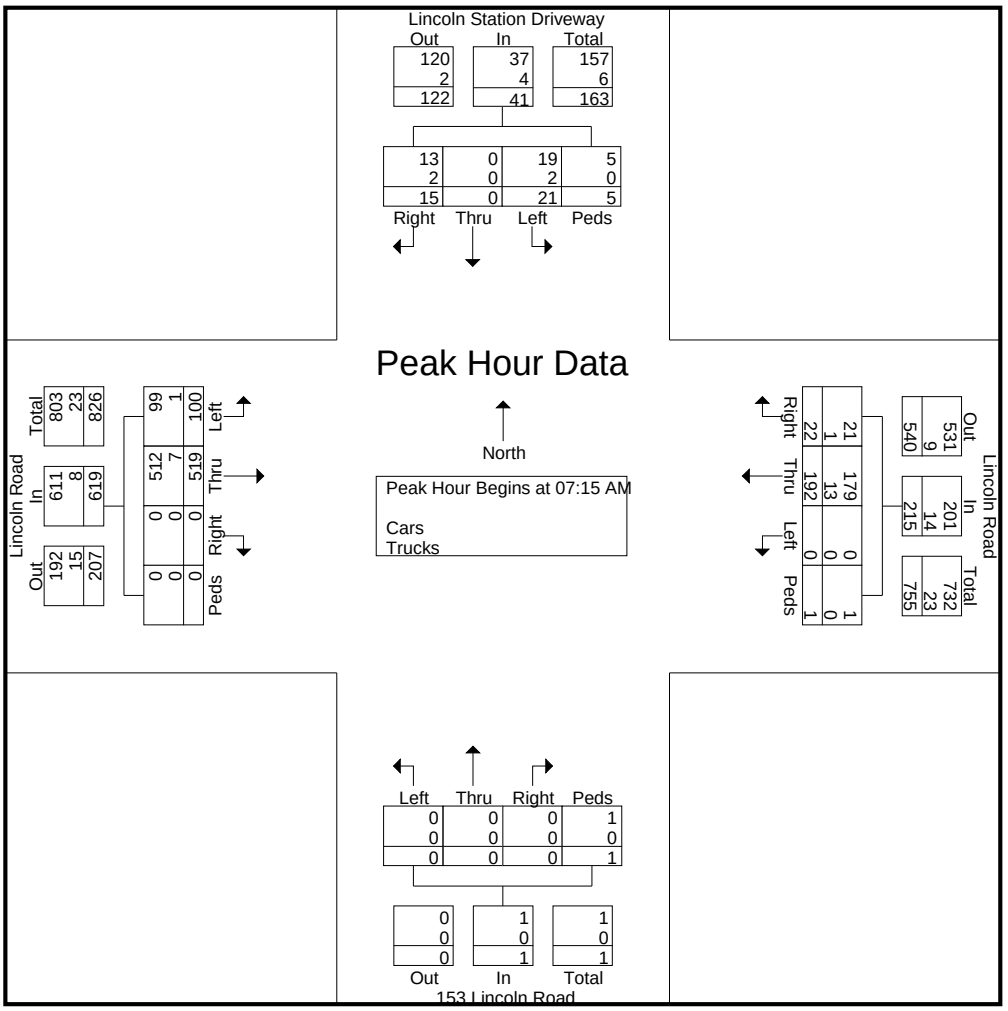
Ron Müller & Associates

Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lincoln Station Dvwy AM
Site Code : 19055
Start Date : 1/8/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Lincoln Station-152 Lincoln

	Lincoln Station Driveway From North					Lincoln Road From East					153 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	5	0	2	0	7	0	33	4	0	37	0	0	0	0	0	**32**	**148**	0	0	**180**	**224**
07:30 AM	5	0	4	**2**	11	0	40	5	**1**	46	0	0	0	0	0	28	132	0	0	160	217
07:45 AM	**7**	0	**5**	2	**14**	0	49	4	0	53	0	0	0	0	0	18	127	0	0	145	212
08:00 AM	4	0	4	1	9	0	**70**	**9**	0	**79**	0	0	0	**1**	**1**	22	112	0	0	134	223
Total Volume	21	0	15	5	41	0	192	22	1	215	0	0	0	1	1	100	519	0	0	619	876
% App. Total	51.2	0	36.6	12.2		0	89.3	10.2	0.5		0	0	0	100		16.2	83.8	0	0		
PHF	.750	.000	.750	.625	.732	.000	.686	.611	.250	.680	.000	.000	.000	.250	.250	.781	.877	.000	.000	.860	.978
Cars	19	0	13	5	37	0	179	21	1	201	0	0	0	1	1	99	512	0	0	611	850
% Cars	90.5	0	86.7	100	90.2	0	93.2	95.5	100	93.5	0	0	0	100	100	99.0	98.7	0	0	98.7	97.0
Trucks	2	0	2	0	4	0	13	1	0	14	0	0	0	0	0	1	7	0	0	8	26
% Trucks	9.5	0	13.3	0	9.8	0	6.8	4.5	0	6.5	0	0	0	0	0	1.0	1.3	0	0	1.3	3.0



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lincoln Station Dvwy PM
Site Code : 19055
Start Date : 1/7/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Lincoln Station-152 Lincoln

Groups Printed- Cars - Trucks

	Lincoln Station Driveway From North					Lincoln Road From East					152 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	12	1	11	1	25	0	129	12	0	141	1	0	0	0	1	22	56	0	1	79	246
04:15 PM	8	0	11	0	19	2	155	12	0	169	0	0	1	0	1	21	39	0	0	60	249
04:30 PM	13	0	9	1	23	1	136	11	3	151	0	0	0	0	0	13	39	0	0	52	226
04:45 PM	8	0	9	0	17	0	139	15	3	157	0	0	0	0	0	11	36	0	0	47	221
Total	41	1	40	2	84	3	559	50	6	618	1	0	1	0	2	67	170	0	1	238	942
05:00 PM	6	0	10	0	16	0	134	9	0	143	0	0	2	1	3	13	39	0	1	53	215
05:15 PM	4	0	8	1	13	0	177	14	0	191	0	0	1	0	1	7	33	0	0	40	245
05:30 PM	4	0	9	0	13	2	140	12	0	154	0	0	0	0	0	16	32	1	0	49	216
05:45 PM	12	0	17	0	29	1	137	14	1	153	1	0	1	0	2	23	46	0	0	69	253
Total	26	0	44	1	71	3	588	49	1	641	1	0	4	1	6	59	150	1	1	211	929
Grand Total	67	1	84	3	155	6	1147	99	7	1259	2	0	5	1	8	126	320	1	2	449	1871
Apprch %	43.2	0.6	54.2	1.9		0.5	91.1	7.9	0.6		25	0	62.5	12.5		28.1	71.3	0.2	0.4		
Total %	3.6	0.1	4.5	0.2	8.3	0.3	61.3	5.3	0.4	67.3	0.1	0	0.3	0.1	0.4	6.7	17.1	0.1	0.1	24	
Cars	67	1	83	3	154	6	1137	99	7	1249	2	0	5	1	8	124	314	1	2	441	1852
% Cars	100	100	98.8	100	99.4	100	99.1	100	100	99.2	100	0	100	100	100	98.4	98.1	100	100	98.2	99
Trucks	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	2	6	0	0	8	19
% Trucks	0	0	1.2	0	0.6	0	0.9	0	0	0.8	0	0	0	0	0	1.6	1.9	0	0	1.8	1

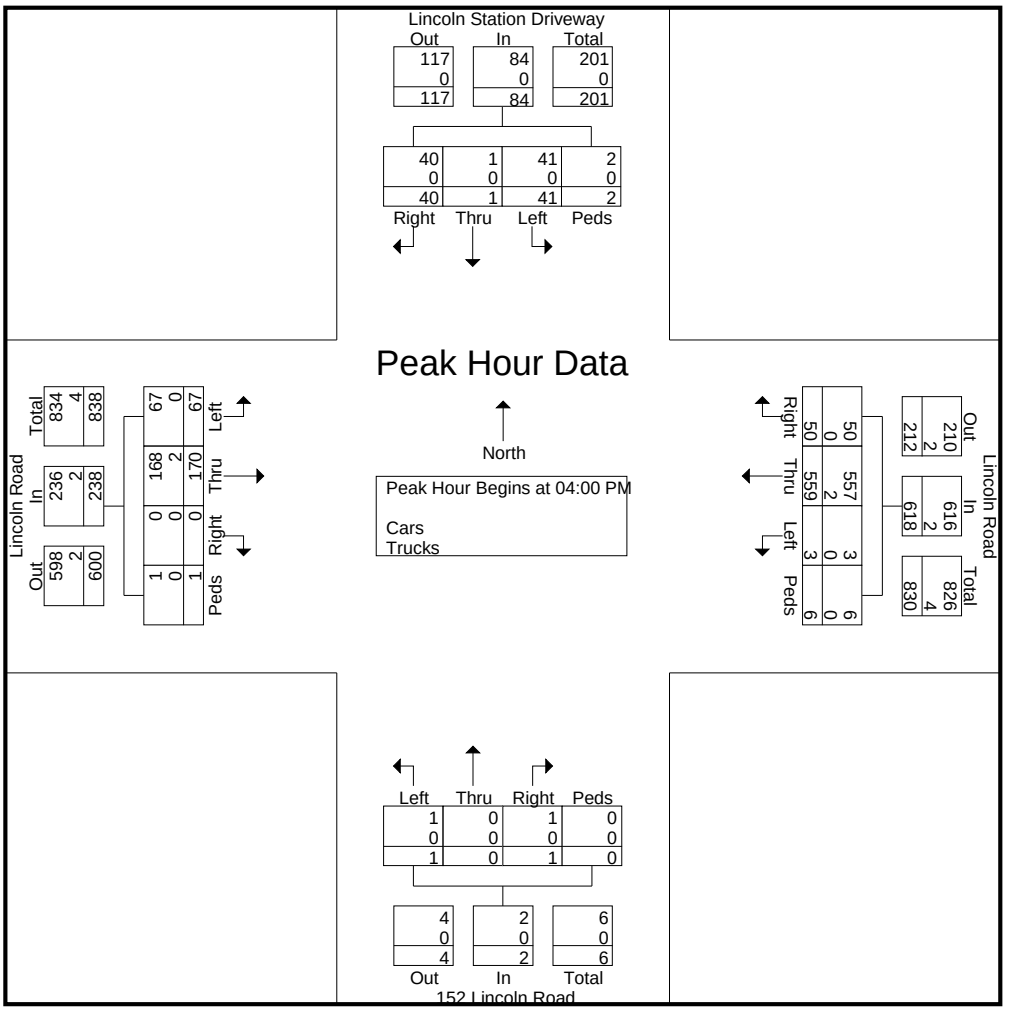
Ron Müller & Associates

Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Lincoln Station Dvwy PM
Site Code : 19055
Start Date : 1/7/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Lincoln Station-152 Lincoln

	Lincoln Station Driveway From North					Lincoln Road From East					152 Lincoln Road From South					Lincoln Road From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	12	**1**	**11**	**1**	**25**	0	129	12	0	141	**1**	0	0	0	**1**	**22**	**56**	0	**1**	**79**	246
04:15 PM	8	0	11	0	19	**2**	**155**	12	0	**169**	0	0	**1**	0	1	21	39	0	0	60	**249**
04:30 PM	**13**	0	9	1	23	1	136	11	**3**	151	0	0	0	0	0	13	39	0	0	52	226
04:45 PM	8	0	9	0	17	0	139	**15**	3	157	0	0	0	0	0	11	36	0	0	47	221
Total Volume	41	1	40	2	84	3	559	50	6	618	1	0	1	0	2	67	170	0	1	238	942
% App. Total	48.8	1.2	47.6	2.4		0.5	90.5	8.1	1		50	0	50	0		28.2	71.4	0	0.4		
PHF	.788	.250	.909	.500	.840	.375	.902	.833	.500	.914	.250	.000	.250	.000	.500	.761	.759	.000	.250	.753	.946
Cars	41	1	40	2	84	3	557	50	6	616	1	0	1	0	2	67	168	0	1	236	938
% Cars	100	100	100	100	100	100	99.6	100	100	99.7	100	0	100	0	100	100	98.8	0	100	99.2	99.6
Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% Trucks	0	0	0	0	0	0	0.4	0	0	0.3	0	0	0	0	0	0	1.2	0	0	0.8	0.4



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Wells AM
Site Code : 19055
Start Date : 1/7/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Wells Road

Groups Printed- Cars - Trucks

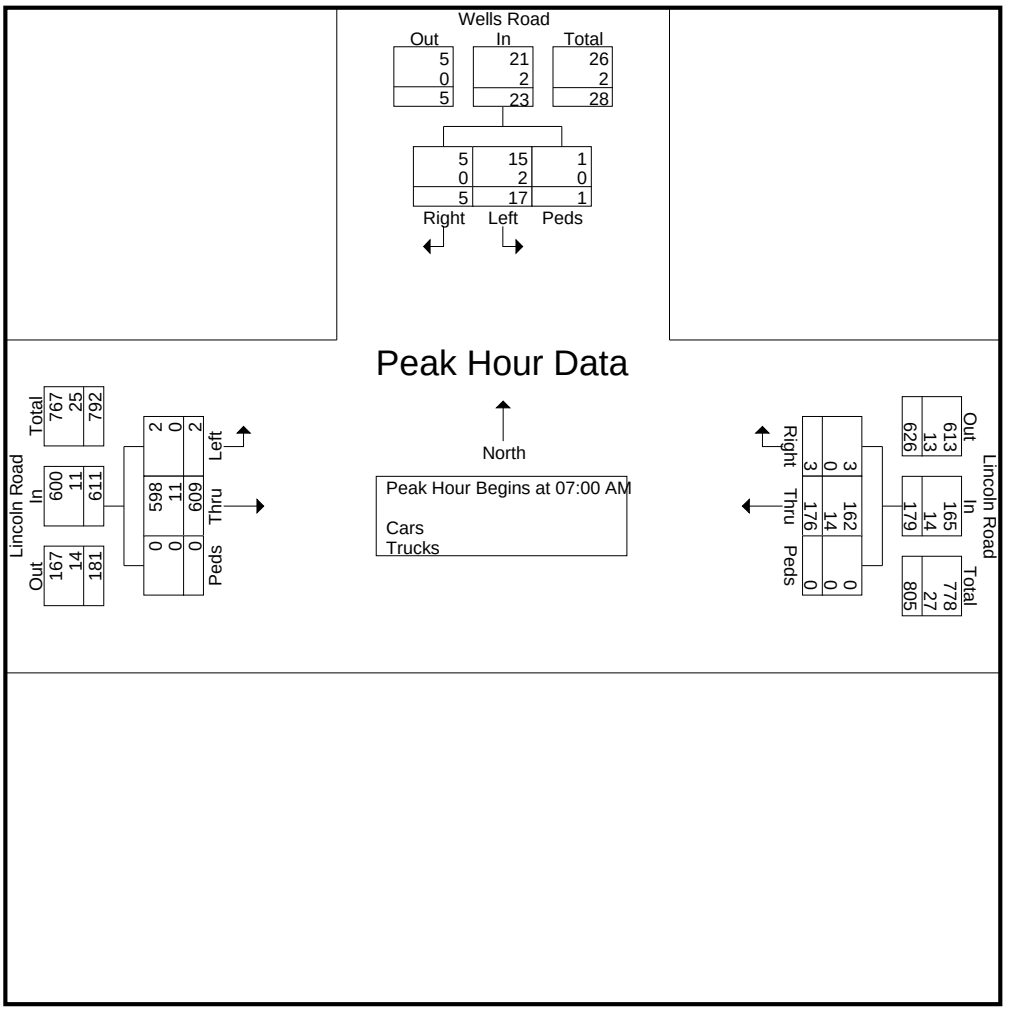
	Wells Road From North				Lincoln Road From East				Lincoln Road From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	3	1	0	4	18	0	0	18	0	164	0	164	186
07:15 AM	1	1	1	3	45	0	0	45	2	159	0	161	209
07:30 AM	4	2	0	6	54	1	0	55	0	152	0	152	213
07:45 AM	9	1	0	10	59	2	0	61	0	134	0	134	205
Total	17	5	1	23	176	3	0	179	2	609	0	611	813
08:00 AM	3	2	1	6	66	6	0	72	2	100	0	102	180
08:15 AM	2	3	0	5	41	3	0	44	0	119	0	119	168
08:30 AM	2	3	0	5	32	0	0	32	1	104	0	105	142
08:45 AM	1	2	0	3	29	0	0	29	1	140	0	141	173
Total	8	10	1	19	168	9	0	177	4	463	0	467	663
Grand Total	25	15	2	42	344	12	0	356	6	1072	0	1078	1476
Apprch %	59.5	35.7	4.8		96.6	3.4	0		0.6	99.4	0		
Total %	1.7	1	0.1	2.8	23.3	0.8	0	24.1	0.4	72.6	0	73	
Cars	23	15	2	40	325	12	0	337	6	1058	0	1064	1441
% Cars	92	100	100	95.2	94.5	100	0	94.7	100	98.7	0	98.7	97.6
Trucks	2	0	0	2	19	0	0	19	0	14	0	14	35
% Trucks	8	0	0	4.8	5.5	0	0	5.3	0	1.3	0	1.3	2.4

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Wells AM
Site Code : 19055
Start Date : 1/7/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Wells Road

	Wells Road From North				Lincoln Road From East				Lincoln Road From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	3	1	0	4	18	0	0	18	0	**164**	0	**164**	186
07:15 AM	1	1	**1**	3	45	0	0	45	**2**	159	0	161	209
07:30 AM	4	**2**	0	6	54	1	0	55	0	152	0	152	**213**
07:45 AM	**9**	1	0	**10**	**59**	**2**	0	**61**	0	134	0	134	205
Total Volume	17	5	1	23	176	3	0	179	2	609	0	611	813
% App. Total	73.9	21.7	4.3		98.3	1.7	0		0.3	99.7	0		
PHF	.472	.625	.250	.575	.746	.375	.000	.734	.250	.928	.000	.931	.954
Cars	15	5	1	21	162	3	0	165	2	598	0	600	786
% Cars	88.2	100	100	91.3	92.0	100	0	92.2	100	98.2	0	98.2	96.7
Trucks	2	0	0	2	14	0	0	14	0	11	0	11	27
% Trucks	11.8	0	0	8.7	8.0	0	0	7.8	0	1.8	0	1.8	3.3



Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Wells PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 1

E-W Street: Lincoln Road
N-S Street: Wells Road

Groups Printed- Cars - Trucks

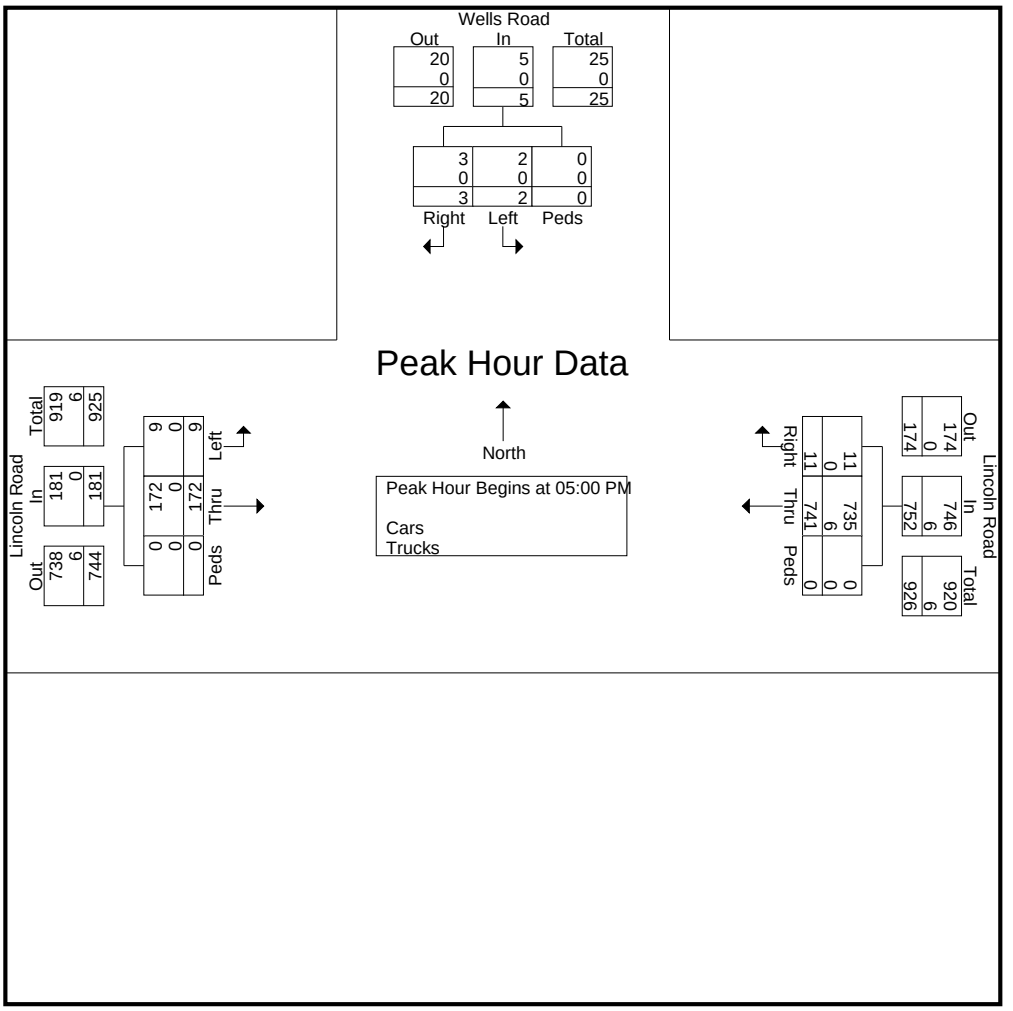
	Wells Road From North				Lincoln Road From East				Lincoln Road From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
04:00 PM	2	4	0	6	143	4	0	147	0	46	0	46	199
04:15 PM	0	1	0	1	156	4	0	160	3	47	0	50	211
04:30 PM	0	0	0	0	186	5	0	191	3	51	0	54	245
04:45 PM	1	3	0	4	165	3	0	168	0	48	0	48	220
Total	3	8	0	11	650	16	0	666	6	192	0	198	875
05:00 PM	1	1	0	2	155	2	0	157	0	46	0	46	205
05:15 PM	0	1	0	1	205	4	0	209	1	48	0	49	259
05:30 PM	0	1	0	1	197	0	0	197	7	36	0	43	241
05:45 PM	1	0	0	1	184	5	0	189	1	42	0	43	233
Total	2	3	0	5	741	11	0	752	9	172	0	181	938
Grand Total	5	11	0	16	1391	27	0	1418	15	364	0	379	1813
Apprch %	31.2	68.8	0		98.1	1.9	0		4	96	0		
Total %	0.3	0.6	0	0.9	76.7	1.5	0	78.2	0.8	20.1	0	20.9	
Cars	5	11	0	16	1379	27	0	1406	15	363	0	378	1800
% Cars	100	100	0	100	99.1	100	0	99.2	100	99.7	0	99.7	99.3
Trucks	0	0	0	0	12	0	0	12	0	1	0	1	13
% Trucks	0	0	0	0	0.9	0	0	0.8	0	0.3	0	0.3	0.7

Ron Müller & Associates
Traffic Engineering and Consulting Services

File Name : 19055 Lincoln-Wells PM
Site Code : 19055
Start Date : 1/9/2020
Page No : 2

E-W Street: Lincoln Road
N-S Street: Wells Road

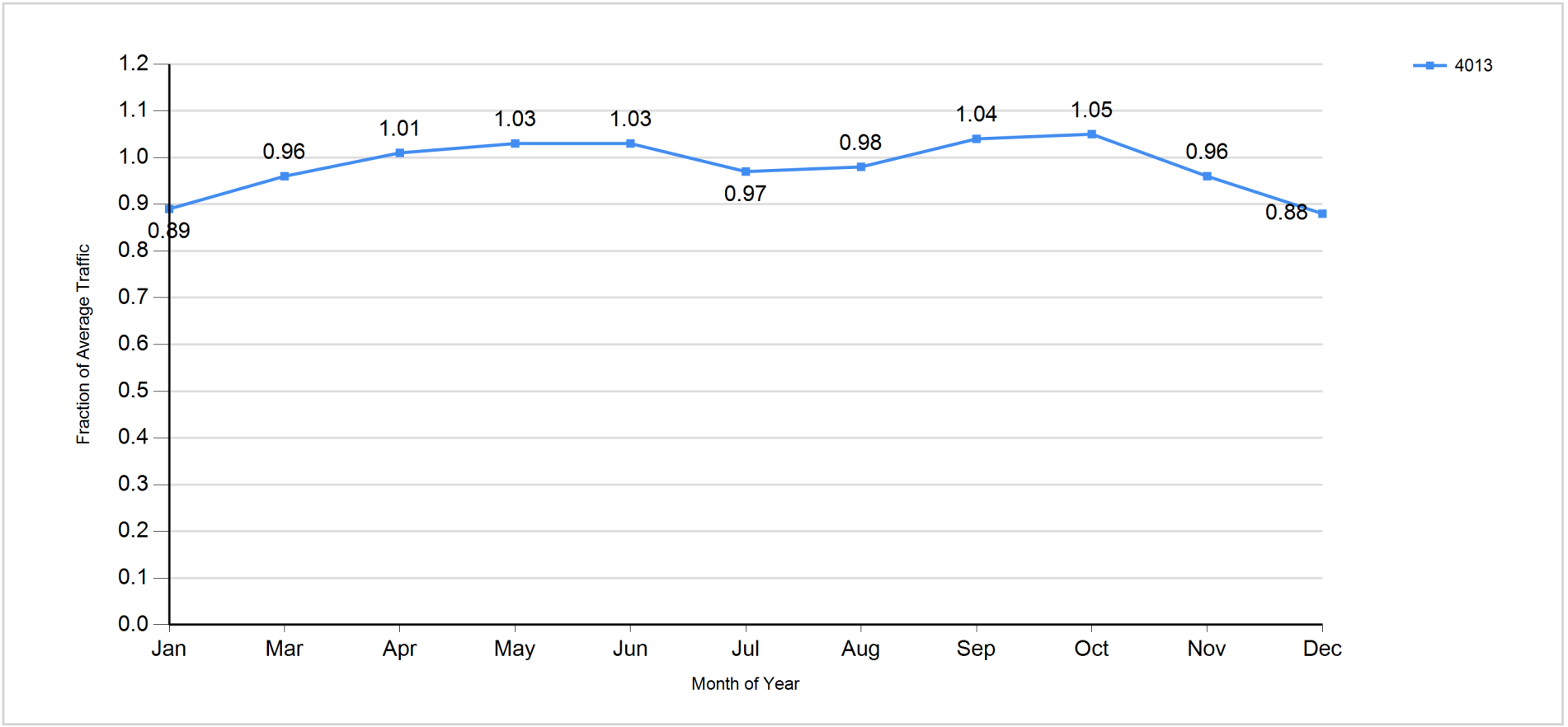
	Wells Road From North				Lincoln Road From East				Lincoln Road From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**1**	**1**	0	**2**	155	2	0	157	0	46	0	46	205
05:15 PM	0	1	0	1	**205**	4	0	**209**	1	**48**	0	**49**	**259**
05:30 PM	0	1	0	1	197	0	0	197	**7**	36	0	43	241
05:45 PM	1	0	0	1	184	**5**	0	189	1	42	0	43	233
Total Volume	2	3	0	5	741	11	0	752	9	172	0	181	938
% App. Total	40	60	0		98.5	1.5	0		5	95	0		
PHF	.500	.750	.000	.625	.904	.550	.000	.900	.321	.896	.000	.923	.905
Cars	2	3	0	5	735	11	0	746	9	172	0	181	932
% Cars	100	100	0	100	99.2	100	0	99.2	100	100	0	100	99.4
Trucks	0	0	0	0	6	0	0	6	0	0	0	0	6
% Trucks	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0.6



Seasonal/Historical and Background Growth Adjustment Data

Massachusetts Highway Department

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



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

Factor Group	Station	Weight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
U3	4013		0.890		0.957	1.013	1.033	1.030	0.972	0.979	1.036	1.053	0.962	0.876
	Average of Weighted Factors		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

MassDOT Transportation Data Management System

STATION 4013 - Cambridge Turnpike at Lexington Town Line

YEAR #	YEAR	AADT
1	2010	46303
2	2011	
3	2012	49418
4	2013	52482
5	2014	
6	2015	
7	2016	49738
8	2017	50675
9	2018	50267
10	2019	51388

2015-2019 Annual Growth:

Year 6-7	
Year 6-8	
Year 6-9	
Year 6-10	
Year 7-8	1.88%
Year 7-9	0.53%
Year 7-10	1.11%
Year 8-9	-0.81%
Year 8-10	0.70%
Year 9-10	2.23%
Avg. Growth:	**0.94%**

Traffic Growth Calculations

Year 1-2		Year 2-3		Year 3-4	6.20%	Year 4-5		Year 5-6	
Year 1-3	3.36%	Year 2-4		Year 3-5		Year 4-6		Year 5-7	
Year 1-4	4.45%	Year 2-5		Year 3-6		Year 4-7	-1.74%	Year 5-8	
Year 1-5		Year 2-6		Year 3-7	0.16%	Year 4-8	-0.86%	Year 5-9	
Year 1-6		Year 2-7		Year 3-8	0.51%	Year 4-9	-0.84%	Year 5-10	
Year 1-7	1.24%	Year 2-8		Year 3-9	0.29%	Year 4-10	-0.35%		
Year 1-8	1.35%	Year 2-9		Year 3-10	0.57%				
Year 1-9	1.07%	Year 2-10							
Year 1-10	1.22%								
Year 6-7		Year 7-8	1.88%	Year 8-9	-0.81%	Year 9-10	2.23%		
Year 6-8		Year 7-9	0.53%	Year 8-10	0.70%				
Year 6-9		Year 7-10	1.11%						
Year 6-10									

2009-2018 Annual Average Traffic Growth Rate: **1.06%**

Trip Generation and Distribution Worksheets

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Existing	**Date:**	3/4/2020
Analysis Year:	2020	**Checked By:**	
Analysis Period:	**AM Street Peak Hour - Existing**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	69	59	10
Retail	820	63,499	SF	184	114	70
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	204	Dwelling Units	94	22	72
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	69	42	27
				416	237	179

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	2		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	416	237	179
Internal Capture Percentage	3%	3%	4%
External Vehicle-Trips[5]	390	227	163
External Transit-Trips[6]	8	2	6
External Non-Motorized Trips[6]	4	1	3

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	5%	30%
Retail	4%	3%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lincoln Traffic Study
Analysis Period:	**AM Street Peak Hour - Existing**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	59	59	1.00	10	10
Retail	1.00	114	114	1.00	70	70
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	22	22	1.00	72	72
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	6	0	0	0
Retail	20		9	0	10	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	14	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		36	0	0	0	0
Retail	2		0	0	0	0
Restaurant	8	9		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	19	0	0		0
Hotel	2	5	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3	56	59	56	0	0
Retail	4	110	114	110	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	22	22	19	2	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	42	42	42	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3	7	10	7	0	0
Retail	2	68	70	68	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	70	72	61	6	3
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	27	27	27	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Existing	**Date:**	3/4/2020
Analysis Year:	2020	**Checked By:**	
Analysis Period:	**PM Street Peak Hour - Existing**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	53	8	45
Retail	820	63,499	SF	400	192	208
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	204	Dwelling Units	111	70	41
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	92	39	53
				656	309	347

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	0	0	1	0
Retail	2		0	0	32	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	17	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	656	309	347
Internal Capture Percentage	19%	20%	18%
External Vehicle-Trips[5]	523	242	281
External Transit-Trips[6]	5	3	2
External Non-Motorized Trips[6]	2	1	1

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	50%	22%
Retail	14%	16%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	47%	46%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Lincoln Traffic Study
Analysis Period:	**PM Street Peak Hour - Existing**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	8	8	1.00	45	45
Retail	1.00	192	192	1.00	208	208
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	70	70	1.00	41	41
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	2	0	1	0
Retail	4		60	8	54	10
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	17	9	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		15	0	0	3	0
Retail	2		0	0	32	0
Restaurant	2	96		0	11	0
Cinema/Entertainment	0	8	0		3	0
Residential	5	19	0	0		0
Hotel	0	4	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	4	4	8	4	0	0
Retail	26	166	192	166	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	33	37	70	33	3	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	39	39	39	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	35	45	35	0	0
Retail	34	174	208	174	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	22	41	19	2	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	53	53	53	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Future Build Alt 1	**Date:**	3/4/2020
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**AM Street Peak Hour - Alt 1**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	69	59	10
Retail	820	63,499	SF	184	114	70
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	444	Dwelling Units	197	45	152
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	69	42	27
				519	260	259

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	2		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	519	260	259
Internal Capture Percentage	4%	4%	4%
External Vehicle-Trips[5]	475	244	231
External Transit-Trips[6]	16	4	12
External Non-Motorized Trips[6]	8	2	6

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	7%	30%
Retail	4%	4%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lincoln Traffic Study
Analysis Period:	**AM Street Peak Hour - Alt 1**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	59	59	1.00	10	10
Retail	1.00	114	114	1.00	70	70
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	45	45	1.00	152	152
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	6	0	0	0
Retail	20		9	0	10	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	30	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		36	0	0	0	0
Retail	2		0	0	1	0
Restaurant	8	9		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	19	0	0		0
Hotel	2	5	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	4	55	59	55	0	0
Retail	5	109	114	109	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	44	45	38	4	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	42	42	42	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3	7	10	7	0	0
Retail	3	67	70	67	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	148	152	130	12	6
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	27	27	27	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Future Build Alt 1	**Date:**	3/4/2020
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**PM Street Peak Hour - Alt 1**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	53	8	45
Retail	820	63,499	SF	400	192	208
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	444	Dwelling Units	223	140	83
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	92	39	53
				768	379	389

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	0	0	1	0
Retail	2		0	0	54	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	19	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	768	379	389
Internal Capture Percentage	23%	23%	23%
External Vehicle-Trips[5]	575	281	294
External Transit-Trips[6]	12	7	5
External Non-Motorized Trips[6]	5	3	2

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	63%	22%
Retail	15%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	39%	27%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Lincoln Traffic Study
Analysis Period:	**PM Street Peak Hour - Alt 1**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	8	8	1.00	45	45
Retail	1.00	192	192	1.00	208	208
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	140	140	1.00	83	83
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	2	0	1	0
Retail	4		60	8	54	10
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	35	17	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		15	0	0	6	0
Retail	2		0	0	64	0
Restaurant	2	96		0	22	0
Cinema/Entertainment	0	8	0		6	0
Residential	5	19	0	0		0
Hotel	0	4	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	5	3	8	3	0	0
Retail	28	164	192	164	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	55	85	140	75	7	3
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	39	39	39	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	35	45	35	0	0
Retail	56	152	208	152	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	22	61	83	54	5	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	53	53	53	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Future Build Alt 2	**Date:**	3/4/2020
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	69	59	10
Retail	820	77,999	SF	191	118	73
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	475	Dwelling Units	210	48	162
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	69	42	27
				539	267	272

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	2		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	539	267	272
Internal Capture Percentage	4%	4%	4%
External Vehicle-Trips[5]	494	251	243
External Transit-Trips[6]	17	4	13
External Non-Motorized Trips[6]	8	2	6

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	7%	30%
Retail	4%	4%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	2%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Lincoln Traffic Study
Analysis Period:	**AM Street Peak Hour - Alt 2**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	59	59	1.00	10	10
Retail	1.00	118	118	1.00	73	73
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	48	48	1.00	162	162
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	6	0	0	0
Retail	21		9	0	10	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	32	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		38	0	0	0	0
Retail	2		0	0	1	0
Restaurant	8	9		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	0	0		0
Hotel	2	5	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	4	55	59	55	0	0
Retail	5	113	118	113	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	47	48	41	4	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	42	42	42	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3	7	10	7	0	0
Retail	3	70	73	70	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	158	162	139	13	6
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	27	27	27	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lincoln Traffic Study	**Organization:**	Ron Muller & Associates
Project Location:	Lincoln, MA	**Performed By:**	KB
Scenario Description:	Future Build Alt 2	**Date:**	3/4/2020
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	44,796	SF	53	8	45
Retail	820	77,999	SF	466	224	242
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	475	Dwelling Units	236	149	87
Hotel				0		
All Other Land Uses[2]	150 / 560 / 944	23,979	SF	92	39	53
				847	420	427

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential		8%	4%		8%	4%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	0	0	1	0
Retail	2		0	0	63	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	22	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	847	420	427
Internal Capture Percentage	24%	24%	23%
External Vehicle-Trips[5]	630	310	320
External Transit-Trips[6]	12	7	5
External Non-Motorized Trips[6]	5	3	2

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	63%	22%
Retail	14%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	43%	29%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Lincoln Traffic Study
Analysis Period:	**PM Street Peak Hour - Alt 2**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	8	8	1.00	45	45
Retail	1.00	224	224	1.00	242	242
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	149	149	1.00	87	87
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	2	0	1	0
Retail	5		70	10	63	12
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	37	18	0		3
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		18	0	0	6	0
Retail	2		0	0	69	0
Restaurant	2	112		0	24	0
Cinema/Entertainment	0	9	0		6	0
Residential	5	22	0	0		0
Hotel	0	4	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	5	3	8	3	0	0
Retail	31	193	224	193	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	64	85	149	75	7	3
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	39	39	39	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	35	45	35	0	0
Retail	65	177	242	177	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	25	62	87	55	5	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	53	53	53	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Capacity Analysis Methodology and Worksheets

General

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); Transportation Research Board; Washington, D.C.; 2010. The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level of service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

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

Unsignalized Intersections

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

Signalized Intersections

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

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

Level of Service	Unsignalized Criteria Average Control Delay In Seconds Per Vehicle	Signalized Criteria Average Control Delay In Seconds Per Vehicle
A	≤ 10	≤ 10
B	10.1 to 15.0	10.1 to 20.0
C	15.1 to 25.0	20.1 to 35.0
D	25.1 to 35.0	35.1 to 55.0
E	35.1 to 50.0	55.1 to 80.0
F	>50	>80

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

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	646	2	32	140	64	2	50	33	52	53	4
Future Vol, veh/h	19	646	2	32	140	64	2	50	33	52	53	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	702	2	35	152	70	2	54	36	57	58	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	222	0	0	704	0	0	1033	1037	703	1047	1003	187
Stage 1	-	-	-	-	-	-	745	745	-	257	257	-
Stage 2	-	-	-	-	-	-	288	292	-	790	746	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1347	-	-	894	-	-	211	231	438	206	242	855
Stage 1	-	-	-	-	-	-	406	421	-	748	695	-
Stage 2	-	-	-	-	-	-	720	671	-	383	421	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1347	-	-	894	-	-	160	215	438	144	225	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	215	-	144	225	-
Stage 1	-	-	-	-	-	-	395	410	-	729	664	-
Stage 2	-	-	-	-	-	-	625	641	-	297	410	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.2	25.7	56.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	265	1347	-	-	894	-	-	181
HCM Lane V/C Ratio	0.349	0.015	-	-	0.039	-	-	0.655
HCM Control Delay (s)	25.7	7.7	0	-	9.2	0	-	56.3
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.5	0	-	-	0.1	-	-	3.8

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	710	9	10	228	9	6	6	14	10	0	3
Future Vol, veh/h	2	710	9	10	228	9	6	6	14	10	0	3
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	772	10	11	248	10	7	7	15	11	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	258	0	0	782	0	0	1058	1061	777	1067	1061	253
Stage 1	-	-	-	-	-	-	781	781	-	275	275	-
Stage 2	-	-	-	-	-	-	277	280	-	792	786	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1307	-	-	836	-	-	203	224	397	200	224	786
Stage 1	-	-	-	-	-	-	388	405	-	731	683	-
Stage 2	-	-	-	-	-	-	729	679	-	382	403	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1307	-	-	836	-	-	199	220	397	185	220	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	220	-	185	220	-
Stage 1	-	-	-	-	-	-	387	404	-	729	673	-
Stage 2	-	-	-	-	-	-	715	669	-	360	402	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	19.2	22.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1307	-	-	836	-	-	225
HCM Lane V/C Ratio	0.101	0.002	-	-	0.013	-	-	0.063
HCM Control Delay (s)	19.2	7.8	0	-	9.4	0	-	22.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	713	2	7	224	10	10
Future Vol, veh/h	713	2	7	224	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	775	2	8	243	11	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	777	0	1035	776
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	259	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	839	-	257	397
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	784	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	839	-	254	397
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	-	-	839	-
HCM Lane V/C Ratio	0.07	-	-	0.009	-
HCM Control Delay (s)	17.5	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	676	195	3	19	6
Future Vol, veh/h	2	676	195	3	19	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	735	212	3	21	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	215	0	-	0	953	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	739	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1355	-	-	-	287	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1355	-	-	-	286	826
Mov Cap-2 Maneuver	-	-	-	-	286	-
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	472	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1355	-	-	-	339
HCM Lane V/C Ratio	0.002	-	-	-	0.08
HCM Control Delay (s)	7.7	0	-	-	16.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	703	33	7	228	0	4	0	8	4	0	14
Future Vol, veh/h	0	703	33	7	228	0	4	0	8	4	0	14
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	764	36	8	248	0	4	0	9	4	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	800	0	0	1054	1046	782	1051	1064	248
Stage 1	-	-	-	-	-	-	782	782	-	264	264	-
Stage 2	-	-	-	-	-	-	272	264	-	787	800	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	823	-	0	204	228	394	205	223	791
Stage 1	0	-	-	-	-	0	387	405	-	741	690	-
Stage 2	0	-	-	-	-	0	734	690	-	385	397	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	823	-	-	198	225	394	199	221	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	225	-	199	221	-
Stage 1	-	-	-	-	-	-	387	405	-	741	682	-
Stage 2	-	-	-	-	-	-	712	682	-	377	397	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	17.7	12.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	296	-	-	823	-	476
HCM Lane V/C Ratio	0.044	-	-	0.009	-	0.041
HCM Control Delay (s)	17.7	-	-	9.4	0	12.9
HCM Lane LOS	C	-	-	A	A	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	117	606	0	0	214	24	0	0	0	23	0	17
Future Vol, veh/h	117	606	0	0	214	24	0	0	0	23	0	17
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	127	659	0	0	233	26	0	0	0	25	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	659	0	0	1168	1172	659	1159	1159	246
Stage 1	-	-	-	-	-	-	913	913	-	246	246	-
Stage 2	-	-	-	-	-	-	255	259	-	913	913	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	929	-	-	170	192	464	173	196	793
Stage 1	-	-	-	-	-	-	328	352	-	758	703	-
Stage 2	-	-	-	-	-	-	749	694	-	328	352	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1306	-	-	929	-	-	147	163	464	153	166	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	163	-	153	166	-
Stage 1	-	-	-	-	-	-	278	298	-	642	703	-
Stage 2	-	-	-	-	-	-	732	694	-	278	298	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	0	24
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1306	-	-	929	-	-	233
HCM Lane V/C Ratio	-	0.097	-	-	-	-	-	0.187
HCM Control Delay (s)	0	8.1	0	-	0	-	-	24
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	9	147	7	34	683	147	8	92	40	33	78	2
Future Vol, veh/h	9	147	7	34	683	147	8	92	40	33	78	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	160	8	37	742	160	9	100	43	36	85	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	902	0	0	168	0	0	1124	1160	164	1152	1084	822
Stage 1	-	-	-	-	-	-	184	184	-	896	896	-
Stage 2	-	-	-	-	-	-	940	976	-	256	188	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	754	-	-	1410	-	-	183	195	881	175	217	374
Stage 1	-	-	-	-	-	-	818	747	-	335	359	-
Stage 2	-	-	-	-	-	-	316	329	-	749	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	754	-	-	1410	-	-	116	182	881	90	202	374
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	182	-	90	202	-
Stage 1	-	-	-	-	-	-	806	736	-	330	339	-
Stage 2	-	-	-	-	-	-	223	311	-	606	734	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	48.6	92.2
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	226	754	-	-	1410	-	-	149
HCM Lane V/C Ratio	0.673	0.013	-	-	0.026	-	-	0.824
HCM Control Delay (s)	48.6	9.8	0	-	7.6	0	-	92.2
HCM Lane LOS	E	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	4.2	0	-	-	0.1	-	-	5.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	213	4	3	845	20	4	1	6	2	0	6
Future Vol, veh/h	2	213	4	3	845	20	4	1	6	2	0	6
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	232	4	3	918	22	4	1	7	2	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	940	0	0	236	0	0	1177	1184	234	1177	1175	929
Stage 1	-	-	-	-	-	-	238	238	-	935	935	-
Stage 2	-	-	-	-	-	-	939	946	-	242	240	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	729	-	-	1331	-	-	168	189	805	168	192	324
Stage 1	-	-	-	-	-	-	765	708	-	318	344	-
Stage 2	-	-	-	-	-	-	317	340	-	762	707	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	729	-	-	1331	-	-	164	187	805	165	190	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	187	-	165	190	-
Stage 1	-	-	-	-	-	-	763	706	-	317	342	-
Stage 2	-	-	-	-	-	-	309	338	-	752	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	17.7	19.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	729	-	-	1331	-	-	261
HCM Lane V/C Ratio	0.04	0.003	-	-	0.002	-	-	0.033
HCM Control Delay (s)	17.7	10	0	-	7.7	0	-	19.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	213	6	8	733	9	8
Future Vol, veh/h	213	6	8	733	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	232	7	9	797	10	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	239	0	1051	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	815	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1328	-	251	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	435	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1328	-	248	803
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	430	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	368	-	-	1328	-
HCM Lane V/C Ratio	0.05	-	-	0.007	-
HCM Control Delay (s)	15.3	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	191	823	12	2	3
Future Vol, veh/h	10	191	823	12	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	208	895	13	2	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	908	0	-	0	1132	902
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	750	-	-	-	225	336
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	750	-	-	-	221	336
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	750	-	-	-	278
HCM Lane V/C Ratio	0.014	-	-	-	0.02
HCM Control Delay (s)	9.9	0	-	-	18.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	221	4	8	765	0	7	0	4	12	1	57
Future Vol, veh/h	0	221	4	8	765	0	7	0	4	12	1	57
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	240	4	9	832	0	8	0	4	13	1	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	244	0	0	1124	1092	242	1094	1094	832
Stage 1	-	-	-	-	-	-	242	242	-	850	850	-
Stage 2	-	-	-	-	-	-	882	850	-	244	244	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1322	-	0	183	215	797	191	214	369
Stage 1	0	-	-	-	-	0	762	705	-	355	377	-
Stage 2	0	-	-	-	-	0	341	377	-	760	704	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1322	-	-	150	212	797	188	211	369
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	212	-	188	211	-
Stage 1	-	-	-	-	-	-	762	705	-	355	372	-
Stage 2	-	-	-	-	-	-	279	372	-	756	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	22.9	20.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	213	-	-	1322	-	314
HCM Lane V/C Ratio	0.056	-	-	0.007	-	0.242
HCM Control Delay (s)	22.9	-	-	7.7	0	20.1
HCM Lane LOS	C	-	-	A	A	C
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0.9

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	74	189	0	0	620	56	1	0	1	46	1	44
Future Vol, veh/h	74	189	0	0	620	56	1	0	1	46	1	44
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	205	0	0	674	61	1	0	1	50	1	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	735	0	0	205	0	0	1094	1100	205	1071	1070	705
Stage 1	-	-	-	-	-	-	365	365	-	705	705	-
Stage 2	-	-	-	-	-	-	729	735	-	366	365	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	870	-	-	1366	-	-	191	212	836	198	221	436
Stage 1	-	-	-	-	-	-	654	623	-	427	439	-
Stage 2	-	-	-	-	-	-	414	425	-	653	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	870	-	-	1366	-	-	156	190	836	182	198	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	190	-	182	198	-
Stage 1	-	-	-	-	-	-	586	558	-	383	439	-
Stage 2	-	-	-	-	-	-	368	425	-	584	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0	18.8	27.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	263	870	-	-	1366	-	-	254
HCM Lane V/C Ratio	0.008	0.092	-	-	-	-	-	0.389
HCM Control Delay (s)	18.8	9.6	0	-	0	-	-	27.9
HCM Lane LOS	C	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	1.8

Intersection	
Int Delay, s/veh	13.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	714	2	35	155	71	2	55	36	57	59	4
Future Vol, veh/h	21	714	2	35	155	71	2	55	36	57	59	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	776	2	38	168	77	2	60	39	62	64	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	778	0	0	1140	1144	777	1156	1107	207
Stage 1	-	-	-	-	-	-	823	823	-	283	283	-
Stage 2	-	-	-	-	-	-	317	321	-	873	824	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	839	-	-	178	200	397	174	210	833
Stage 1	-	-	-	-	-	-	368	388	-	724	677	-
Stage 2	-	-	-	-	-	-	694	652	-	345	387	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1321	-	-	839	-	-	124	184	397	110	193	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	184	-	110	193	-
Stage 1	-	-	-	-	-	-	357	376	-	702	641	-
Stage 2	-	-	-	-	-	-	588	617	-	253	375	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.3	32.6	110
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	229	1321	-	-	839	-	-	145
HCM Lane V/C Ratio	0.441	0.017	-	-	0.045	-	-	0.9
HCM Control Delay (s)	32.6	7.8	0	-	9.5	0	-	110
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.1	0.1	-	-	0.1	-	-	6.1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	785	10	11	252	10	7	7	15	11	0	3
Future Vol, veh/h	2	785	10	11	252	10	7	7	15	11	0	3
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	853	11	12	274	11	8	8	16	12	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	864	0	0	1168	1172	859	1179	1172	280
Stage 1	-	-	-	-	-	-	863	863	-	304	304	-
Stage 2	-	-	-	-	-	-	305	309	-	875	868	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	779	-	-	170	192	356	167	192	759
Stage 1	-	-	-	-	-	-	349	372	-	705	663	-
Stage 2	-	-	-	-	-	-	705	660	-	344	370	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	779	-	-	167	188	356	152	188	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	188	-	152	188	-
Stage 1	-	-	-	-	-	-	348	371	-	703	651	-
Stage 2	-	-	-	-	-	-	689	648	-	321	369	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	22.3	26.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	239	1277	-	-	779	-	-	183
HCM Lane V/C Ratio	0.132	0.002	-	-	0.015	-	-	0.083
HCM Control Delay (s)	22.3	7.8	0	-	9.7	0	-	26.4
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	789	2	8	248	11	11
Future Vol, veh/h	789	2	8	248	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	858	2	9	270	12	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	860	0	1147	859
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	781	-	220	356
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	781	-	217	356
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	750	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	781	-
HCM Lane V/C Ratio	0.089	-	-	0.011	-
HCM Control Delay (s)	19.6	-	-	9.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	747	215	3	21	7
Future Vol, veh/h	2	747	215	3	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	812	234	3	23	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	237	0	-	0	1052	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	816	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1330	-	-	-	251	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	435	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1330	-	-	-	250	803
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	435	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1330	-	-	-	302
HCM Lane V/C Ratio	0.002	-	-	-	0.101
HCM Control Delay (s)	7.7	0	-	-	18.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	777	36	8	252	0	4	0	9	4	0	15
Future Vol, veh/h	0	777	36	8	252	0	4	0	9	4	0	15
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	845	39	9	274	0	4	0	10	4	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	884	0	0	1165	1157	865	1162	1176	274
Stage 1	-	-	-	-	-	-	865	865	-	292	292	-
Stage 2	-	-	-	-	-	-	300	292	-	870	884	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	765	-	0	171	196	353	172	191	765
Stage 1	0	-	-	-	-	0	348	371	-	716	671	-
Stage 2	0	-	-	-	-	0	709	671	-	346	363	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	765	-	-	166	193	353	165	188	765
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	193	-	165	188	-
Stage 1	-	-	-	-	-	-	348	371	-	716	662	-
Stage 2	-	-	-	-	-	-	684	662	-	336	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	19.5	13.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	262	-	-	765	-	433
HCM Lane V/C Ratio	0.054	-	-	0.011	-	0.048
HCM Control Delay (s)	19.5	-	-	9.8	0	13.7
HCM Lane LOS	C	-	-	A	A	B
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	129	670	0	0	236	27	0	0	0	25	0	19
Future Vol, veh/h	129	670	0	0	236	27	0	0	0	25	0	19
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	140	728	0	0	257	29	0	0	0	27	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	286	0	0	728	0	0	1290	1294	728	1280	1280	272
Stage 1	-	-	-	-	-	-	1008	1008	-	272	272	-
Stage 2	-	-	-	-	-	-	282	286	-	1008	1008	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1276	-	-	876	-	-	140	163	423	143	166	767
Stage 1	-	-	-	-	-	-	290	318	-	734	685	-
Stage 2	-	-	-	-	-	-	725	675	-	290	318	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1276	-	-	876	-	-	117	133	423	123	135	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	133	-	123	135	-
Stage 1	-	-	-	-	-	-	237	259	-	599	685	-
Stage 2	-	-	-	-	-	-	705	675	-	237	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	0	29.7
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1276	-	-	876	-	-	193
HCM Lane V/C Ratio	-	0.11	-	-	-	-	-	0.248
HCM Control Delay (s)	0	8.2	0	-	0	-	-	29.7
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	34.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	162	8	38	755	162	9	102	44	36	86	2
Future Vol, veh/h	10	162	8	38	755	162	9	102	44	36	86	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	176	9	41	821	176	10	111	48	39	93	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	997	0	0	185	0	0	1242	1282	181	1273	1198	909
Stage 1	-	-	-	-	-	-	203	203	-	991	991	-
Stage 2	-	-	-	-	-	-	1039	1079	-	282	207	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	694	-	-	1390	-	-	152	165	862	144	186	333
Stage 1	-	-	-	-	-	-	799	733	-	296	324	-
Stage 2	-	-	-	-	-	-	279	295	-	725	731	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	694	-	-	1390	-	-	80	151	862	52	170	333
Mov Cap-2 Maneuver	-	-	-	-	-	-	80	151	-	52	170	-
Stage 1	-	-	-	-	-	-	785	720	-	291	302	-
Stage 2	-	-	-	-	-	-	178	275	-	569	718	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	95.9	268.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	185	694	-	-	1390	-	-	103
HCM Lane V/C Ratio	0.911	0.016	-	-	0.03	-	-	1.309
HCM Control Delay (s)	95.9	10.3	0	-	7.7	0	-	268.8
HCM Lane LOS	F	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	7	0	-	-	0.1	-	-	9.4

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	235	4	3	934	22	4	1	7	2	0	7
Future Vol, veh/h	2	235	4	3	934	22	4	1	7	2	0	7
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	255	4	3	1015	24	4	1	8	2	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1039	0	0	259	0	0	1298	1306	257	1299	1296	1027
Stage 1	-	-	-	-	-	-	261	261	-	1033	1033	-
Stage 2	-	-	-	-	-	-	1037	1045	-	266	263	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	669	-	-	1306	-	-	139	160	782	138	162	285
Stage 1	-	-	-	-	-	-	744	692	-	281	310	-
Stage 2	-	-	-	-	-	-	279	306	-	739	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	669	-	-	1306	-	-	134	159	782	135	161	285
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	159	-	135	161	-
Stage 1	-	-	-	-	-	-	742	690	-	280	308	-
Stage 2	-	-	-	-	-	-	270	304	-	728	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	19.2	21.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	266	669	-	-	1306	-	-	229
HCM Lane V/C Ratio	0.049	0.003	-	-	0.002	-	-	0.043
HCM Control Delay (s)	19.2	10.4	0	-	7.8	0	-	21.4
HCM Lane LOS	C	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	7	9	810	10	9
Future Vol, veh/h	235	7	9	810	10	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	8	10	880	11	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	263	0	1159	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	900	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1301	-	216	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1301	-	213	780
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	391	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	325	-	-	1301	-
HCM Lane V/C Ratio	0.064	-	-	0.008	-
HCM Control Delay (s)	16.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	211	909	13	2	3
Future Vol, veh/h	11	211	909	13	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	229	988	14	2	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1002	0	-	0	1248	995
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	691	-	-	-	191	297
Stage 1	-	-	-	-	358	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	691	-	-	-	187	297
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	789	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	691	-	-	-	240
HCM Lane V/C Ratio	0.017	-	-	-	0.023
HCM Control Delay (s)	10.3	0	-	-	20.3
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	244	4	9	845	0	8	0	4	13	1	63
Future Vol, veh/h	0	244	4	9	845	0	8	0	4	13	1	63
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	265	4	10	918	0	9	0	4	14	1	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	269	0	0	1240	1205	267	1207	1207	918
Stage 1	-	-	-	-	-	-	267	267	-	938	938	-
Stage 2	-	-	-	-	-	-	973	938	-	269	269	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1295	-	0	152	184	772	160	183	329
Stage 1	0	-	-	-	-	0	738	688	-	317	343	-
Stage 2	0	-	-	-	-	0	303	343	-	737	687	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1295	-	-	118	181	772	157	180	329
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	181	-	157	180	-
Stage 1	-	-	-	-	-	-	738	688	-	317	338	-
Stage 2	-	-	-	-	-	-	235	338	-	733	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	28.8	23.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	164	-	-	1295	-	275
HCM Lane V/C Ratio	0.08	-	-	0.008	-	0.304
HCM Control Delay (s)	28.8	-	-	7.8	0	23.7
HCM Lane LOS	D	-	-	A	A	C
HCM 95th %tile Q(veh)	0.3	-	-	0	-	1.2

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	82	209	0	3	685	62	1	0	1	51	1	49
Future Vol, veh/h	82	209	0	3	685	62	1	0	1	51	1	49
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	227	0	3	745	67	1	0	1	55	1	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	812	0	0	227	0	0	1217	1223	227	1191	1190	779
Stage 1	-	-	-	-	-	-	405	405	-	785	785	-
Stage 2	-	-	-	-	-	-	812	818	-	406	405	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	814	-	-	1341	-	-	158	179	812	164	188	396
Stage 1	-	-	-	-	-	-	622	598	-	386	404	-
Stage 2	-	-	-	-	-	-	373	390	-	622	598	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	814	-	-	1341	-	-	123	156	812	148	164	396
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	156	-	148	164	-
Stage 1	-	-	-	-	-	-	544	523	-	338	402	-
Stage 2	-	-	-	-	-	-	321	388	-	544	523	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	22	38.6
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	814	-	-	1341	-	-	213
HCM Lane V/C Ratio	0.01	0.109	-	-	0.002	-	-	0.515
HCM Control Delay (s)	22	10	0	-	7.7	0	-	38.6
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0	0.4	-	-	0	-	-	2.6

Intersection	
Int Delay, s/veh	16.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	716	2	38	161	82	2	55	36	60	59	4
Future Vol, veh/h	21	716	2	38	161	82	2	55	36	60	59	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	778	2	41	175	89	2	60	39	65	64	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	264	0	0	780	0	0	1161	1171	779	1177	1128	220
Stage 1	-	-	-	-	-	-	825	825	-	302	302	-
Stage 2	-	-	-	-	-	-	336	346	-	875	826	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1300	-	-	837	-	-	172	193	396	168	204	820
Stage 1	-	-	-	-	-	-	367	387	-	707	664	-
Stage 2	-	-	-	-	-	-	678	635	-	344	387	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	837	-	-	117	176	396	104	186	820
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	176	-	104	186	-
Stage 1	-	-	-	-	-	-	356	375	-	685	625	-
Stage 2	-	-	-	-	-	-	570	598	-	253	375	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.3	34.3	133.4
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	221	1300	-	-	837	-	-	137
HCM Lane V/C Ratio	0.457	0.018	-	-	0.049	-	-	0.976
HCM Control Delay (s)	34.3	7.8	0	-	9.5	0	-	133.4
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.2	-	-	6.9

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	790	10	11	272	10	7	7	15	11	0	3
Future Vol, veh/h	2	790	10	11	272	10	7	7	15	11	0	3
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	859	11	12	296	11	8	8	16	12	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	870	0	0	1196	1200	865	1207	1200	302
Stage 1	-	-	-	-	-	-	869	869	-	326	326	-
Stage 2	-	-	-	-	-	-	327	331	-	881	874	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1254	-	-	775	-	-	163	185	353	160	185	738
Stage 1	-	-	-	-	-	-	347	369	-	687	648	-
Stage 2	-	-	-	-	-	-	686	645	-	341	367	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1254	-	-	775	-	-	160	181	353	145	181	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	181	-	145	181	-
Stage 1	-	-	-	-	-	-	346	368	-	685	636	-
Stage 2	-	-	-	-	-	-	670	633	-	318	366	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	22.9	27.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	232	1254	-	-	775	-	-	175
HCM Lane V/C Ratio	0.136	0.002	-	-	0.015	-	-	0.087
HCM Control Delay (s)	22.9	7.9	0	-	9.7	0	-	27.5
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	792	4	8	261	18	29
Future Vol, veh/h	792	4	8	261	18	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	861	4	9	284	20	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	865	0	1165	863
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	302	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	778	-	215	354
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	750	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	778	-	212	354
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	282	-	-	778	-
HCM Lane V/C Ratio	0.181	-	-	0.011	-
HCM Control Delay (s)	20.6	-	-	9.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	780	224	7	37	14
Future Vol, veh/h	4	780	224	7	37	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	848	243	8	40	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	251	0	-	0	1103	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	856	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1314	-	-	-	234	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	416	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1314	-	-	-	233	792
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	416	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1314	-	-	-	289
HCM Lane V/C Ratio	0.003	-	-	-	0.192
HCM Control Delay (s)	7.7	0	-	-	20.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	782	36	13	272	0	4	0	9	4	0	15
Future Vol, veh/h	0	782	36	13	272	0	4	0	9	4	0	15
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	850	39	14	296	0	4	0	10	4	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	889	0	0	1202	1194	870	1199	1213	296
Stage 1	-	-	-	-	-	-	870	870	-	324	324	-
Stage 2	-	-	-	-	-	-	332	324	-	875	889	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	762	-	0	161	187	351	162	182	743
Stage 1	0	-	-	-	-	0	346	369	-	688	650	-
Stage 2	0	-	-	-	-	0	681	650	-	344	361	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	762	-	-	155	183	351	155	178	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	183	-	155	178	-
Stage 1	-	-	-	-	-	-	346	369	-	688	636	-
Stage 2	-	-	-	-	-	-	651	636	-	334	361	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	20.1	14.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	253	-	-	762	-	413
HCM Lane V/C Ratio	0.056	-	-	0.019	-	0.05
HCM Control Delay (s)	20.1	-	-	9.8	0	14.2
HCM Lane LOS	C	-	-	A	A	B
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	130	690	0	0	248	32	0	0	0	40	0	25
Future Vol, veh/h	130	690	0	0	248	32	0	0	0	40	0	25
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	141	750	0	0	270	35	0	0	0	43	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	305	0	0	750	0	0	1333	1337	750	1320	1320	288
Stage 1	-	-	-	-	-	-	1032	1032	-	288	288	-
Stage 2	-	-	-	-	-	-	301	305	-	1032	1032	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1256	-	-	859	-	-	131	153	411	134	157	751
Stage 1	-	-	-	-	-	-	281	310	-	720	674	-
Stage 2	-	-	-	-	-	-	708	662	-	281	310	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1256	-	-	859	-	-	108	124	411	114	127	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	124	-	114	127	-
Stage 1	-	-	-	-	-	-	227	250	-	582	674	-
Stage 2	-	-	-	-	-	-	682	662	-	227	250	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	0	40.8
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1256	-	-	859	-	-	169
HCM Lane V/C Ratio	-	0.113	-	-	-	-	-	0.418
HCM Control Delay (s)	0	8.2	0	-	0	-	-	40.8
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	1.9

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	717	2	38	162	84	2	55	36	62	59	4
Future Vol, veh/h	21	717	2	38	162	84	2	55	36	62	59	4
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	779	2	41	176	91	2	60	39	67	64	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	781	0	0	1164	1175	780	1180	1131	222
Stage 1	-	-	-	-	-	-	826	826	-	304	304	-
Stage 2	-	-	-	-	-	-	338	349	-	876	827	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	837	-	-	171	192	395	167	203	818
Stage 1	-	-	-	-	-	-	366	387	-	705	663	-
Stage 2	-	-	-	-	-	-	676	633	-	344	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1297	-	-	837	-	-	117	175	395	104	185	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	175	-	104	185	-
Stage 1	-	-	-	-	-	-	355	375	-	683	625	-
Stage 2	-	-	-	-	-	-	568	596	-	252	374	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.3	34.6	140.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	220	1297	-	-	837	-	-	136
HCM Lane V/C Ratio	0.459	0.018	-	-	0.049	-	-	0.999
HCM Control Delay (s)	34.6	7.8	0	-	9.5	0	-	140.3
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.2	-	-	7.1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	793	10	11	275	10	7	7	15	11	0	3
Future Vol, veh/h	2	793	10	11	275	10	7	7	15	11	0	3
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	862	11	12	299	11	8	8	16	12	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	310	0	0	873	0	0	1202	1206	868	1213	1206	305
Stage 1	-	-	-	-	-	-	872	872	-	329	329	-
Stage 2	-	-	-	-	-	-	330	334	-	884	877	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1250	-	-	773	-	-	161	184	352	159	184	735
Stage 1	-	-	-	-	-	-	345	368	-	684	646	-
Stage 2	-	-	-	-	-	-	683	643	-	340	366	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1250	-	-	773	-	-	158	180	352	144	180	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	158	180	-	144	180	-
Stage 1	-	-	-	-	-	-	344	367	-	682	634	-
Stage 2	-	-	-	-	-	-	667	631	-	317	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	23	27.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	231	1250	-	-	773	-	-	174
HCM Lane V/C Ratio	0.136	0.002	-	-	0.015	-	-	0.087
HCM Control Delay (s)	23	7.9	0	-	9.7	0	-	27.7
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	795	4	13	264	18	29
Future Vol, veh/h	795	4	13	264	18	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	864	4	14	287	20	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	868	0	1181	866
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	315	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	776	-	210	353
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	740	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	776	-	206	353
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	277	-	-	776	-
HCM Lane V/C Ratio	0.184	-	-	0.018	-
HCM Control Delay (s)	20.9	-	-	9.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	788	228	7	37	14
Future Vol, veh/h	4	788	228	7	37	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	857	248	8	40	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	256	0	-	0	1117	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	865	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1309	-	-	-	229	787
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	412	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1309	-	-	-	228	787
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	412	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1309	-	-	-	283
HCM Lane V/C Ratio	0.003	-	-	-	0.196
HCM Control Delay (s)	7.8	0	-	-	20.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	785	36	8	275	0	4	0	9	4	0	15
Future Vol, veh/h	0	785	36	8	275	0	4	0	9	4	0	15
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	853	39	9	299	0	4	0	10	4	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	892	0	0	1198	1190	873	1195	1209	299
Stage 1	-	-	-	-	-	-	873	873	-	317	317	-
Stage 2	-	-	-	-	-	-	325	317	-	878	892	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	760	-	0	162	188	349	163	183	741
Stage 1	0	-	-	-	-	0	345	368	-	694	654	-
Stage 2	0	-	-	-	-	0	687	654	-	343	360	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	760	-	-	157	185	349	157	180	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	185	-	157	180	-
Stage 1	-	-	-	-	-	-	345	368	-	694	645	-
Stage 2	-	-	-	-	-	-	662	645	-	333	360	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	20	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	254	-	-	760	-	416
HCM Lane V/C Ratio	0.056	-	-	0.011	-	0.05
HCM Control Delay (s)	20	-	-	9.8	0	14.1
HCM Lane LOS	C	-	-	A	A	B
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	133	690	0	0	248	35	0	0	0	48	0	28
Future Vol, veh/h	133	690	0	0	248	35	0	0	0	48	0	28
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	145	750	0	0	270	38	0	0	0	52	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	750	0	0	1344	1348	750	1329	1329	289
Stage 1	-	-	-	-	-	-	1040	1040	-	289	289	-
Stage 2	-	-	-	-	-	-	304	308	-	1040	1040	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1253	-	-	859	-	-	129	151	411	132	155	750
Stage 1	-	-	-	-	-	-	278	307	-	719	673	-
Stage 2	-	-	-	-	-	-	705	660	-	278	307	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1253	-	-	859	-	-	105	121	411	112	124	750
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	121	-	112	124	-
Stage 1	-	-	-	-	-	-	223	246	-	577	673	-
Stage 2	-	-	-	-	-	-	676	660	-	223	246	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	0	47.8
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1253	-	-	859	-	-	163
HCM Lane V/C Ratio	-	0.115	-	-	-	-	-	0.507
HCM Control Delay (s)	0	8.2	0	-	0	-	-	47.8
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	2.5

Intersection	
Int Delay, s/veh	46

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	165	8	40	758	168	9	102	47	42	86	2
Future Vol, veh/h	10	165	8	40	758	168	9	102	47	42	86	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	179	9	43	824	183	10	111	51	46	93	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1007	0	0	188	0	0	1255	1299	184	1289	1212	916
Stage 1	-	-	-	-	-	-	206	206	-	1002	1002	-
Stage 2	-	-	-	-	-	-	1049	1093	-	287	210	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	688	-	-	1386	-	-	148	161	858	141	182	330
Stage 1	-	-	-	-	-	-	796	731	-	292	320	-
Stage 2	-	-	-	-	-	-	275	290	-	720	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	688	-	-	1386	-	-	76	146	858	47	165	330
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	146	-	47	165	-
Stage 1	-	-	-	-	-	-	782	718	-	287	296	-
Stage 2	-	-	-	-	-	-	173	269	-	562	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	106.2	$ 376.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	181	688	-	-	1386	-	-	91
HCM Lane V/C Ratio	0.949	0.016	-	-	0.031	-	-	1.553
HCM Control Delay (s)	106.2	10.3	0	-	7.7	0	-	$ 376.6
HCM Lane LOS	F	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	7.5	0	-	-	0.1	-	-	11.1

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	247	4	3	945	22	4	1	7	2	0	7
Future Vol, veh/h	2	247	4	3	945	22	4	1	7	2	0	7
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	268	4	3	1027	24	4	1	8	2	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1051	0	0	272	0	0	1323	1331	270	1324	1321	1039
Stage 1	-	-	-	-	-	-	274	274	-	1045	1045	-
Stage 2	-	-	-	-	-	-	1049	1057	-	279	276	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	662	-	-	1291	-	-	133	154	769	133	157	280
Stage 1	-	-	-	-	-	-	732	683	-	276	306	-
Stage 2	-	-	-	-	-	-	275	302	-	728	682	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	662	-	-	1291	-	-	128	152	769	130	155	280
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	152	-	130	155	-
Stage 1	-	-	-	-	-	-	729	680	-	275	304	-
Stage 2	-	-	-	-	-	-	266	300	-	717	679	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	19.8	21.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	256	662	-	-	1291	-	-	223
HCM Lane V/C Ratio	0.051	0.003	-	-	0.003	-	-	0.044
HCM Control Delay (s)	19.8	10.5	0	-	7.8	0	-	21.9
HCM Lane LOS	C	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	11	20	817	14	18
Future Vol, veh/h	243	11	20	817	14	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	12	22	888	15	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	1202	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	932	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1287	-	204	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	383	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	197	769
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	370	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	339	-	-	1287	-
HCM Lane V/C Ratio	0.103	-	-	0.017	-
HCM Control Delay (s)	16.8	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	227	929	23	10	7
Future Vol, veh/h	15	227	929	23	10	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	247	1010	25	11	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1035	0	-	0	1302	1023
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	279	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	672	-	-	-	177	286
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	768	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	672	-	-	-	172	286
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	768	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	24.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	672	-	-	-	206
HCM Lane V/C Ratio	0.024	-	-	-	0.09
HCM Control Delay (s)	10.5	0	-	-	24.2
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	256	4	9	856	0	8	0	4	13	1	63
Future Vol, veh/h	0	256	4	9	856	0	8	0	4	13	1	63
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	278	4	10	930	0	9	0	4	14	1	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	282	0	0	1265	1230	280	1232	1232	930
Stage 1	-	-	-	-	-	-	280	280	-	950	950	-
Stage 2	-	-	-	-	-	-	985	950	-	282	282	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1280	-	0	146	178	759	154	177	324
Stage 1	0	-	-	-	-	0	727	679	-	312	339	-
Stage 2	0	-	-	-	-	0	299	339	-	725	678	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1280	-	-	113	175	759	151	174	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	175	-	151	174	-
Stage 1	-	-	-	-	-	-	727	679	-	312	334	-
Stage 2	-	-	-	-	-	-	231	334	-	721	678	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	29.8	24.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	158	-	-	1280	-	269
HCM Lane V/C Ratio	0.083	-	-	0.008	-	0.311
HCM Control Delay (s)	29.8	-	-	7.8	0	24.3
HCM Lane LOS	D	-	-	A	A	C
HCM 95th %tile Q(veh)	0.3	-	-	0	-	1.3

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	86	222	0	3	700	71	1	0	1	58	1	52
Future Vol, veh/h	86	222	0	3	700	71	1	0	1	58	1	52
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	241	0	3	761	77	1	0	1	63	1	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	838	0	0	241	0	0	1262	1271	241	1234	1233	800
Stage 1	-	-	-	-	-	-	427	427	-	806	806	-
Stage 2	-	-	-	-	-	-	835	844	-	428	427	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	796	-	-	1326	-	-	147	168	798	153	177	385
Stage 1	-	-	-	-	-	-	606	585	-	376	395	-
Stage 2	-	-	-	-	-	-	362	379	-	605	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	796	-	-	1326	-	-	112	145	798	137	153	385
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	145	-	137	153	-
Stage 1	-	-	-	-	-	-	524	506	-	325	393	-
Stage 2	-	-	-	-	-	-	307	377	-	523	506	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	23.6	49
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	196	796	-	-	1326	-	-	196
HCM Lane V/C Ratio	0.011	0.117	-	-	0.002	-	-	0.616
HCM Control Delay (s)	23.6	10.1	0	-	7.7	0	-	49
HCM Lane LOS	C	B	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0	0.4	-	-	0	-	-	3.5

Intersection	
Int Delay, s/veh	48.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	169	8	39	758	169	9	102	48	45	86	2
Future Vol, veh/h	10	169	8	39	758	169	9	102	48	45	86	2
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	184	9	42	824	184	10	111	52	49	93	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1008	0	0	193	0	0	1259	1303	189	1292	1215	916
Stage 1	-	-	-	-	-	-	211	211	-	1000	1000	-
Stage 2	-	-	-	-	-	-	1048	1092	-	292	215	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	687	-	-	1380	-	-	147	161	853	140	181	330
Stage 1	-	-	-	-	-	-	791	728	-	293	321	-
Stage 2	-	-	-	-	-	-	275	291	-	716	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	687	-	-	1380	-	-	76	147	853	~ 47	165	330
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	147	-	~ 47	165	-
Stage 1	-	-	-	-	-	-	777	715	-	288	298	-
Stage 2	-	-	-	-	-	-	174	270	-	558	712	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	104.5	$ 399.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	687	-	-	1380	-	-	90
HCM Lane V/C Ratio	0.944	0.016	-	-	0.031	-	-	1.606
HCM Control Delay (s)	104.5	10.3	0	-	7.7	0	-	$ 399.4
HCM Lane LOS	F	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	7.4	0	-	-	0.1	-	-	11.5

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	255	4	3	945	22	4	1	7	2	0	7
Future Vol, veh/h	2	255	4	3	945	22	4	1	7	2	0	7
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	277	4	3	1027	24	4	1	8	2	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1051	0	0	281	0	0	1332	1340	279	1333	1330	1039
Stage 1	-	-	-	-	-	-	283	283	-	1045	1045	-
Stage 2	-	-	-	-	-	-	1049	1057	-	288	285	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	662	-	-	1282	-	-	131	153	760	131	155	280
Stage 1	-	-	-	-	-	-	724	677	-	276	306	-
Stage 2	-	-	-	-	-	-	275	302	-	720	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	662	-	-	1282	-	-	126	151	760	128	153	280
Mov Cap-2 Maneuver	-	-	-	-	-	-	126	151	-	128	153	-
Stage 1	-	-	-	-	-	-	721	674	-	275	304	-
Stage 2	-	-	-	-	-	-	266	300	-	709	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	20.1	22
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	252	662	-	-	1282	-	-	222
HCM Lane V/C Ratio	0.052	0.003	-	-	0.003	-	-	0.044
HCM Control Delay (s)	20.1	10.5	0	-	7.8	0	-	22
HCM Lane LOS	C	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	251	11	18	818	13	17
Future Vol, veh/h	251	11	18	818	13	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	12	20	889	14	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	285	0	1208	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	929	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1277	-	202	760
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1277	-	196	760
Mov Cap-2 Maneuver	-	-	-	-	196	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	338	-	-	1277	-
HCM Lane V/C Ratio	0.096	-	-	0.015	-
HCM Control Delay (s)	16.8	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	231	949	22	9	6
Future Vol, veh/h	15	231	949	22	9	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	251	1032	24	10	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1056	0	-	0	1327	1044
Stage 1	-	-	-	-	1044	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	659	-	-	-	171	278
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	659	-	-	-	166	278
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	24.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	659	-	-	-	198
HCM Lane V/C Ratio	0.025	-	-	-	0.082
HCM Control Delay (s)	10.6	0	-	-	24.8
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	264	4	9	856	0	8	0	4	13	1	63
Future Vol, veh/h	0	264	4	9	856	0	8	0	4	13	1	63
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	287	4	10	930	0	9	0	4	14	1	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	291	0	0	1274	1239	289	1241	1241	930
Stage 1	-	-	-	-	-	-	289	289	-	950	950	-
Stage 2	-	-	-	-	-	-	985	950	-	291	291	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1271	-	0	144	175	750	152	175	324
Stage 1	0	-	-	-	-	0	719	673	-	312	339	-
Stage 2	0	-	-	-	-	0	299	339	-	717	672	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1271	-	-	112	172	750	149	172	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	172	-	149	172	-
Stage 1	-	-	-	-	-	-	719	673	-	312	334	-
Stage 2	-	-	-	-	-	-	231	334	-	713	672	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	30.2	24.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	156	-	-	1271	-	268
HCM Lane V/C Ratio	0.084	-	-	0.008	-	0.312
HCM Control Delay (s)	30.2	-	-	7.9	0	24.4
HCM Lane LOS	D	-	-	A	A	C
HCM 95th %tile Q(veh)	0.3	-	-	0	-	1.3

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	94	221	0	3	697	93	1	0	1	63	1	54
Future Vol, veh/h	94	221	0	3	697	93	1	0	1	63	1	54
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	240	0	3	758	101	1	0	1	68	1	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	859	0	0	240	0	0	1289	1309	240	1260	1259	809
Stage 1	-	-	-	-	-	-	444	444	-	815	815	-
Stage 2	-	-	-	-	-	-	845	865	-	445	444	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	782	-	-	1327	-	-	141	159	799	147	171	380
Stage 1	-	-	-	-	-	-	593	575	-	371	391	-
Stage 2	-	-	-	-	-	-	357	371	-	592	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	782	-	-	1327	-	-	104	135	799	129	145	380
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	135	-	129	145	-
Stage 1	-	-	-	-	-	-	503	488	-	315	389	-
Stage 2	-	-	-	-	-	-	300	370	-	502	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0	24.8	59.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	782	-	-	1327	-	-	185
HCM Lane V/C Ratio	0.012	0.131	-	-	0.002	-	-	0.693
HCM Control Delay (s)	24.8	10.3	0	-	7.7	0	-	59.5
HCM Lane LOS	C	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0.4	-	-	0	-	-	4.2