Sixteenth Land Holdings Inc.
4134 16th Avenue Lands
City of Markham

Traffic Impact Assessment

4134 16th Avenue

West Side Plan of Subdivision

East Side Plan of Subdivision

October 2016

Poulos Chung

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Appendices

Only certain appendices are printed out, the remainder are found on the accompanying CD.

1 Introduction

Sixteenth Land Holdings Inc. has retained Poulos & Chung Limited to prepare this Traffic Impact Study in support of Draft Plans of Subdivision (West Side and East Side) application to permit the development of a residential community on the subject property.

The property is municipally known as 4134 16th. Avenue, in the City of Markham, Region of York. The property is located in Part lots 16, 17 and 18, Concession 5. Except for an area adjacent to Kennedy Road, the balance of the property is currently used by its former owner York Downs Golf & Country Club for a golf course.

The location of the subject Property is shown in Figure 1.1.

The property is a total of 168.64 hectares (416.72 acres), and is located on the north side of 16th. Avenue, on the west side of Kennedy Road, and has a small amount of frontage onto the east side of Warden Avenue as well. There is existing residential development surrounding the property on all sides.

A tributary of the Berczy Creek crosses the western portion of the property, and the Bruce Creek traverses the property in a roughly north / south direction, bisecting the property into west and east tableland areas.

The current golf course use has been in operation since York Downs Golf & Country Club opened on site in the early 1970's. The current Official Plan designation of 'Private Open Space' for the areas outside of the valley lands reflects this historic golf course use.

Sixteenth Land Holdings Inc. intends to develop the property for a residential community and is submitting an OPA to redesignate the developable portion of the property from 'Private Open Space' to appropriate urban residential designations to permit the development of residential uses. A separate Transportation Assessment Study has also been filed in support of the OPA application.

The proposed residential development is detailed in the two draft plan of subdivision applications that accompany this Transportation Impact Study. There is one draft plan of subdivision for the east portion of the property and one for the west portion of the property. The west draft plan of subdivision also contains the valley lands associated with both the Berczy creek and the Bruce creek. References in this report to the two draft plans or to specific lots / blocks will include 'East' or 'West' to denote the appropriate area.

The East draft plan of subdivision contains a total of 1,257 dwelling units

The West draft plan of subdivision contains a total of 1,164 dwelling units.

This submission builds upon the findings of the Transportation Assessment Report and the further investigations conducted by the Project Team Members.

This submission:

- Analyzes three Stages of Development for the subject lands;
  - The timing of the staged development is:
    - Horizon Year 2021;
    - Horizon Year 2024;
    - Horizon Year 2026.
- Respects the planned improvements to the Transportation System identified by York Region;
- Incorporates planned area growth;
- Conducts detailed analyses of the entire bounding roadway network including primary arterial road intersections and intersections providing access to the subject lands.

The following sections document the detailed analyses undertaken and present the conclusions and recommendations.

2 Basis of Analysis

To conduct this Traffic Impact Study, Poulos & Chung Limited:

- Conducted turning movement counts at all critical intersections surrounding the Concession Block;
- Obtained available York Region Transit and road information;
- Obtained EMME II transportation model outputs form York Region;
- Used the Highway Capacity Manual and the Institute of Transportation Engineers (ITE), Trip Generation Manual 9th Edition to estimate travel demands my mode of transportation;
- Obtained existing signal timings;
- Used the Synchro Software Program to analyze and evaluate intersection performance;
- Used the Traffic Impact Study Guidelines published by York Region and the City of Markham as the basis for conducting the analysis.

Several components of the information obtained were synthesized for use in the analysis. This critical information is documented below.

EMME II Transportation Model Outputs

One of the most important and primary inputs used in this analysis is the EMME II Transportation Model Outputs provided by York Region. These outputs provided the critical information to permit assessment of existing concession block traffic flows. In addition these outputs permitted verification of the forecast background boundary road traffic flows for horizon years 2021, 2024 and 2026.

This was accomplished by:

- Using the forecast population and employment numbers in the planned growth areas in close proximity to the 4134 16th Avenue lands;
- Determining the vehicle travel demand generated by the planned growth areas (including the Markham Future Urban Area to the north);
- Identifying the changing modal split characteristics and AM peak hour directions of travel;
- Hand assigning the AM peak hour traffic flows to the boundary roads from the planned growth areas;
- Adding the existing traffic volumes to the traffic flows generated by the planned growth areas in the roadway AM peak hour;
- Comparing the hand analysis to the EMME II horizon year 2021 outputs.

The horizon year 2021 outputs are considered to be the most accurate and most useful to conduct the evaluation and assessment of internal roadway network Options. Although 2031 EMME II forecasts are available, it is evident that they do not reflect the final land use traffic zone allocation of population and employment for the Future Urban Area to the north. Therefore an adjusted growth rate was applied for horizon years 2024 and 2026.

This calibration / verification analysis is presented in Appendix A.

Figure A1 presents the EMME II traffic zones and the population and employment numbers for the planned growth areas.

Figure A2 presents the changing usage of available modes of transportation between 2011 and 2021. In addition the 2021 AM peak hour distribution of vehicle trips for the 4134 16th Avenue lands and the planned growth areas is identified.

Figure A3 presents the vehicle trip generation characteristics for the 4134 16th Avenue lands and the planned growth areas. The Trip Generation Manual, 9th Edition published by the Institute of Transportation Engineers was used to estimate vehicle characteristics generated by the 4134 16th Avenue lands. The vehicle trip generation characteristics of the West and East Villages of Angus Glen are based on actual traffic counts.

The total AM peak hour traffic flows resulting from the 4134 16th Avenue lands, West and East Villages of Angus Glen and the planned growth areas were distributed and hand assigned to the boundary road network.

This total development traffic flow was then compared to the EMME II outputs.

Figure A4 presents the comparison of the hand analysis (PC model) to the EMME II outputs. The comparison is done with each of the four (4) major Regional arterial roads bounding the 4134 16th Avenue lands.

It is evident when comparing segments of each arterial road that the forecasts determined by the hand analysis compare very well with the EMME II outputs. Therefore the projected traffic flows and intersection turning movements are considered to be accurate and acceptable for use in the analysis.

Concession Block Cut Through and Diverted Traffic Flows

The development of the 4134 16th Avenue lands in effect provides the opportunity to complete the internal roadway network not only for the southern half of the concession block but for the northern half which contains the Villages of Angus Glen.

Such a degree of accessibility and connectivity directly influences existing travel demands and patterns, especially from:

- The East and West Villages of Angus Glen immediately to the north;
- The Berczy Community immediately to the east, and;
- Background traffic flows on Kennedy Road and Warden Avenue.

The York Region EMME II transportation model provided 2011 and 2021 traffic flow outputs. These outputs were reviewed in an attempt to understand the changing flow patterns resulting from both the inclusion of 4134 16th Avenue development and connections to either Warden Avenue or Major Mackenzie Drive.

Once the general traffic flow pattern was understood a hand analysis was conducted to determine traffic flows (non – 4134 16th Avenue traffic) that would find it convenient to use the internal available roadway network.

This permitted a comparison and validation of hand assigned traffic flows versus the EMME II outputs. This analysis assumed a connection to 16th Avenue via the extension of Bur Oak Avenue.

Figure A5 examines the extension of Bur Oak Avenue to connect with 16th Avenue.

The EMME II outputs for 2011 and 2021 indicate that a total of approximately 621 vehicle trips would find it convenient to access 16th Avenue when the 4134 16th Avenue development is considered with a connection to 16th Avenue.

The lower right side of Figure A5 summarizes the hand assigned traffic flows taking into account the extension and connection to 16th Avenue. Although the hand assignment results in a slightly higher number, it is considered reasonable and serves as validation when compared to the EMME II forecasts.

It is therefore concluded that when considering the extension and connection of Bur Oak Avenue that all vehicle demand traffic flows including existing, cut through and 4134 16th Avenue development has been properly accounted for.

The hand assignments for 2021 indicate that a total of approximately 673 vehicle trips would find it convenient to access 16th Avenue when the 4134 16th Avenue development is considered with a connection to 16th Avenue. Of this total approximately 180 vehicles would be cut through and diverted traffic, southbound in the AM roadway peak hour and northbound in the PM peak hour.

The fact that there is cut through / diverted traffic and its magnitude by direction is not considered unreasonable or undesirable. It is the result of completing a concession block road network and affording all residents alternate and more direct choices of travel direction.

These traffic flows were incorporated into the total background traffic flows for each of the horizon years examined.

The available EMME II outputs were also used to estimate 2024 and 2026 background traffic flows.

Traffic flow growth (non subject lands) consists of:

- growth in existing traffic flows, and;
- growth due to planned population and employment.

The above EMME II analysis shows that this traffic flow growth has been accurately determined for 2021.

To determine the growth in background traffic (existing traffic and area planned growth) a detailed analysis was undertaken and is summarized in Figure A6.

The left side of Figure A6 summarizes the EMME II outputs between 2011 and 2031. A detailed analysis was undertaken to estimate the growth rate beyond 2021. Since the growth between 2011 and 2021 has been established, a hand analysis was undertaken to determine the growth between 2021 and 2031. As shown in the Figure the analysis was based upon the EMME II outputs which summarized growth by key corridor.

The right hand side of Figure A6 summarizes the determined growth rate up to 2021 and then between 2021 and 2031.

The growth rate determined between 2021 and 2031 was then applied to through a step wise analysis to determine the specific 2024 and 2026 background traffic flow forecasts.

Subject Lands Transit Modal Split

York Region Transit (YRT) provides extensive transit service throughout the City of Markham. A hierarchy of service exists, including:

- Local transit services within neighbourhoods;
- Higher frequency transit service on arterial roads;
- Higher order transit service in the VIVA Highway 7 and Enterprise Drive corridors.

In addition to the above service, GO Transit provides a heavy rail commuter service on the Stouffville GO Rail corridor. The train service concentrated in the peak period peak direction of travel is complemented by all day GO Bus service. Metrolinx has announced within a ten year horizon period that all day two - way service will be introduced between Unionville GO Rail Station and Union Station in downtown Toronto.

Figure 2.1 identifies the existing York Region Transit service route structure. Also identified are the locations of the Unionville, Centennial and Mount Joy GO Rail Stations.

It is evident that route structure modifications and additions can directly connect the 4134 16th Avenue lands to:

- Each of the GO Rail Stations;
- The VIVA Highway 7 rapid transit line;
- The major area attractors and generators including Markham Stouffville Hospital, Markville Mall and the future York University Campus.

Available data from York Region Transit has been reviewed to ascertain existing area transit ridership and to assist in determining the appropriate transit modal split to use in the transportation assessments. Transportation for Tomorrow Survey results indicate in 2011 that during the roadway AM peak period that seven (7) per cent of all trips made by residents of Ward 3 (Area immediately south of the 4134 16th Avenue lands) was on transit. Since 2011 it is evident that there have been on-going increases in transit usage such that, about nine (9) percent of all trips made by residents are currently on transit in the same time period. It is estimated that future growth areas, such as the FUA in the City of Markham will achieve a transit modal split of 17%. It is very likely that the 4134 16th Avenue lands will also secure such a transit modal split level by 2031.

In recognition of the existing and forecast transit modal split as defined above it is reasonable to conclude that a transit modal split for the 4134 16th Avenue lands should be in the order of thirteen (13) percent by the year 2021. Therefore this modal split has been applied to the analysis. This transit modal split has also been applied to the 2024 and 2026 analysis.

The existing transit service can be modified to provide direct service to the 4134 16th Avenue lands. The available bounding arterial roads also represent an opportunity to modify / introduce new services to better serve existing neighbourhoods, 4134 16th Avenue lands and future growth areas.

It is evident that the 4134 16th Avenue lands would be well within a comfortable walk distance of 400 meters to either local transit or higher order transit on the arterial roads. Such a transit network has the capability to directly connect with other major transit services and major attractors and generators within the City.

Travel Demand Management

The subject lands will strongly support the Travel Demand Management (TDM) program being brought forward by York Region and the City of Markham.

New developments in York Region have initiated the “My Trip” travel demand management initiative. The subject lands intend to participate in this program.

As will be demonstrated in later sections of this report the subject lands have already formulated a very strong Active Transportation System containing physical infrastructure supporting bicycles, trails, paths and sidewalks. In combination with other direct measures to be further defined such as “Presto Card” contributions, information packages, monitoring and follow – up survey efforts the subject lands will deliver a strong and effective TDM plan.

3 The Transportation Systems

3.1 Transit

Figure 2.1 identifies the existing York Region Transit services within the vicinity of the subject lands. It is evident that the existing services, especially the local York Region Transit routes can be modified to provide extended services to the subject lands.

Almost the entire subject land area will be within a comfortable walk distance to either an arterial boundary road service or to an internal service route.

Transit services will be further expanded and enhanced throughout York Region.

Of importance to the subject lands is the continual sequence of transit improvements. These improvements are illustrated in Appendix B using recent mapping prepared by York Region in their current update of the Regional Transportation Master Plan.

Figure B1 illustrates the proposed Transit Network for 2017 to 2021.

Figure B2 illustrates the proposed Transit Network for 2022 to 2026.

Figure B3 illustrates the proposed Transit Network for 2027 to 2031.

It is evident that the subject lands will be provided with excellent service providing direct connections to all local employment areas as well as connections to major higher order transit stations.

3.2 Roads

The existing roadway network and its primary control systems are presented in Figure 3.1.

It is noted that all arterial road intersections have exclusive left and right turn lanes.

Of importance to the subject lands is the continual sequence of road improvements. These improvements are illustrated in Appendix C using recent mapping prepared by York Region in their current update of the Regional Transportation Master Plan.

Figure C1 illustrates the planned Road Network for 2017 to 2021;

Figure C2 illustrates the planned Road Network for 2022 to 2026;

Figure C3 illustrates the planned Road Network for 2027 to 2031.

Of importance to the subject lands are the planned improvements in 2022 to 2026. These improvements essentially are in the same time frame as the staging plan for the subject lands.

Accordingly, this analysis analyzed the following development stages with associated available roadway conditions:

- Stage 1 – Assessed with the existing road conditions;
- Stage 2 – Assessed with both the existing roads conditions and then with the planned road improvements;
- Stage 3 – Assessed with the planned road improvements.

Figure 3.2 illustrates the collector and local road network under the jurisdiction of the City of Markham.

There are no planned improvements or additions to this local roadway network.

3.3 Regional Cycling Network

Of importance to the subject lands is the continual addition to the cycling network.

These improvements are illustrated in Appendix D using mapping prepared by York Region in their current update of the Regional Transportation Master Plan.

Figure D1 illustrates the planned Ten Year Cycling Network.

This cycling network is integrated with the City of Markham trail, path and bicycle network.

How the subject lands integrates with this total active transportation network is shown in section 4 of this report.

3.4 Subject Land Internal Roadway Network and Access

In September 2016 Poulos & Chung Limited published the report entitled “Sixteenth Avenue Holdings Inc., Transportation Assessment 4134 16th Avenue Lands, City of Markham.”

This report analyzed and evaluated four internal roadway network and access options for the subject property. It was submitted as part of an Official Plan Amendment application.

The report formed part of a detailed analysis and evaluation process completed by the entire subject lands Project Team.

Through this evaluation process an optimum preferred internal roadway network and access plan was brought forward.

The recommended subject land internal roadway network and access plan is shown in Figure 3.3.

Also shown in Figure 3.3 is the available internal roadway network and access pattern available by stage of development.

The available internal roadway network and access plan available by stage was analyzed with the available boundary road conditions.

4 Travel Demand Management

4.1 Active Transportation System

The 4134 16th Avenue lands are to be primarily a residential development.

Providing mobility options was carefully and deliberately examined from the outset of planning for the subject lands. The provision of carefully located physical infrastructure was constantly reviewed in order to assure that direct and efficient connections were provided to:

- All internal attractors and generators;
- Planned transit bus stops within the subject lands and to the arterial road transit services;
- City of Markham trail and path system;
- Planned bicycle facilities on the bounding arterial roads.

The active transportation system for the subject lands is shown in Figure 4.1.

It is noted that this active transportation system represents only the "Hard" component of a comprehensive Travel Demand Management Plan to be formulated for the subject lands.

Further Travel Demand Management Plans will be prepared for each plan of subdivision application.

These Plans will:

- Detail the physical infrastructure components to be built as part of the overall active transportation system. Additional "Hard" infrastructure to be brought forward will include:
  - Bicycle racks at the bus stop locations;
  - Benches along the trail and path network.

- Identify up- to-date "Soft" measures to support the travel demand management plan initiative including:
  - Identification of Development Charge amount to be allocation for travel demand management;
  - Formation of Community information plans and maps;
  - Contribution to Presto for transit update;
  - Commitment to assist in the distribution of:
    - Information packages;
    - Monitoring programs;
    - Follow up surveys.

4.2 Potential Local Transit

Figure 4.2 identifies the potential to modify existing local transit services to directly serve the subject lands. The local transit service could utilize the extension of Bur Oak Avenue to directly circulate within the subject lands.

Figure 4.3 identifies the potential bus stop locations within the subject lands.

It is evident in combination with the bounding arterial road transit service that the entire population within the subject lands would have a walk of five minutes or less to board a bus.

4.3 Estimated Active Transportation Demand

The techniques contained in the Highway Capacity Manual were applied in order to estimate the amount of pedestrian, bicycle and transit demand generated by the subject lands during the typical weekday roadway peak periods.

It is estimated that approximately:

- 120 pedestrian trips would be generated focused primarily on school, shopping and recreational purposes during each of the typical weekday roadway peak periods;
- 25 bicycle trips would be generated primarily focused on school, shopping and work purposes during each of the typical weekday roadway peak periods, and:
- 40 bicycle trips would be generated primarily focused on accessing available transit services during each of the typical weekday roadway peak periods;
- 175 person trips would be generated and walk to transit bus stops during the weekday roadway peak periods.

The above estimates are provided for planning purposes and were not used to reduce the generated vehicle trip making during the typical roadway peak hours. Only the walk component to transit was used to reduce vehicle trip making during the typical weekday roadway peak hours.

5 Proposed Development

5.1 Draft Plans of Subdivision

Two Draft Plans of Subdivision have been prepared for the subject land, one for the West Side and another for the East Side.

The East Side Plan of Subdivision is shown in Figure 5.1.

It is to contain:

- 1,257 dwelling units.

The West Side Plan of Subdivision is shown in Figure 5.2.

It is to contain:

- 1,164 dwelling units;
- Approximately 100,000 square feet of commercial space.

5.2 Development Staging

The subject lands are to be developed in three (3) stages.

The stages and development statistics are summarized in the following table.

Table 1

Subject Lands
Development Staging

Development Stage	Time Period	Single Family Dwelling Unit	Townhouse Dwelling Unit	Multiple Dwelling Unit Building	Total
1 1 East	2016 – 2021	 147	 184	 151	 482
2 2 East 1 West	2022 – 2024	 185 84	 38 126		 223 210
3 3 East 2 West 3 West	2024 - 2026	 363 344 166	 189 134	 510	 552 278 676
Total					2,421

It is noted that Stage 3 also contains approximately 100, 000 square feet of commercial floor space in the West Side Draft Plan of Subdivision.

The staging plan is shown in Figure 5.3.

5.3 Vehicle Generation by Development Stage

Vehicles generated by each development stage were determined using the vehicle trip generation rates published in the Trip Generation Manual, 9th Edition published by the Institute of Transportation Engineers. The only reduction in the vehicle generation rate occurred for:

- Transit modal split reduction of 13 percent;
- By – pass trips for the commercial floor space.

Figure 5.4 presents the vehicle trips generated for: Stage 1, Stage 2 and Stage 3.

5.4 Vehicle Trip Distribution

The vehicle trip distribution pattern is based upon:

- Transportation for Tomorrow Survey results;
- Existing traffic flow patterns, and;
- EMME II outputs.

This information was reviewed and consolidated to formulate the vehicle trip distribution patterns presented in Figure 5.5. A residential and commercial distribution pattern is provided.

5.5 Development Traffic Flows by Stage

The determined development traffic generated by stage was assigned to the identified available internal roadway network and access plan.

All development traffic was assigned towards their primary direction of travel.

Figure 5.6 presents the Stage 1 development traffic flows.

Figure 5.7 presents the Stage 2 development traffic flows.

Figure 5.8 presents the Stage 3 development traffic flows.

Poulos & Chung Limited determined peak hour traffic flows on each of the internal primary roads. This was accomplished by creating internal traffic zones, estimating the vehicle trips generated and assigning the vehicle demand to the primary direction of travel. As this vehicle demand orientated itself towards the bounding arterial roads the traffic flow on the internal road network could be accumulated.

This accumulated traffic flow volume was determined for the typical weekday roadway peak hours and for a typical day. The accumulated traffic flow also included the defined cut through and diverted traffic flows as identified in Section 2.

This analysis enabled verification of the internal roadway role, function and classification.
Figure 5.9 presents the traffic flows and the resultant classification of the internal collector and local roadway network.

The identified major and minor collector road network provides sufficient vehicle capacity to serve all peak traffic flow demands in a calmed and efficient manner. One lane of traffic is provided in each direction of travel. At the intersection with the bounding arterial road the following is provided:

- One inbound traffic lane;
- One exclusive outbound left turn lane;
- One exclusive through / right turn lane;
- One exclusive left turn lane on the arterial road.

6 Road Attributes

It is evident within the built out time period of the subject lands that the boundary roads of 16th Avenue and Kennedy Road (south of 16th Avenue) will be improved.

Each stage was examined and analyzed in accordance to the likelihood of the boundary road improvements to be available.

Figure 3.3 illustrates the available internal roadway network and access pattern available by stage of development. Appendix C presents the anticipated timing of the proposed improvements to the boundary roads of 16th Avenue and Kennedy Road (south of 16th Avenue).

It is evident, based upon the timing of planned road improvements presented in Appendix C that the horizon period 2022 to 2026 represents the key transitional period. To respect this transitional period multiple analyses were conducted. The analyses also respected the existing signal timings and then adjusted to assess the opportunity to optimize the signal timing.

To account for: the staging of development, the sequential planned boundary road improvements and the potential for signal optimization, five (5) scenarios were analyzed.

The following table summarizes the sequential analysis undertaken based upon the introduction timing of the boundary road improvements.

Table 2

Sequential Traffic Impact Analysis
Respecting the Planned Boundary Road Improvements

Scenario	Development Stage	Year	Signal Timing	Road Attribute
A	1	2021	Existing	Existing
B	1	2021	Optimized	Existing
C	2	2024	Optimized	Existing
D	2	2024	Optimized	Improved
E	3	2026	Optimized	Improved

The road attributes for both the internal roads and the boundary roads were determined. A common attribute is the posted speed limits on the bounding arterial roads.

The other attributes determined include:

- Number of through vehicle lanes;
- Availability of exclusive turning lanes;
- Traffic control devices;
- Synchro Software Program inputs reflecting roadway physical attributes.

Several Figures have been prepared to illustrate the road attributes for each scenario analyzed.

Figure 6.1 presents the road attributes for Scenarios A, B and C.

Figure 6.2 presents the road attributes for Scenarios D and E.

7 Background Traffic Assessment

7.1 Existing Conditions

Poulos & Chung Limited undertook an extensive data collection program in October 2015. Six (6) or Eight (8) hour vehicle / pedestrian counts at key intersections around the Concession Block were completed on a typical weekday.

The existing traffic flows and vehicle intersection traffic volumes are shown in Figure 7.1.

The Synchro Software Program was used to conduct detailed analyses of each intersection.

The analysis was conducted using the existing signal timing and phases.

Appendix E contains the detailed Synchro Software analysis sheets for each intersection analyzed.

A synthesis of the detailed analysis presenting (for the Existing condition) overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 7.2 (far left side).

Also presented in the Figure are individual vehicle movements which are experiencing a volume to capacity ratio greater than 0.85.

Appendix F presents a description of the alpha numeric nomenclature used to define intersection operating conditions.

Upon examining Figures 7.1 & 7.2 it can be concluded that:

- That all boundary roads experience fairly high vehicle flows in the peak hour peak direction of travel;
- The most heavily used of the boundary roads in the peak hour peak direction of travel are Major Mackenzie Drive and 16th Avenue then followed by Warden Avenue and Kennedy Road;
- It appears that the peak hour peak direction of travel is focused towards the Highway 404 and 407 Corridors and the employment areas located to the south;
- Most of the exclusive left turn lanes are experiencing some vehicle delay and congestion, requiring approximately two signal cycles to clear the intersection during the peak 15 to 30 minute period;
- Major Mackenzie Drive and 16th Avenue accommodating the highest vehicle flows impart delay and congestion to through traffic flows at the signalized intersections;
- York Region has spent effort on updating the signal timings to accommodate the existing traffic flows in a balanced manner, reflecting the care and attention being given to monitoring these corridors;
- Although there are vehicle delays the magnitude of the delay is considered reasonable and reflective of the amount of flow that is being accommodated.

7.2 2021 Background Conditions

The 2021 EMME II forecast identifying background vehicle traffic flows, as presented in Section 2 were used to determine 2021 background traffic flows.

The resultant forecast 2021 background traffic flows are shown in Figure 7.3.

These volumes were used in both the Scenario A and Scenario B analyses.

The Synchro Software program was used to conduct detailed analyses of each intersection for each scenario.

The analysis conducted assumed the following for each of the scenarios (as outlined in section 6, table 2):

- Scenario A:
  - Existing road attributes;
  - Existing traffic signal timing.
- Scenario B:
  - Existing road attributes;
  - Optimized traffic signal timing.

Appendix G contains the detailed Synchro Software outputs.

A summary of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 7.2 for both scenarios.

7.3 2024 Background Conditions

The EMME II model outputs provide traffic flow forecasts for 2021 and 2031. As shown in Section 2 and Figure A6 appropriate growth rates were determined and applied to 2021 traffic flows to determine 2024 traffic flows.

The resultant forecast 2024 background traffic flows are shown in Figure 7.4.

These volumes were used in both the Scenario C and Scenario D analyses.

The Synchro Software program was used to conduct detailed analyses of each intersection for each scenario.

The analysis conducted assumed the following for each of the scenarios (as outlined in section 6, table 2):

- Scenario C:
  - Existing road attributes;
  - Optimized traffic signal timing.

- Scenario D:
  - Improved road attributes;
  - Optimized traffic signal timing.

Appendix H contains the detailed Synchro Software outputs.

A summary of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 7.2 for both scenarios.

7.4 2026 Background Conditions

The EMME II model outputs provide traffic flow forecasts for 2021 and 2031. As shown in Section 2 and Figure A6 appropriate growth rates were determined and applied to 2021 traffic flows to determine 2026 traffic flows.

The resultant forecast 2026 background traffic flows are shown in Figure 7.5.

These volumes were used in the Scenario E analysis.

The Synchro Software program was used to conduct detailed analyses of each intersection.

The analysis conducted assumed:

- Improved road attributes;

- Optimized traffic signal timing.

Appendix I contains the detailed Synchro Software outputs.

A synthesis of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 7.2.

7.5 Background Conditions Summary

The background traffic flows are discussed under two roadway attribute conditions. The first condition reflects the existing roadway attributes while the second condition reflects the planned improvements to 16th Avenue and Kennedy Road. This assessment therefore considers the available road attributes with only existing traffic flows plus growth in traffic flows resulting from planned local and regional area growth.

The existing roadway attributes have been examined in detail. Years 2021 and 2024 were examined using existing roadway attributes. The analysis findings are summarized below:

- In 2021 continued area growth results in:

  - A continual degradation of the level of service, vehicle delay and volume to capacity ratios during the peak hours peak direction of travel at the primary boundary road intersections;
  - Existing signal timings have to be optimized to match the continuing growth in background traffic flows;
  - Optimization of signal timing does materially improve overall intersection operations during the AM and PM roadway peak hours, however;
  - Generally speaking the pace of operational degradation by 2021 on all of the boundary roads during the peak hour peak direction of travel matches the on–going yearly increase in background traffic flows due to local and regional growth;
  - Without any of the planned roadway improvement attributes, traffic flows on each of the boundary road corridors will continue to experience operational degradation resulting in peak directional flows which take exceedingly long to dissipate;
  - It appears that Warden Avenue during the roadway peak hours attracts more of the background traffic flow than Kennedy Road. A contemplated reason for this is that the background traffic flows are attracted to Warden Avenue because of the six lane cross – section between Highway 7 and 14th Avenue. This cross –section leads directly to Highway 407 and also provides direct and convenient access to the employment areas in the 14th Avenue corridor;
  - It appears that Major Mackenzie Drive is attracting slightly more background traffic flows during the roadway peak hours than 16th Avenue. This is likely because the background flows are to / from a further distance away and have the opportunity to use Major Mackenzie Drive which has better operating conditions due to (at present) less friction from side roads.

- In 2024 continued area growth results in:

    - A continual degradation of the level of service, vehicle delay and volume to capacity ratios during the peak hours peak direction of travel at the primary boundary road intersections;
    - Existing signal timings have to be optimized to match the continuing growth in background traffic flows;
    - Optimization of signal timing does materially improve overall intersection operations during the AM and PM roadway peak hours, however;
    - Generally speaking the pace of operational degradation by 2024 on all of the boundary during the peak hour peak direction of travel matches the on – going yearly increase in background traffic flows due to local and regional growth;
    - Without any of the planned roadway improvement attributes traffic flows on each of the boundary road corridors will continue to experience operational degradation resulting in peak directional flows which take longer than one hour to clear;
    - At this time period depending upon the peak hour peak directional flow examined both though volume traffic flows and exclusive left turn volume flows are significantly degraded and experience delays exceeding (in the peak period) at least two cycles to clear;
    - It appears that Warden Avenue during the roadway peak hours continues to attract more of the background traffic flow than Kennedy Road. A contemplated reason for this is that the background traffic flows are attracted to Warden Avenue because of the six lane cross – section between Highway 7 and 14th Avenue. This cross –section leads directly to Highway 407 and also provides direct and convenient access to the employment areas in the 14th Avenue corridor;
    - It appears that Major Mackenzie Drive continues to attract slightly more background traffic flows during the roadway peak hours than 16th Avenue. This is likely because the background flows are to / from a further distance away and have the opportunity to use Major Mackenzie Drive which has better operating conditions due to (at present) less friction form side roads.

It is interesting to note that even with the continuation of the existing roadway attribute condition to 2021 and 2024 that the intersections providing access to existing developments continue to operate at good levels of service.

The planned new roadway attributes have been examined in detail. Years 2024 and 2026 were examined using improved roadway attributes. The analysis findings are summarized below:

- Introducing the planned road improvement attributes to 16th Avenue and Kennedy Road south of 16th Avenue identify dramatic improvements to the operations of all boundary road intersections;
- Significant operational improvements occur during both roadway peak hours not only to the overall intersection level of service but to the individual through and exclusive left turn vehicle movements;

- The analysis does show some over capacity conditions in the roadway peak hours for the primary intersections on Major Mackenzie Drive at 16th Avenue and Kennedy Road. This is not unexpected since:

    - The background traffic flows contain flows from the North Markham Future Urban Area and this analysis has used initial density numbers which are likely to be modified. With modification, less background traffic flow will occur, further;
    - As the roadway network for the Future Urban Area is defined, the assignment patterns used in this analysis will change again resulting in less background traffic flows at these intersections;
    - The results presented for Major Mackenzie Drive can be used as guidance and can be updated once further definition of the Future Urban Area occurs.

8 Development Impact Assessment

8.1 Scenario A and Scenario B – 2021 Total Conditions (Existing Road Attributes)

The Stage 1 development of the subject lands is anticipated to be built and occupied by 2021.

To analyze this development condition:

- The Stage 1 development traffic flows shown in Figure 5.6 were added;
- To the background traffic flows shown in Figure 7.3.

The resultant total traffic flows for the typical weekday roadway peak hours is shown in Figure 8.1.

The Synchro Software program was used to conduct detailed analyses of each intersection.

The analysis conducted assumed the following for each of the scenarios (as outlined in section 6, table 2):

- Scenario A:
  - Existing road attributes;
  - Existing traffic signal timing.
- Scenario B:
  - Existing road attributes;
  - Optimized traffic signal timing.

Appendix J contains the detailed Synchro Software outputs.

A synthesis of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 8.2.

8.2 Scenario C – 2024 Total Conditions (Existing Road Attributes)

The Stage 2 development of the subject lands is anticipated to be built and occupied by 2024.

To analyze this development condition:

- The Stage 2 development traffic flows shown in Figure 5.7 were added;
- To the background traffic flows shown in Figure 7.4.

The resultant total traffic flows for the typical weekday roadway peak hours is shown in Figure 8.3.

The Synchro Software program was used to conduct detailed analyses of each intersection.

The analysis conducted assumed:

- Existing road attributes;
- Optimized traffic signal timing.

Appendix K contains the detailed Synchro Software outputs.

A synthesis of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 8.2.

8.3 Scenario D – 2024 Total Conditions (Improved Road Attributes)

The Scenario C analysis was repeated, except the improved roadway attributes were assumed, resulting in the Scenario D analysis.

Appendix K contains the detailed Synchro Software outputs.

A synthesis of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 8.2.

8.4 Scenario E – 2026 Total Conditions (Improved Road Attributes)

The Stage 3 development of the subject lands is anticipated to be built and occupied by 2026.

To analyze this development condition:

- The Stage 3 development traffic flows shown in Figure 5.8 were added;
- To the background traffic flows shown in Figure 7.5.

The resultant total traffic flows for the typical weekday roadway peak hours is shown in Figure 8.4.

The Synchro Software program was used to conduct detailed analyses of each intersection.

The analysis conducted assumed:

- Planned improved road attributes;
- Optimized traffic signal timing.

Appendix L contains the detailed Synchro Software outputs.

A synthesis of the detailed analysis presenting overall intersection level of service, vehicle delay and volume to capacity ratio is presented in Figure 8.2.

8.5 Development Impact Assessment Summary

A thorough step wise analysis has been completed.
This analysis examined the anticipated staged development both with and without the planned road improvements. This bridging analysis is summarized in the Scenario C and D analysis.
All analysis summaries are presented in Figures 7.2 & 8.2.
This enables a complete scanning and evaluation of roadway performance not only by Stage of development but by available roadway network attribute.

The summary outputs permit comparisons to:

- Existing conditions;
- Conditions with background traffic only;
- Conditions with background traffic and traffic from each of the stages of development.

The results summarized in Figure 8.2 are discussed below by Scenario analyzed.

Scenario A

Scenario A includes:

- The Stage 1 development, with;
- Forecast 2021 background traffic flows, on;
- The existing road attribute network, evaluated with;
- Existing signal timing.

This analysis indicates that:

- All boundary road intersections providing access to the Stage 1 development can secure satisfactory operating conditions during both typical weekday roadway peak hours. All vehicle turning movements are handled efficiently with virtually no vehicle delays. There is virtually little if any impact to the primary traffic flows on Kennedy Road at the access locations;
- Upon examining the four bounding arterial road intersections that:
    - Existing traffic signal timing has to be modified not only for background traffic but for Stage 1 development traffic as well;
    - Without signal timing modification the AM peak hour results in degraded intersection operations with through movements and exclusive left turn movements in the primary directions of travel experiencing increased vehicle delays;
    - Without signal timing modification the PM peak hour results in degraded intersection operations with through movements and exclusive left turn movements in the primary directions of travel experiencing increased vehicle delays;

It is evident that the existing signal timings have to be optimized.

Scenario B

Scenario B includes:

- The Stage 1 development, with;
- Forecast 2021 background traffic flows, on;
- The existing road attribute network, evaluated with;
- Optimized signal timing.

This analysis indicates that:

- Optimizing the signal timings provide measurable benefit to the total traffic flows;
- All boundary road intersections providing access to the Stage 1 development can secure satisfactory operating conditions during both typical weekday roadway peak hours. All vehicle turning movements are handled efficiently with virtually no vehicle delays. There is virtually little if any impact to the primary traffic flows on Kennedy Road at the access locations;
- The primary boundary road intersection providing access to this stage of development is the Kennedy Road and 16th Avenue intersection. In the AM peak hour the Stage 1 traffic flows reduce the intersection performance by approximately 10% and the resulting performance is still within an acceptable range. In the PM peak hour the Stage 1 traffic flows reduce the intersection performance by approximately 2% and the resulting performance is still within an acceptable range;
- Some portion of the Stage 1 traffic flow will utilize the 16th Avenue and Warden Avenue intersection. In both the AM and PM peak hours the Stage 1 traffic flows reduce the intersection operating performance by approximately 2%. This is considered to be reasonable;

- The 16th avenue and Warden Avenue intersection is more heavily utilized by background traffic flows than the Kennedy Road and 16th Avenue intersection. As a result it will continue to experience moderate delays to through vehicle movements in the peak hour peak direction of travel;

- The Stage 1 development imparts little if any change to the intersection operating characteristics of Major Mackenzie Drive intersections with Warden Avenue and Kennedy Road.

It is evident that with signal timing optimization that the Stage 1 development can be reasonably accommodated by the existing roadway attributes and boundary road intersections. Overall the intersection operating conditions are not that much different when taking into account forecast background traffic flows.

Scenario C

Scenario C includes:

- The Stage 2 development, with;

- Forecast 2024 background traffic flows, on;

- The existing road attribute network, evaluated with;

- Optimized signal timing.

This analysis indicates that:

- Prior to inserting Stage 2 development traffic flows it must be pointed out that background traffic flows have been inserted into the analysis. The 2024 background traffic flows may not materialize as accounted for in this analysis;

- All boundary road intersections providing access to the Stage 2 development can secure satisfactory operating conditions during both typical weekday roadway peak hours. All vehicle turning movements are handled efficiently with virtually no vehicle delays. There is virtually little if any impact to the primary traffic flows on Kennedy Road at the access locations;

- Without the planned improved boundary road attributes the 2024 background traffic flows further reduce the operational performance at each of the four bounding arterial road intersections. This reduction ranges from approximately 11% to 25% over capacity. In the peak hour peak direction of travel both the through vehicle and exclusive left turn movements are delayed resulting vehicle queues waiting for at least two cycles to clear the intersection of 16th Avenue and Warden Avenue;

- The remaining three bounding arterial road intersections although over capacity in the roadway peak hours are still within a tolerable level of service range;

- The Stage 2 development traffic flow imparts a very low impact and only marginally reduces the intersection performance of the Major Mackenzie Drive intersections with Warden Avenue and Kennedy Road during the roadway peak hours;

- The Stage 2 development traffic flows during the roadway PM peak hour further reduces the operating performance of the 16th Avenue and Kennedy Road intersection by approximately 3%. Such a reduction magnitude is normally considered reasonable and fair in total context. However, in this context it is within a roadway network that is already under pressure by forecast background traffic flows;

- The Stage 2 development traffic flows during the AM and PM peak hours reduce the operating performance of the 16th Avenue and Warden Avenue intersection by approximately 3% and 4% respectively. Such a reduction magnitude is normally considered reasonable and fair in total context. However in this context it is within a roadway network that is already under pressure by forecast background traffic flows.

It is evident from this Scenario analysis that improving boundary road intersection operations is dependent upon the timing when the planned boundary road improvements are introduced. It appears that the boundary road improvements are scheduled for 2025 or immediately thereafter. A monitoring program could be scheduled such that the rate of background traffic growth could be verified. This verification could then determine how the Stage 2 development is brought forward.

Scenario D

Scenario D includes:

- The Stage 2 development, with;

- Forecast 2024 background traffic flows, on;

- The planned new road attribute network, evaluated with;

- Optimized signal timing.

This analysis indicates that:

- Introducing the planned attribute improvements on 16th Avenue and Kennedy Road south of 16th Avenue provide significant operational benefits to all bounding arterial road intersections especially the 16th Avenue intersections with Warden Avenue and Kennedy Road;

- With both background and Stage 2 traffic flows considered, the above intersections secure overall intersection performance levels that are below or just at operating capacity;

- Delay to through traffic flows in peak hour peak directions of travel have either been reduced to acceptable levels or within a reasonable time delay;

- A couple of the exclusive left turn movements continue to have a heavy demand in the peak hour peak direction of travel and will require monitoring to ensure that sufficient storage length can be provided to minimize friction with through traffic flows;

- All boundary road intersections providing access to the Stage 2 development can secure satisfactory operating conditions during both typical weekday roadway peak hours. All vehicle turning movements are handled efficiently with virtually no vehicle delays. There is virtually little if any impact to the primary traffic flows on Kennedy Road at the access locations;

- The Stage 2 development traffic flow (in context with background traffic flows) imparts a very low impact and only marginally reduces the intersection performance of the Major Mackenzie Drive intersections with Warden Avenue and Kennedy Road during the roadway peak hours;

- As mentioned above and in the previous section, background traffic flows appear to have the strongest influence on intersection performance and resultant operating conditions in the Major Mackenzie Drive corridor. This analysis has used EMME II outputs reflecting the ongoing planning and engineering efforts for the North Markham Future Urban Area. This area contributes to part of the forecast background traffic flows. As the planning work progresses for this planning area the growth rates used in this analysis will likely be modified. In turn the finalization of the future urban area road network may provide alternate travel routes to serve vehicle demands. The resultant outputs for Major Mackenzie Drive with the intersections of Warden Avenue and Kennedy Road should be used for guidance purposes at this stage. Further refined analysis can be conducted once key inputs are stabilized.

Scenario E

Scenario E includes:

- The Stage 3 development, with;

- Forecast 2026 background traffic flows, on;

- The planned new road attribute network, evaluated with;

- Optimized signal timing.

This analysis indicates that:

- All boundary road intersections providing access to the Stage 3 development can secure satisfactory operating conditions during both typical weekday roadway peak hours. All vehicle turning movements are handled efficiently with virtually no vehicle delays. There is virtually little if any impact to the primary traffic flows on Kennedy Road at the access locations;

- Introducing the planned attribute improvements on 16th Avenue and Kennedy Road south of 16th Avenue provide significant operational benefits to all bounding arterial road intersections especially the 16th Avenue intersections with Warden Avenue and Kennedy Road;

- With both background and Stage 3 traffic flows considered these intersections secure overall intersection performance levels that are below or just at operating capacity, the only exception is;

- The 16th Avenue and Warden Avenue intersection during the roadway AM peak hour. In this time period:

    - Two peak hour peak direction traffic flows directly compete for allocation of green and phasing time;
    - These competing flows are the westbound exclusive left turn traffic flow and the southbound through traffic flow. The through southbound traffic flow is high, therefore restricting the amount of phased time that can be provided to the left turn movement. This operating condition may resolve itself, over time especially as background traffic flows alternate routes of travel during the AM peak hour;

- The Stage 3 development traffic flow (in context with background flows) imparts a very low impact and only marginally reduces the intersection performance of the Major Mackenzie Drive intersections with Warden Avenue and Kennedy Road during the roadway peak hours;

- As mentioned above and in the previous section, background traffic flows appear to have the strongest influence on intersection performance and resultant operating conditions in the Major Mackenzie Drive corridor. This analysis has used EMME II outputs reflecting the ongoing planning and engineering efforts for the North Markham Future Urban Area. This area contributes to part of the forecast background traffic flows. As the planning work progresses for this planning area the growth rates used in this analysis will likely be modified. In turn the finalization of the future urban area road network may provide alternate travel routes to serve vehicle demands. The resultant outputs for Major Mackenzie Drive with the intersections of Warden Avenue and Kennedy Road should be used for guidance purposes at this stage. Further refined analysis can be conducted once key inputs are stabilized.

9 Subject Lands Intersection Infrastructure

9.1 Signal Warrant Analysis

This analysis confirms that all roads intersecting with an arterial boundary road and providing access to the subject lands will have an intersection lane configuration consisting of:

- One inbound lane of traffic;
- An exclusive outbound left turn lane;
- An exclusive right turn / through outbound lane;
- One exclusive left turn lane on the arterial road.

It is evident that the subject lands internal roadway network and access pattern will be able to directly tie into existing traffic signal locations.

These locations are;

- 16th Avenue and Normandale Road West intersection;
- 16th Avenue and Yorkton Boulevard intersection;
- Kennedy Road and Beckett Avenue intersection;
- Kennedy Road and Bur Oak Avenue intersection;
- Major Mackenzie Drive and Angus Glen Boulevard.

The remaining access locations serving the subject lands will require the installation of traffic signals.

These locations include:

- 16th Avenue and Normandale East intersection (Stage 2);
- Kennedy Road and Wilfred Murison Avenue (Stage 1).

Signal warrant analyses were conducted for each of the locations by the development stage indicated.

The techniques contained in the Ontario Traffic Manual Book 12 were used to determine the need and justification.

Appendix M contains the calculation sheets for each intersection analyzed.

It is interesting to note that the signal warrant analysis technique does not justify the installation of traffic signals at the 16th Avenue / Normandale East Road and Kennedy Road / Wilfred Murison Avenue intersections. The reason for this is that there is very little traffic that crosses the major arterial roads. As a result the full warrants are not met because cross traffic is very low. Yet it is evident that the majority of vehicle movements are those entering and leaving development on both sides of the arterial roads. These vehicle movements are turning movements. Such turning movements cannot be exposed to the conflicts created by primary traffic flows on the arterial roads. With this urban environment setting it is concluded that traffic signals must be installed at the time a connection is made regardless of not meeting typical warrants.

Prospector's Drive currently operates without a traffic signal installation.

The analysis indicates that such an operation could continue at least until 2026. Vehicle delays are imparted to the northbound outbound left turn movement. These delays are considered reasonable and vehicles are safely stored within the Prospector's Drive approach. The installation of a traffic signal control device should be protected for at this location. As work is finalized for the Markham North Future Urban Area this location may necessitate the installation of a traffic signal.

The feasibility to accommodate the planned intersection lane configurations was examined. Functional design sketches were prepared for the identified 16th Avenue and Kennedy Road intersections.

Figure 9.1 illustrates the functional design sketch for both the 16th Avenue and Normandale Road West intersection and the 16th Avenue and Normandale Road East intersection.

Figure 9.2 illustrates the functional design sketch for both the Wilfred Murison Avenue and Kennedy Road intersection and the Bur Oak Avenue and Kennedy Road intersection.

9.2 Exclusive Left Turn Lane Assessment

It is recognized that left turn demands at the bounding arterial road intersections will continue to be high, especially during the roadway peak periods.

An analysis of all intersection left turns was undertaken for both subject land access locations and the primary four (4) boundary road intersections.

The purpose of the analysis was to:

- Determine the exclusive left turn vehicle demand length (50th and 95th percentile) using the outputs from the Synchro Software Program from the Stage 2 & Stage 3 analyses;
- The highest demand from either the roadway AM or PM peak was used;
- Ascertain the existing exclusive left turn storage provided using Google air photo maps;

- Compare the calculated length demand against the available exclusive storage space provided;

- Scenarios C and E were assessed.

Figure 9.3 summarizes the analysis findings.

It is evident from this analysis that:

- Most of the exclusive left turn storage lanes will be able to (or can be extended to) accommodate the anticipated demand;

- There are several locations were the calculated demand appears to exceed the feasibility of providing sufficient storage length, however;

- Further geometric detail, especially as part of the Environmental Assessment Study for 16th Avenue and Kennedy Road south of 16th Avenue will be able to better refine the physical condition;

- It is likely that most of the identified locations which require amelioration can be resolved with further detailed design.

10 Conclusions and Recommendations

The analysis completed enables the following conclusions to be made:

- 4134 16th Avenue:
  - Is provided with a high degree of transportation and mobility choice accessibility;
    - Highways 404 and 407 are in close proximity and direct access can be secured to the entire Greater Toronto Area;
    - A grid of arterial roads is available providing accessibility throughout the York Region area and adjacent Regions;
    - Existing York Region Transit services are available and feasible additions and modifications can be provided to directly serve any planned stage of development;
    - The on-going continual improvements and additions to York Region Transit and VIVA services directly access all major Markham attractors, generators and employment areas;
    - Within an eight year period direct access can be secured to Unionville GO Station which will have available all day two way GO Train service;
    - The identified Active Transportation System directly and efficiently provides mobility choices. Bicyclists and pedestrians are provided with direct connections to municipal trails, paths and sidewalks. Sustainable accessibility is secured to local attractors and generators such as parks, schools, community centre and retail uses;
    - The land use formations and grid of internal roads secures minimal walking distance to transit;
    - The integrated active transportation and land use infrastructure provides a strong foundation to secure high uptake of modal choices other than the automobile thereby enabling effective travel demand management measures uptake;
  - Represents good land use and transportation planning. This development is inserted in a location which has a strong existing transportation system foundation and soon will have significant improvements and additions to the road and transit components. These improvements and additions will provide significant operating capacity enhancements to serve both existing and future travel demands;

- Continued population and employment growth in York Region and the City of Markham has placed a strain on the operating capability of the existing roadway network. Major arterial road intersections which bound the subject lands are at or have exceeded available capacity during the typical weekday roadway peak hours. The operational deficiencies are particularly evident in the peak hour peak direction of travel. As an example in the AM peak hour heavy southbound traffic flows compete for signal timing allocation against heavy westbound traffic flows. The reverse occurs during the PM peak hour;

- During the roadway peak hours such operating conditions can be frustrating to drivers, especially those in exclusive turning and through lanes where a wait of two cycles may be necessary to clear the intersection. Such a driving experience is not unique to Markham, it is common to every municipality in the Greater Toronto Area;

- As this analysis highlights, no matter what stage of development is considered, either in horizon year 2021, 2024 or 2026 each and every collector road intersection (at the bounding arterial roads) can provide satisfactory vehicle operating conditions at good levels of service with little if any vehicle delay. It is always the boundary road arterial road intersections that are under pressure;

- This pressure is greatly relieved for existing traffic flows, forecast traffic flows resulting from planned growth and traffic flows resulting from the subject lands once the planned improvements to 16th Avenue and Kennedy Road south of 16th Avenue are put into place. It is anticipated that these improvements will be put into place shortly beyond 2025;

- With the planned boundary road improvements in place by 2026 the analysis indicates that all primary boundary road intersections can mostly provide good levels of service with minimal vehicle delays. The operating condition is secured for existing traffic flows, traffic flows from planned development and the build out of the subject lands;

- In the interim years 2021 and 2024 the operational characteristics of the primary boundary road intersections are governed by the fact that the existing roadway attributes may still be in place and the strongest influence on roadway operating conditions will be:
  - The extent of traffic flow generated by planned area growth. If the planned area growth does not materialize as rapidly as identified in this analysis then resultant operational lane deficiencies and vehicle delays will be less, and ;
  - The extent of traffic flow generated by the subject lands. If the rate of development does not materialize as identified in this analysis then resultant operational lane deficiencies and vehicle delays will be less;

- The Stage 1 development of the subject lands is scheduled to be built out by 2021 and within the conditions described in the above bullet point. The analysis indicates that relative to the total boundary road traffic flows which include traffic flows from planned growth; the subject lands traffic flow is a very small amount of this total. This subject site traffic flow causes a further reduction in boundary road intersection operation levels of service ranging from 3% to 5%. Such a reduction is considered a normal range for the introduction of development within existing traffic flows. The resultant primary road intersection operating capability although reduced is still considered to be reasonable and not likely observable to drivers who currently use the boundary roads;

- The Stage 2 development is very much in a transitional period. It is scheduled to occur prior to the planned roadway improvements but it is also in a period in which traffic flows resulting from planned area growth may not occur at the rate identified in this analysis.

The analysis completed enables the following recommendations to be made:

- That Stage 1 development of the subject lands is permitted to proceed. Even though the primary boundary road intersections will experience degradation in intersection levels of service and operations, the deficiencies may not be as great as those identified in the analysis. The analysis is conservative incorporating traffic flows from planned growth areas. This growth may not materialize at the rate analyzed and hence the operations will be better;

- The Stage 2 development of the subject lands is permitted to proceed. Stage 2 is in the same position as above. Stage 2 is anticipated just prior to the planned boundary road improvements. As indicated above the analysis undertaken is conservative because it incorporates traffic flows from planned area developments which may not occur at the rate anticipated. If this planned area growth is not at the assumed rate then boundary road operational characteristics will be better. Consideration could be given to permitting development to proceed based upon a monitoring program of boundary road traffic flows. With monitoring of the traffic flows on the boundary roads confirmation can be obtained for a Stage 2 development rate which does not materially change the boundary road operating characteristics;

- The Stage 3 development is almost coincident with the planned boundary road improvements. Stage 3 is anticipated between 2024 and 2026 while the planned road improvements are anticipated shortly after 2025. Approximately 62% of the total subject land development is expected to occur in this time period. It is very likely that the bulk of development resulting from this Stage will match the 2025 + time period of road improvements. Although difficult to confirm at present it appears that both Stage 3 development and the timing of planned road improvements can be largely constructed in a complimentary and a coincident manner;

- The Active Transportation System network components be implemented by subject land stage of development;

- A traffic signal installation is available at the time any of the Stages seek an access onto the bounding arterial road;

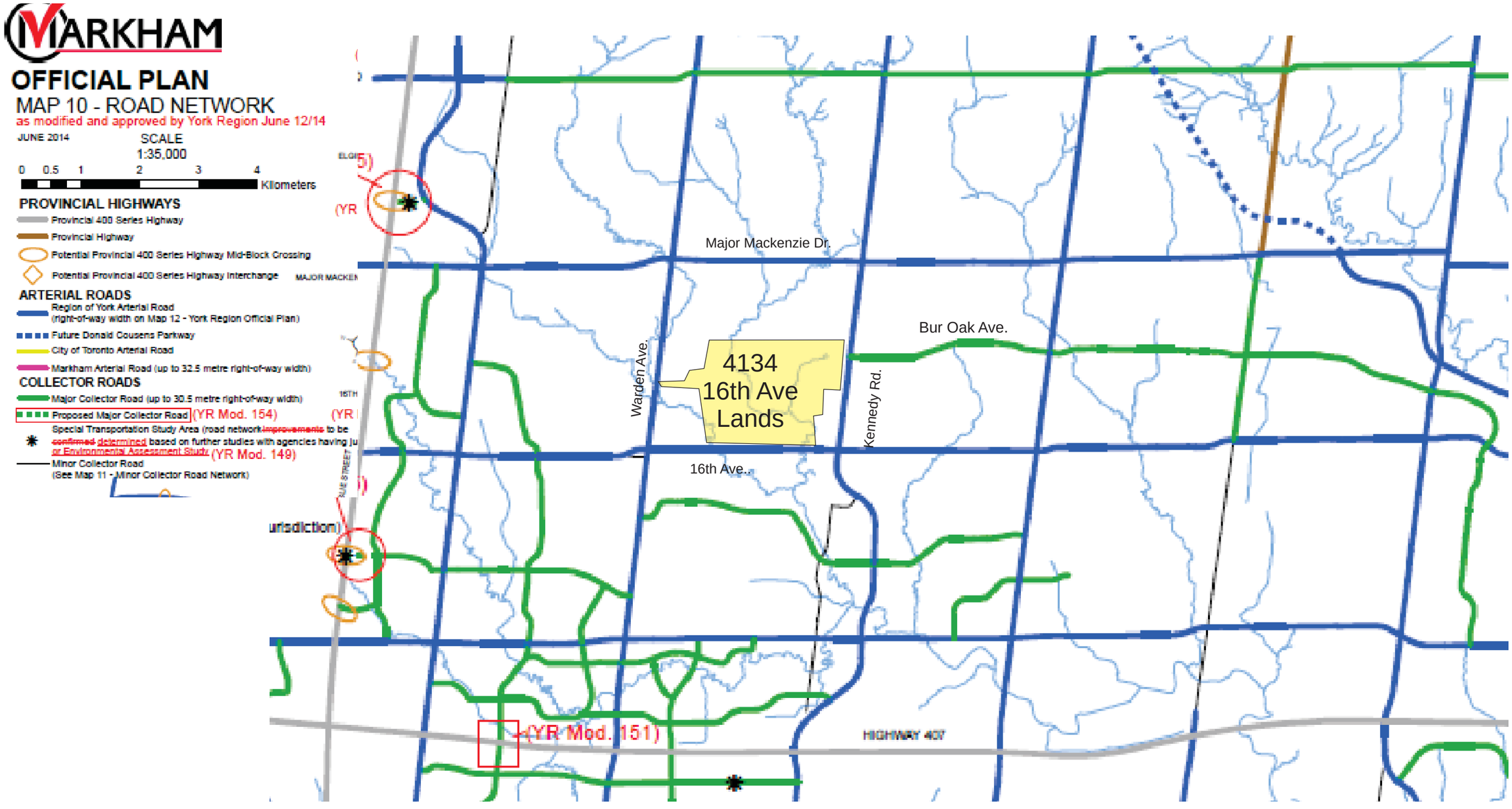
- The internal collector road approaches to the arterial road intersections be designed and constructed to the functional design sketch plan provided;

- To finalize the exclusive left turn lane storage lengths with the design resulting from the 16th Avenue Environmental Assessment Study for the planned road improvement;

- To encourage York Region in the completion of the Environmental Assessment Studies in support of the planned road improvements and then construction in a timely and expedient manner;

- Each of the Plans of Subdivision builds upon and finalizes the Travel Demand Management Plan identified in this report.

Report Figures



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Site Location and Boundary Road Network
Figure 1.1

Peak Hour Frequency

Route 18 - Bur Oak Ave
AM: 26 min
PM: 26min

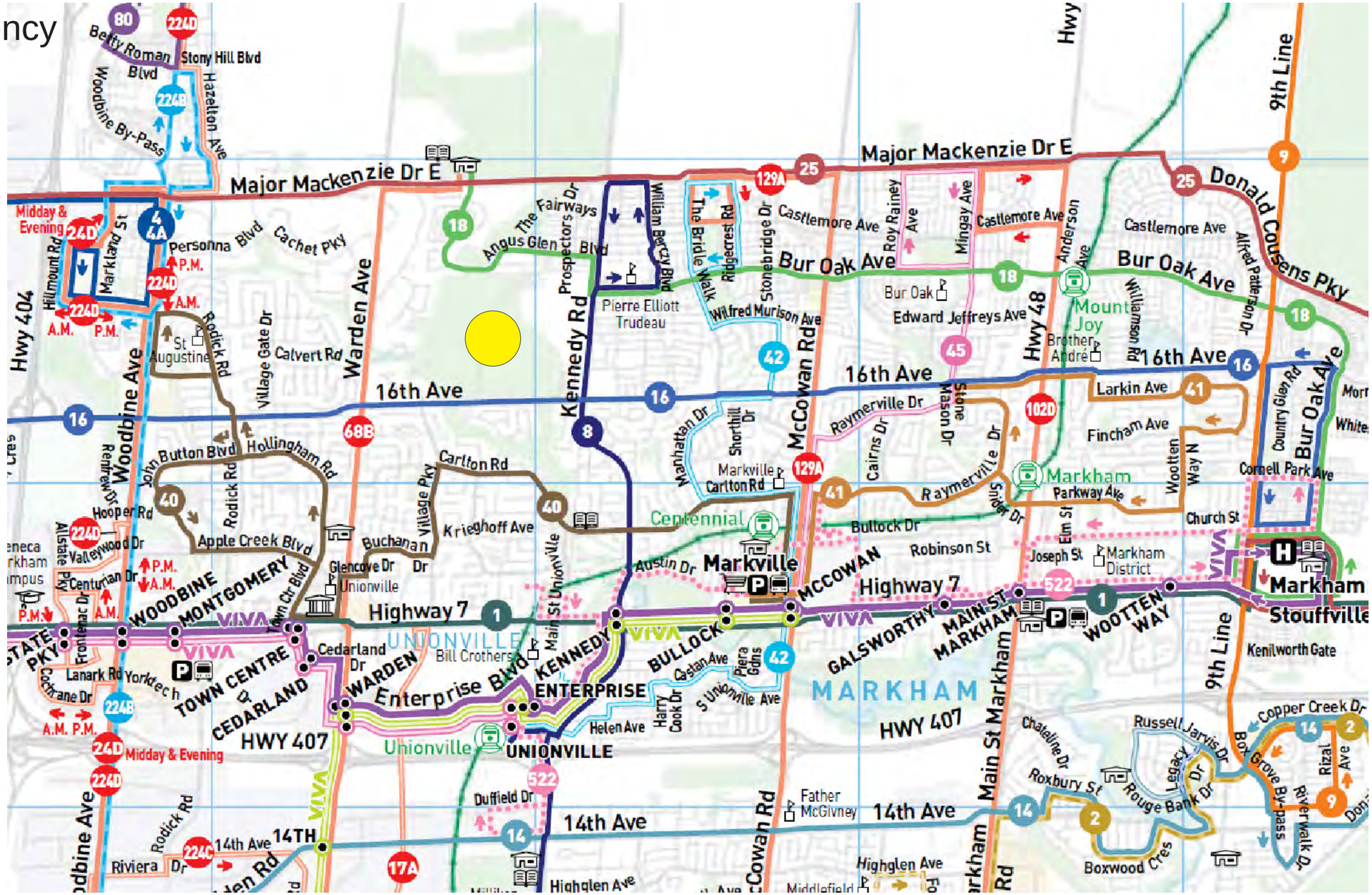
Route 08 - Kennedy
AM: 14 min
PM: 15min

Route 25 - Major Mackenzie
AM: 35 min
PM: 31 min

Route 16 - 16th Ave.
AM: 24 min
PM: 30 min

Route 68 - Warden
AM: 22 min
PM: 19 min

Subject Site



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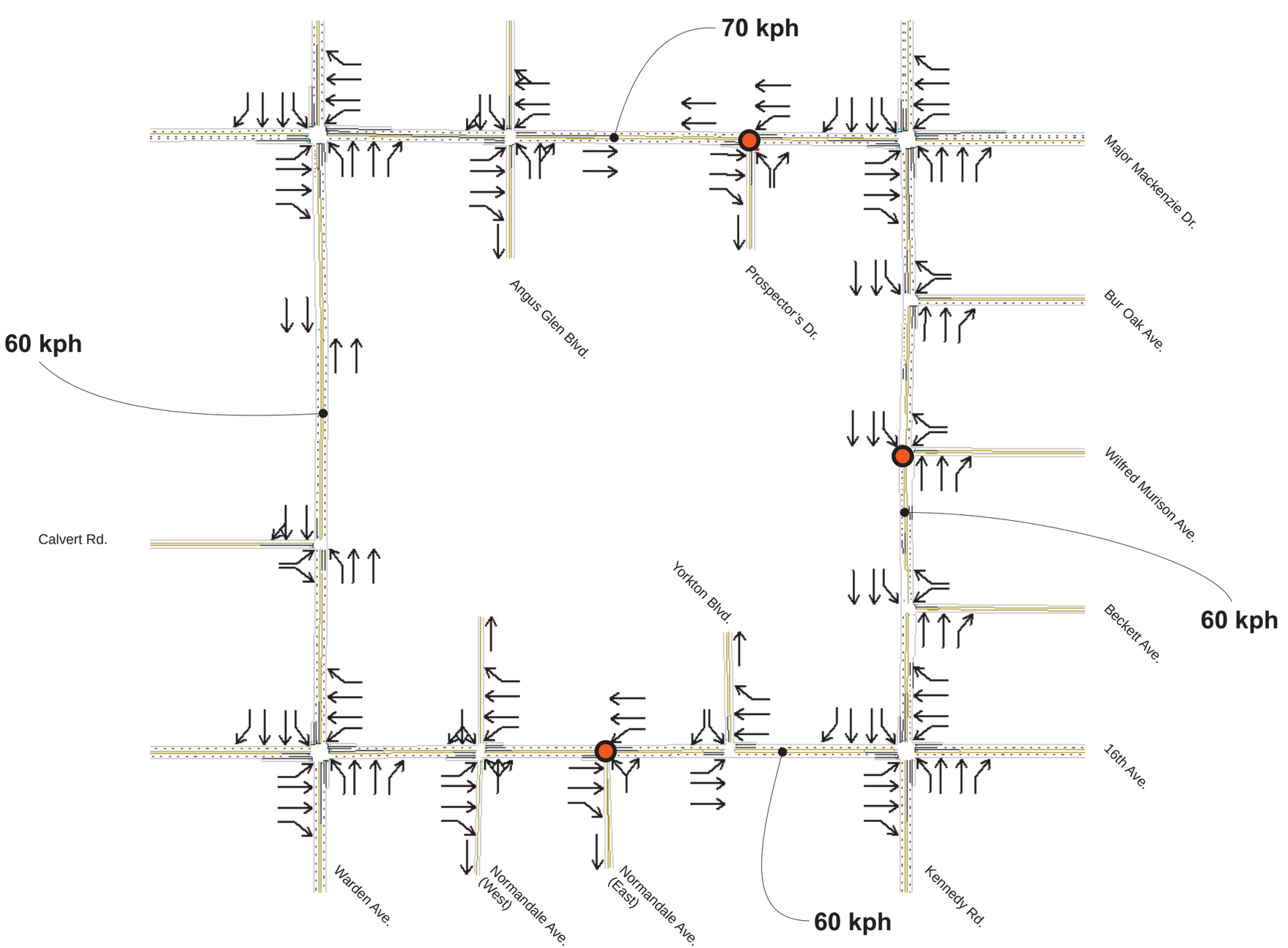
Existing Transit and Frequency
Figure 2.1



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Legend:

Stop controlled intersection

Note: side streets (i.e. collector and local roads) were assumed to have a posted speed limit of 40 or 50 kph.
All intersections are assumed to be under signal control unless stated otherwise.

Lane Configuration
Existing Condition
Figure 3.1

MARKHAM

OFFICIAL PLAN

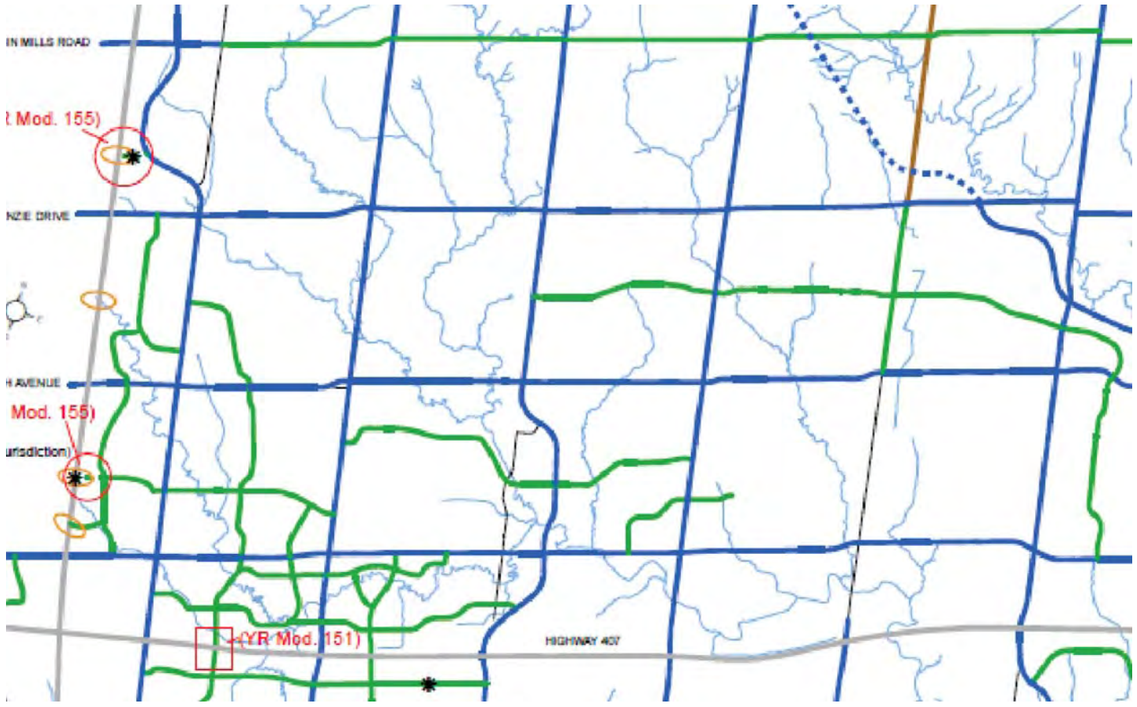
MAP 10 - ROAD NETWORK

as modified and approved by York Region June 12/14

PROVINCIAL HIGHWAYS
- Provincial 400 Series Highway
- Provincial Highway
- Potential Provincial 400 Series Highway Mid-Block Crossing
- Potential Provincial 400 Series Highway Interchange

ARTERIAL ROADS
- Region of York Arterial Road (right-of-way width on Map 12 - York Region Official Plan)
- Future Donald Cousens Parkway
- City of Toronto Arterial Road
- Markham Arterial Road (up to 32.5 metre right-of-way width)

COLLECTOR ROADS
- Major Collector Road (up to 30.5 metre right-of-way width)
- Proposed Major Collector Road (YR Mod. 154)
- Special Transportation Study Area (road network ~~improvements~~ to be ~~confirmed~~ determined based on further studies with agencies having ju... or Environmental Assessment Study (YR Mod. 149)
- Minor Collector Road (See Map 11 - Minor Collector Road Network)



MARKHAM

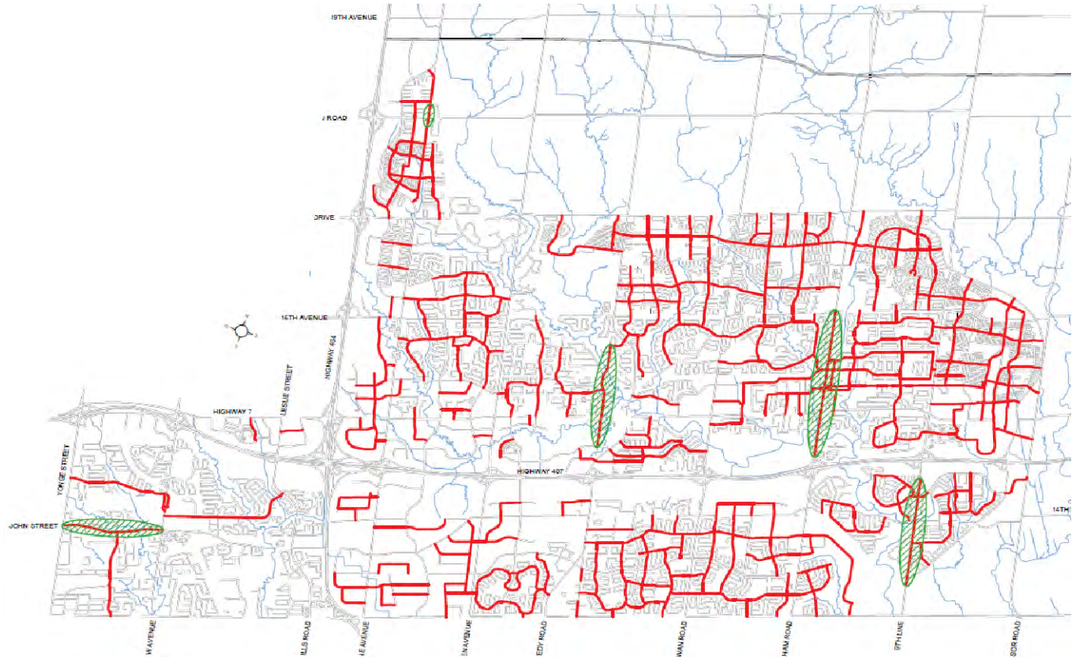
DRAFT

OFFICIAL PLAN

MAP 11 - MINOR COLLECTOR ROAD NETWORK

ELGIN MILLS ROAD

COLLECTOR ROADS
- Major Collector Road (see Map 10 - Road Network)
- Minor Collector Road (up to 24.5 metre right-of-way width)
- See Section 10.8.1.4



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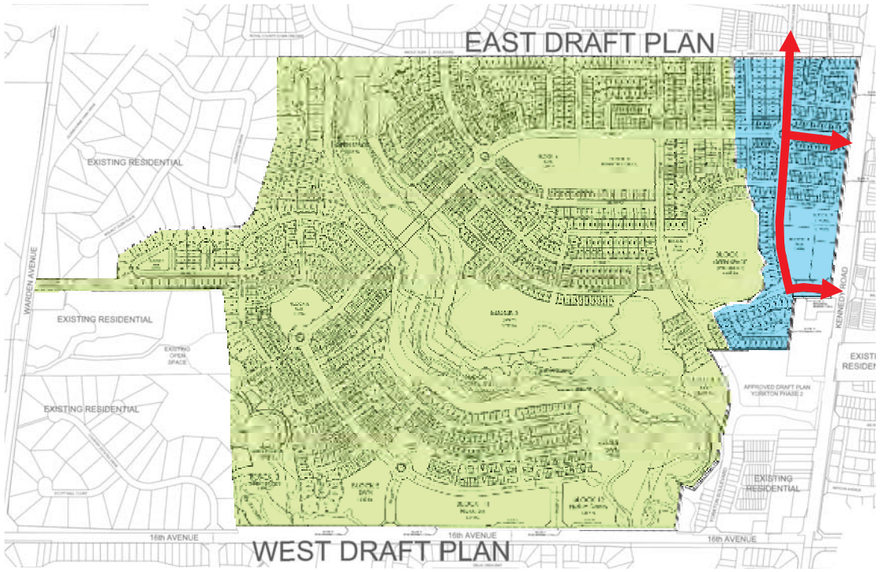
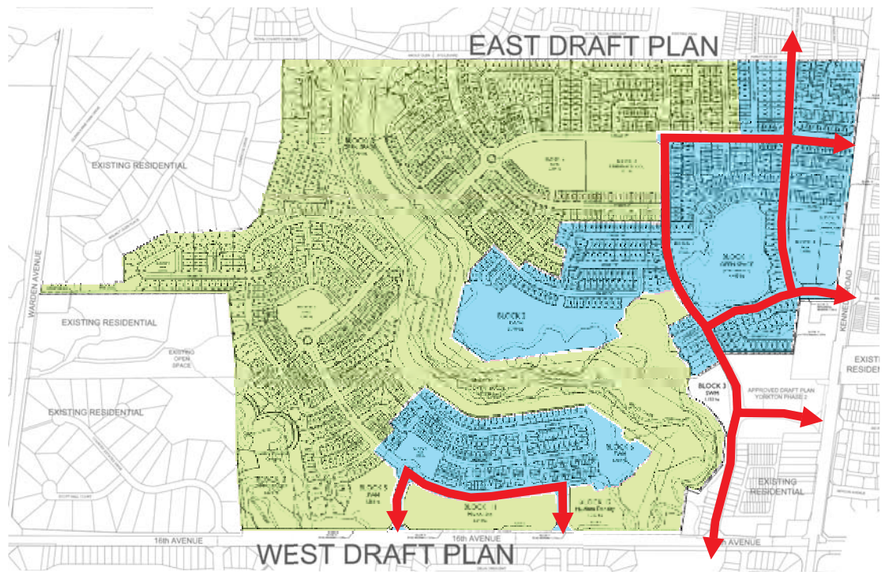
Collector and Local Road
City of Markham
Figure 3.2



Stage 2 (2024)

East Side
- Stage 1 network;
- Connection to existing Yorkton Blvd. is built (providing access to the south).

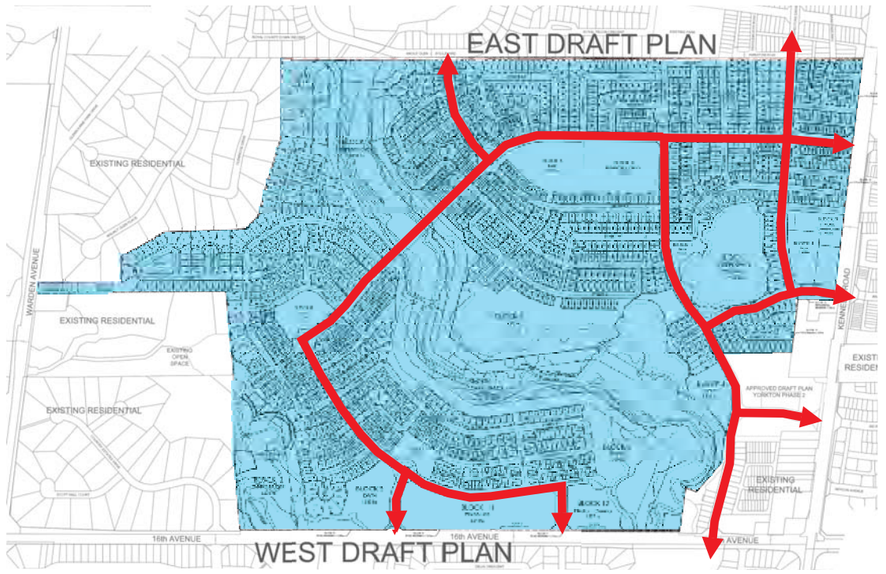
West Side
- Both entrances off of 16th Av. are built.



Stage 1 (2021)

East Side
- Access to the Major Mackenzie Dr. via Prospector's Dr.;
- Access to Kennedy Rd. via Bur Oak Av. extension and Wilfred Murison Av.

West Side
- No Development.



Stage 3 (2026)

East Side
- Full build-out of the development plan;
- includes access to Angus Glen Blvd. to the north.

West Side
- Full build-out of the development plan;
- includes creek crossing (i.e. connection to the East Side).

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Legend:
- Major internal roadway (availability by stage)
- Undeveloped component of the site plan
- Developed component of the site plan

Subject Land
Internal Road Network and Access available by Stage
Figure 3.3

ACTIVE TRANSPORTATION PLAN

September 15, 2016

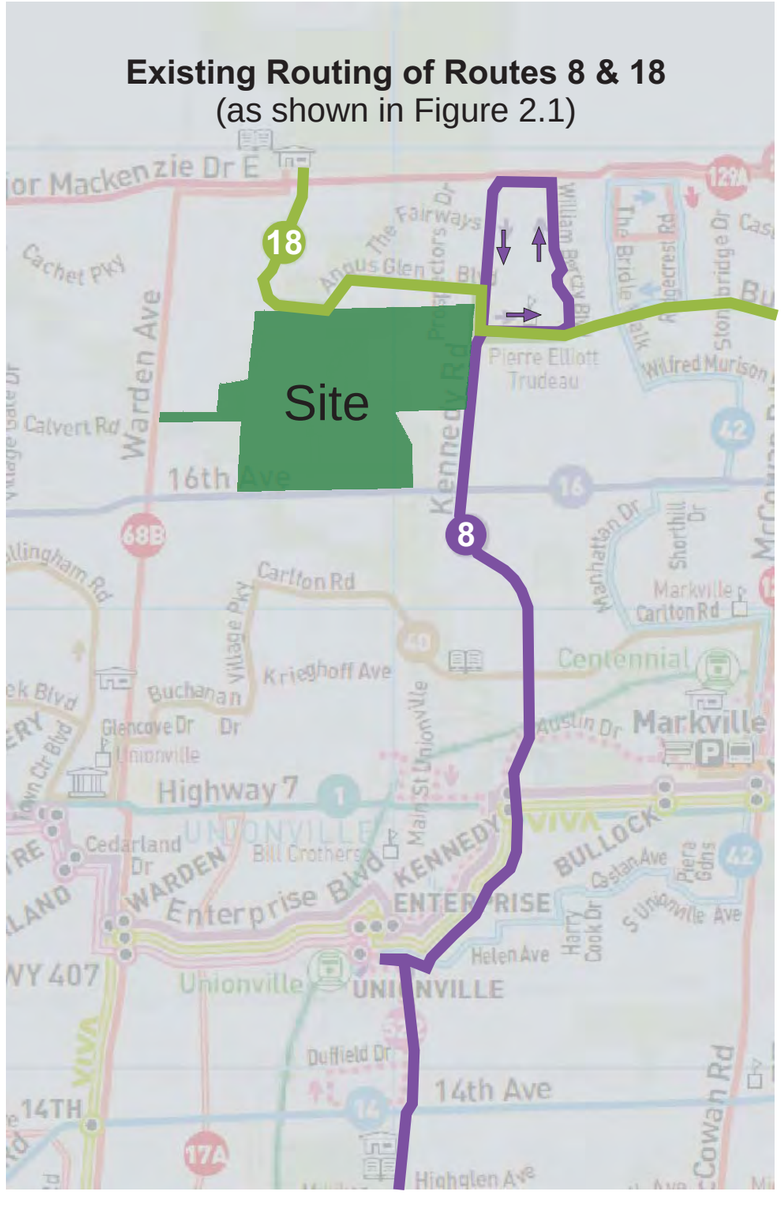
4134 16TH AVENUE, CITY OF MARKHAM, REGION OF YORK

mbtw wai

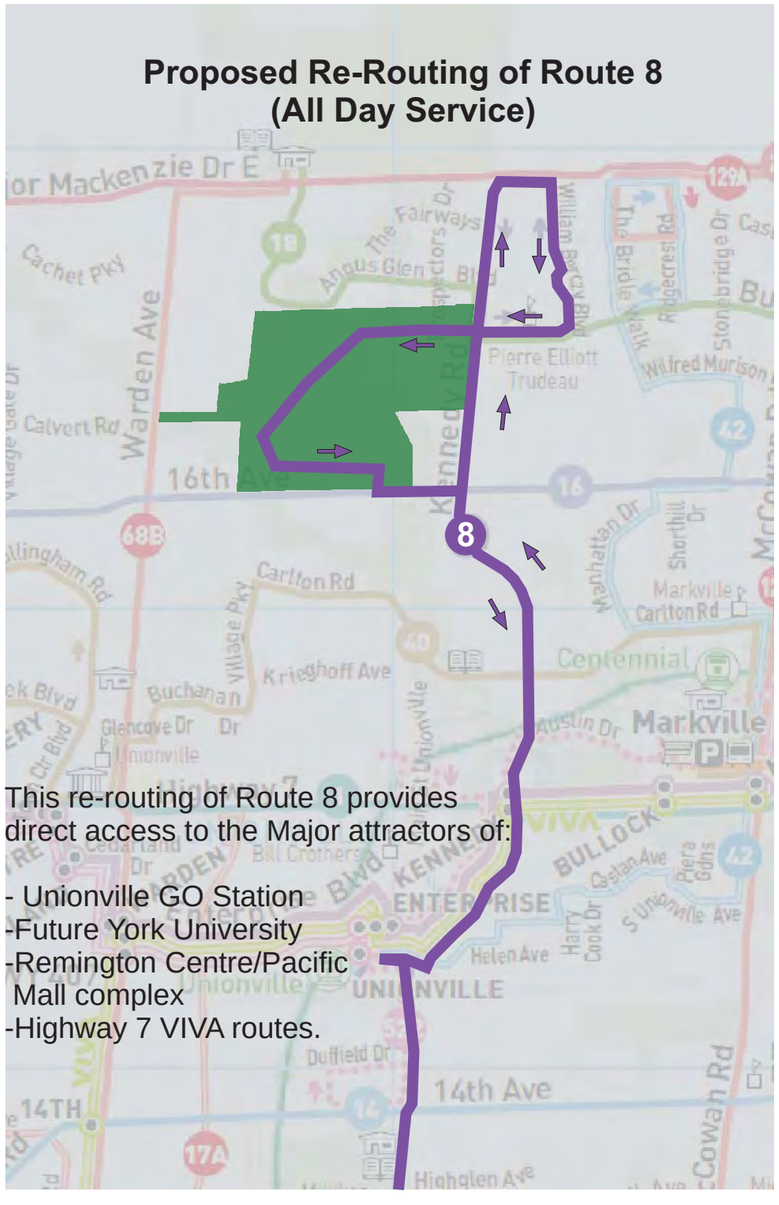
Poulos Chung

Active Transportation Plan
Figure 4.1

Existing Routing of Routes 8 & 18
(as shown in Figure 2.1)



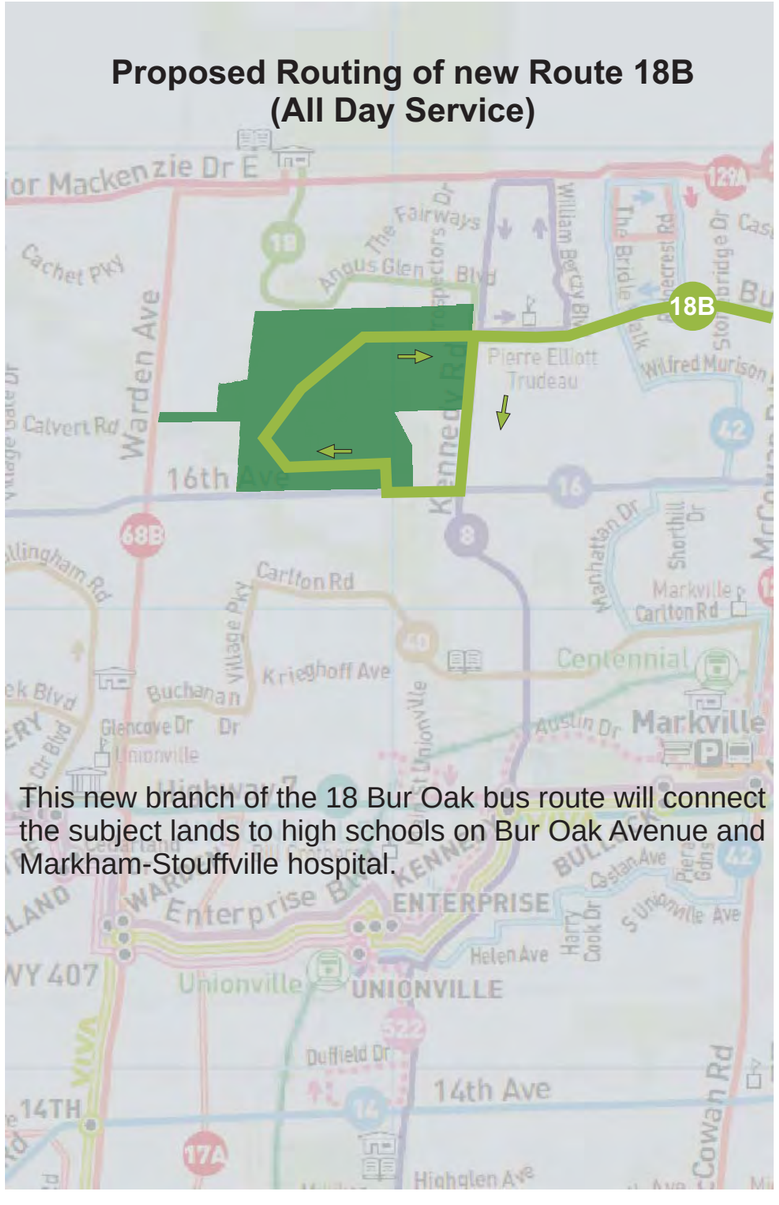
Proposed Re-Routing of Route 8
(All Day Service)



This re-routing of Route 8 provides direct access to the Major attractors of:

- Unionville GO Station
-Future York University
-Remington Centre/Pacific Mall complex
-Highway 7 VIVA routes.

Proposed Routing of new Route 18B
(All Day Service)



This new branch of the 18 Bur Oak bus route will connect the subject lands to high schools on Bur Oak Avenue and Markham-Stouffville hospital.

These two new routes ensure that over 95% of the development will be within 400 metres of transit service.

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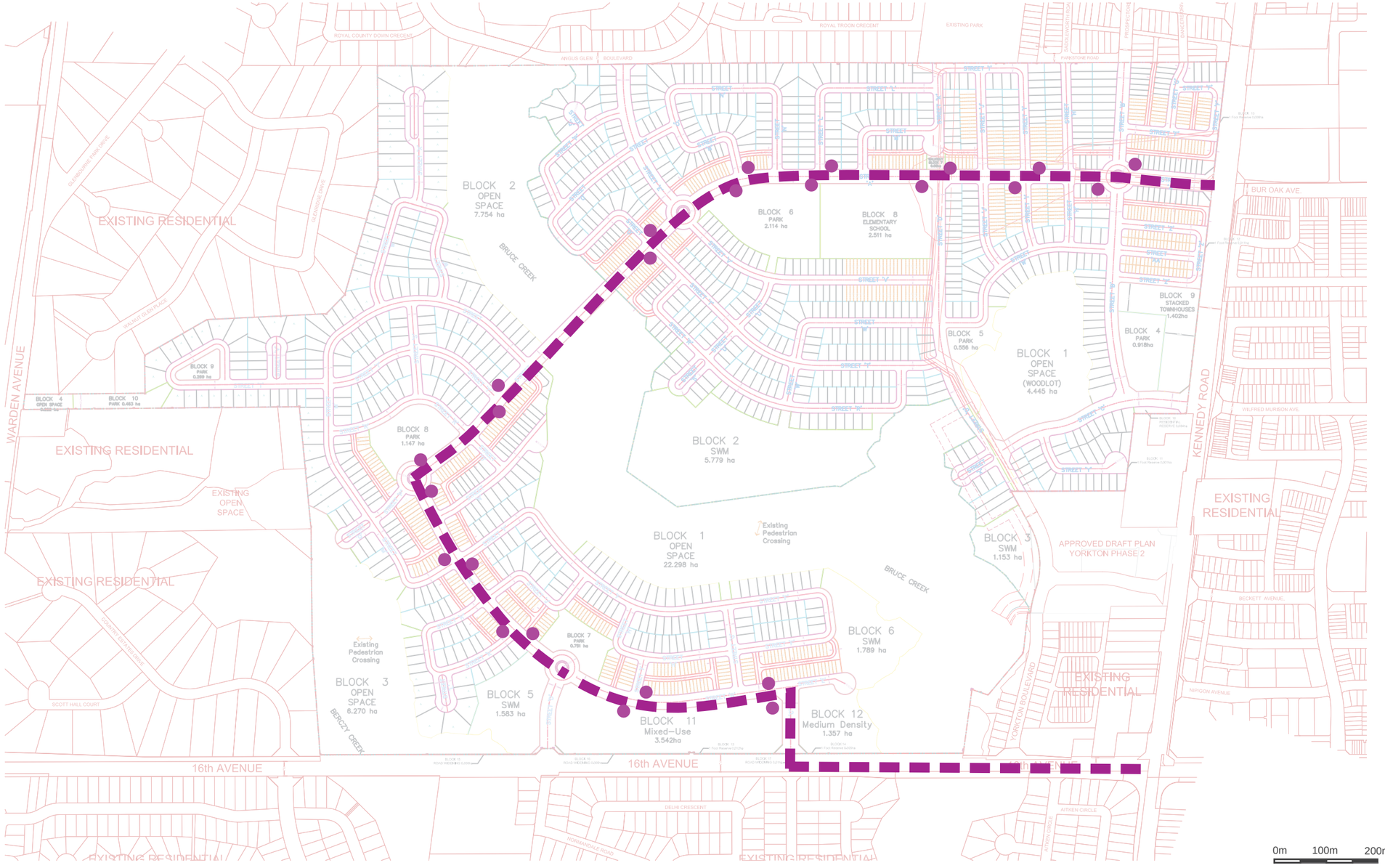
Modifications to Routes 8 & 18 to provide internal Transit Access
Figure 4.2



September 15, 2016

4134 16TH AVENUE, CITY OF MARKHAM, REGION OF YORK

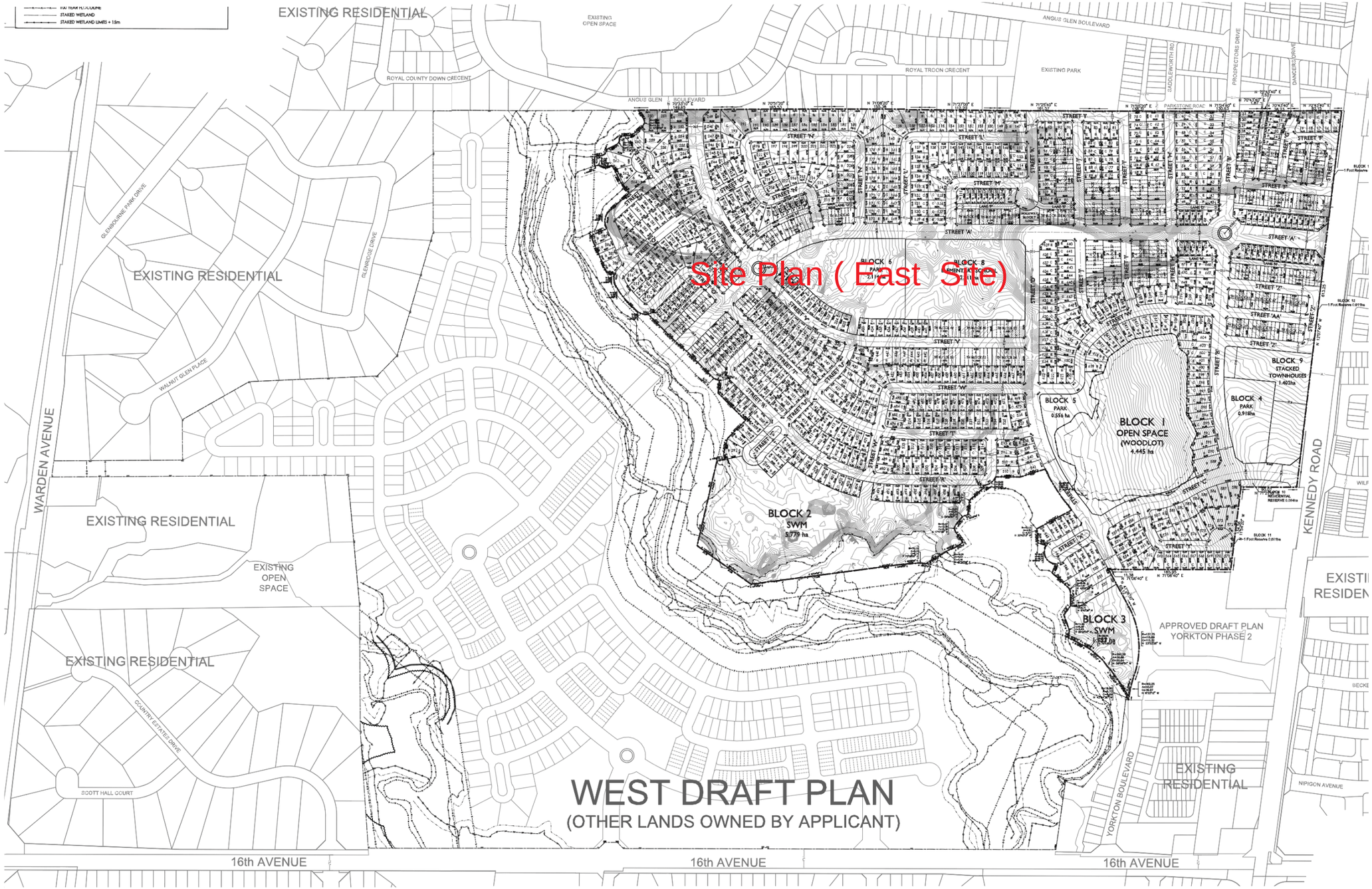
mbtw wai

Poulos Chung

Proposed Bus Stop

Proposed Transit Route

Potential Transit within Subject Lands
Figure 4.3



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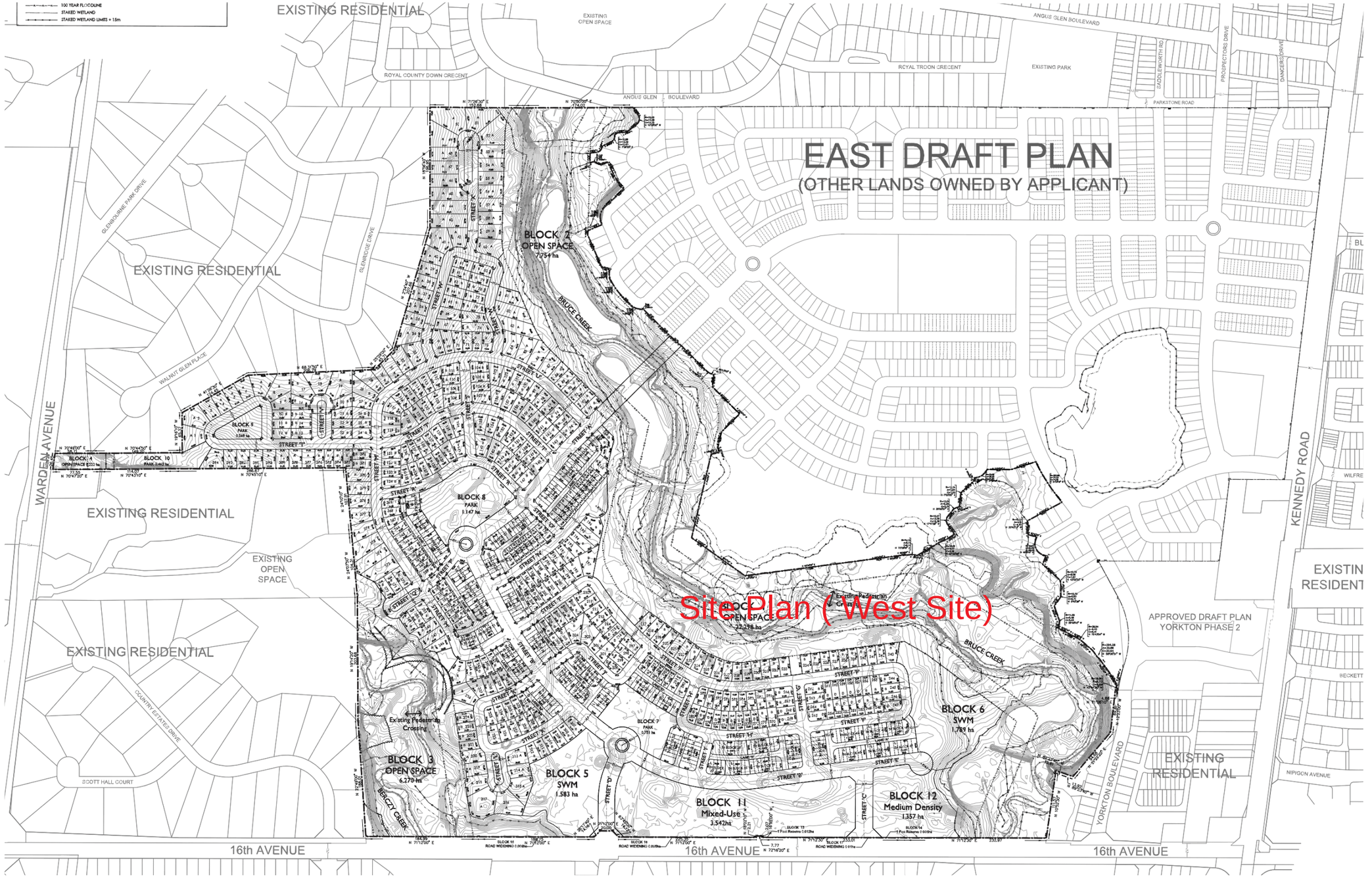
Plan of Subdivision
(East Side)
Figure 5.1



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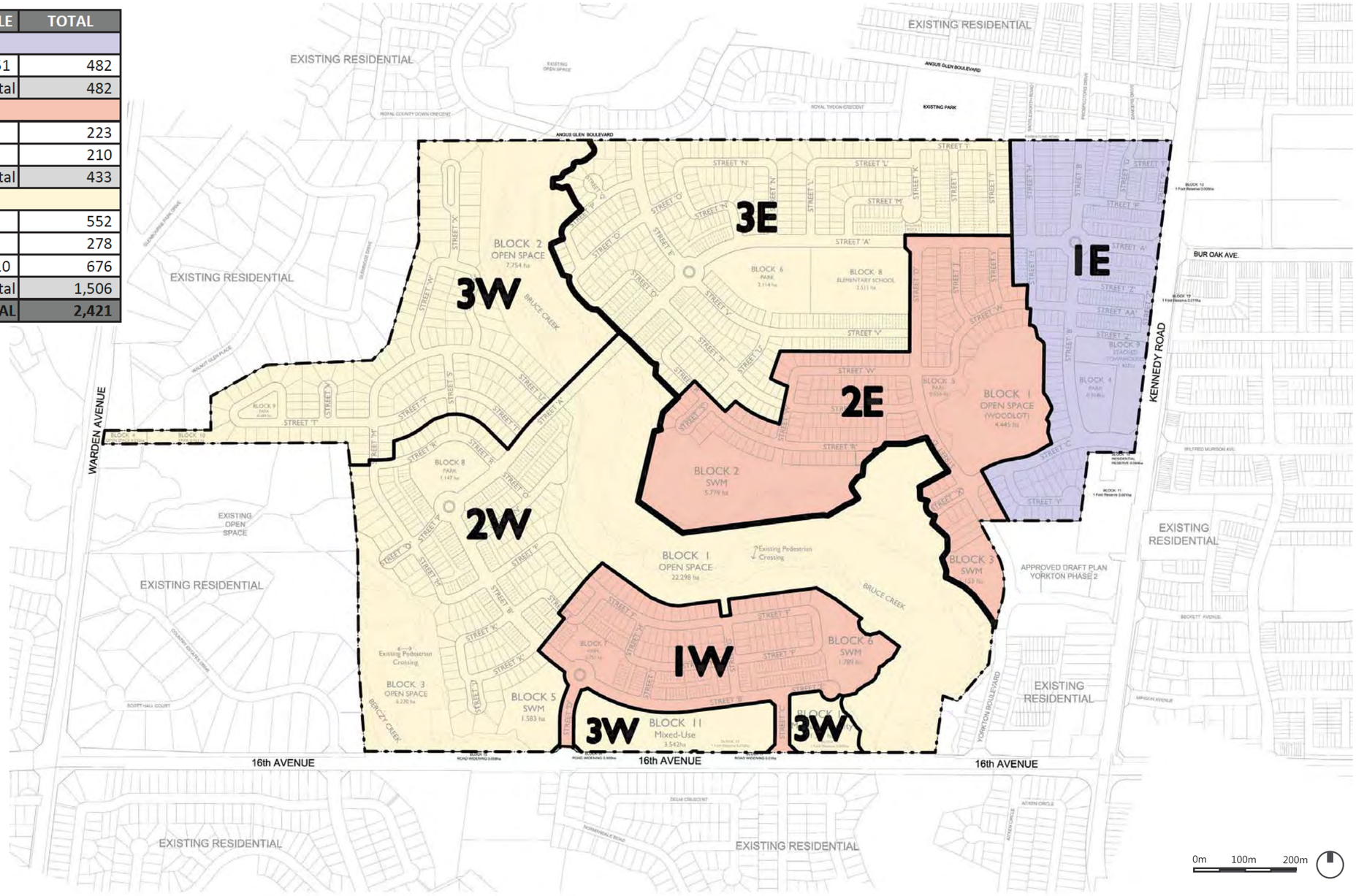
Plan of Subdivision
(West Side)
Figure 5.2

PHASE	SFD	TH	MULTIPLE	TOTAL
STAGE A: 2016-2021 Occupancy				
1 East	147	184	151	482
			Subtotal	482
STAGE B: 2022-2024 Occupancy				
2 East	185	38	-	223
1 West	84	126	-	210
			Subtotal	433
STAGE C: 2024-2026 Occupancy				
3 East	363	189	-	552
2 West	144	134	-	278
3 West	166	-	510	676
			Subtotal	1,506
			TOTAL	**2,421**



PHASING PLAN

September 12, 2016

4134 16TH AVENUE, CITY OF MARKHAM, REGION OF YORK

mbtw wai

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Phasing Plan
(Map & Statistics)
Figure 5.3

Residential Yields by Blocks

ITE Trip Generation Rates - 9th Edition

Land Uses	Units	ITE Code	Weekday AM Peak Hour In	AM Out	AM Total	Weekday PM Peak Hour In	PM Out	PM Total
Single Detached	Dwelling units	210	0.19	0.56	0.75	0.63	0.37	1.00
Residential Condominium/Townhouse	Dwelling units	230	0.07	0.37	0.44	0.35	0.17	0.52
Commercial Retail	1000 sq. ft.	820	0.27	0.69	0.96	0.25	3.46	3.71

Existing Mode of Choice : Auto 88% - Transit 8% and Other (Cycling , Walk etc..)4%
Target Transit Modal Split (FUA Study) : 17% - Increase 9% or 0.45% per year from 2011 to2031
Assuming : 50% Transit increased 2021 - Increase 4% and assumed an increased in Other Mode 2%
Forecast Mode of Transit Modal split by 2021 to 2026 : 13%

Forecast Mode of Transit Modal split by 2021 to 2026 : 13%

Residential Vehicle Trip Reduction 13%
Employment Vehicle Trip Reduction 7%

Stage 1 (2021)

Land Uses	Units	ITE Code	Weekday AM Peak Hour In	AM Out	AM Total	Weekday PM Peak Hour In	PM Out	PM Total
Single Detached	31	230	5	15	20	17	10	27
Medium /Townhouse	0	210	0	0	0	0	0	0
Single Detached	116	230	19	57	76	64	37	101
Medium /Townhouse	335	210	22	106	128	102	50	152
Total Eastside	**482**		**46**	**178**	**224**	**182**	**97**	**279**
Total (Vehicle Trips)	***482***		***46***	***178***	***224***	***182***	***97***	***279***

Forecast Mode of Transit Modal split by 2024 : 13%

Residential Vehicle Trip Reduction 13%
Employment Vehicle Trip Reduction 7%

Stage 3 (2024)

Land Uses	Units	ITE Code	Weekday AM Peak Hour In	AM Out	AM Total	Weekday PM Peak Hour In	PM Out	PM Total
Single Detached	84	230	14	41	55	46	27	73
Medium /Townhouse	126	210	8	40	48	38	19	57
Total Westside	**210**		**22**	**81**	**103**	**84**	**46**	**130**
Single Detached	47	230	8	23	31	26	15	41
Medium /Townhouse	0	210	0	0	0	0	0	0
Single Detached	168	230	27	82	110	92	54	146
Medium /Townhouse	373	210	24	119	143	113	56	169
Total Eastside	**705**		**78**	**281**	**359**	**295**	**163**	**458**
Total (Vehicle Trips)	***915***		***100***	***362***	***462***	***379***	***208***	***588***

Stage 3

Forecast Mode of Transit Modal split by 2026 : 13%

Residential Vehicle Trip Reduction 13%
Employment Vehicle Trip Reduction 7%

Stage 3 (2026)

Land Uses	Units	ITE Code	Weekday AM Peak Hour In	AM Out	AM Total	Weekday PM Peak Hour In	PM Out	PM Total
Vehicle Trips								
Single Detached	166	230	27	81	108	91	53	144
Medium /Townhouse	0	210	0	0	0	0	0	0
Single Detached	72	230	12	35	47	39	23	63
Medium /Townhouse	59	210	4	19	23	18	9	27
Single Detached	156	230	25	76	102	86	50	136
Medium /Townhouse	711	210	46	226	272	216	106	322
Total Westside	**1164**		**114**	**437**	**552**	**449**	**242**	**691**
Single Detached	75	230	12	37	49	41	24	65
Medium /Townhouse	22	210	1	7	8	7	3	10
Single Detached	223	230	36	109	146	122	72	194
Medium /Townhouse	70	210	5	22	27	21	10	32
Single Detached	47	230	8	23	31	26	15	41
Medium /Townhouse	0	210	0	0	0	0	0	0
Single Detached	147	230	24	72	96	81	47	128
Medium /Townhouse	40	210	3	13	15	12	6	18
Single Detached	203	230	33	99	132	111	65	177
Medium /Townhouse	430	210	28	137	165	130	64	195
Total Eastside	**1257**		**150**	**519**	**669**	**551**	**308**	**859**
Commercial Trips	107,600		29	74	103	27	40	67
	15% Passby		-4	-11	-15	-4	-6	-10
	10% from Neigbourhood		-3	-7	-10	-3	-4	-7
Net Commercial Vehicle Trips			**22**	**55**	**77**	**20**	**30**	**50**
Total (Vehicle Trips)	***2421***		***286***	***1012***	***1298***	***1021***	***579***	***1600***

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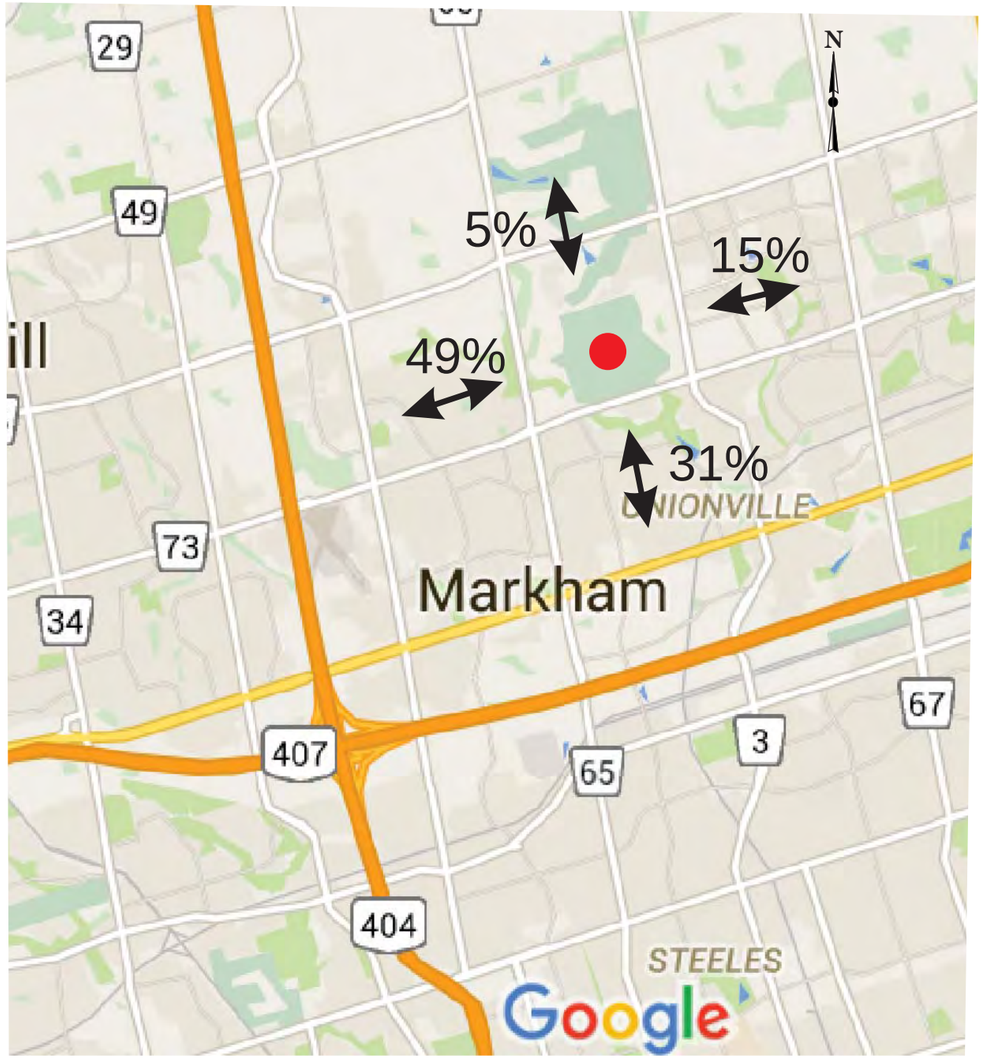
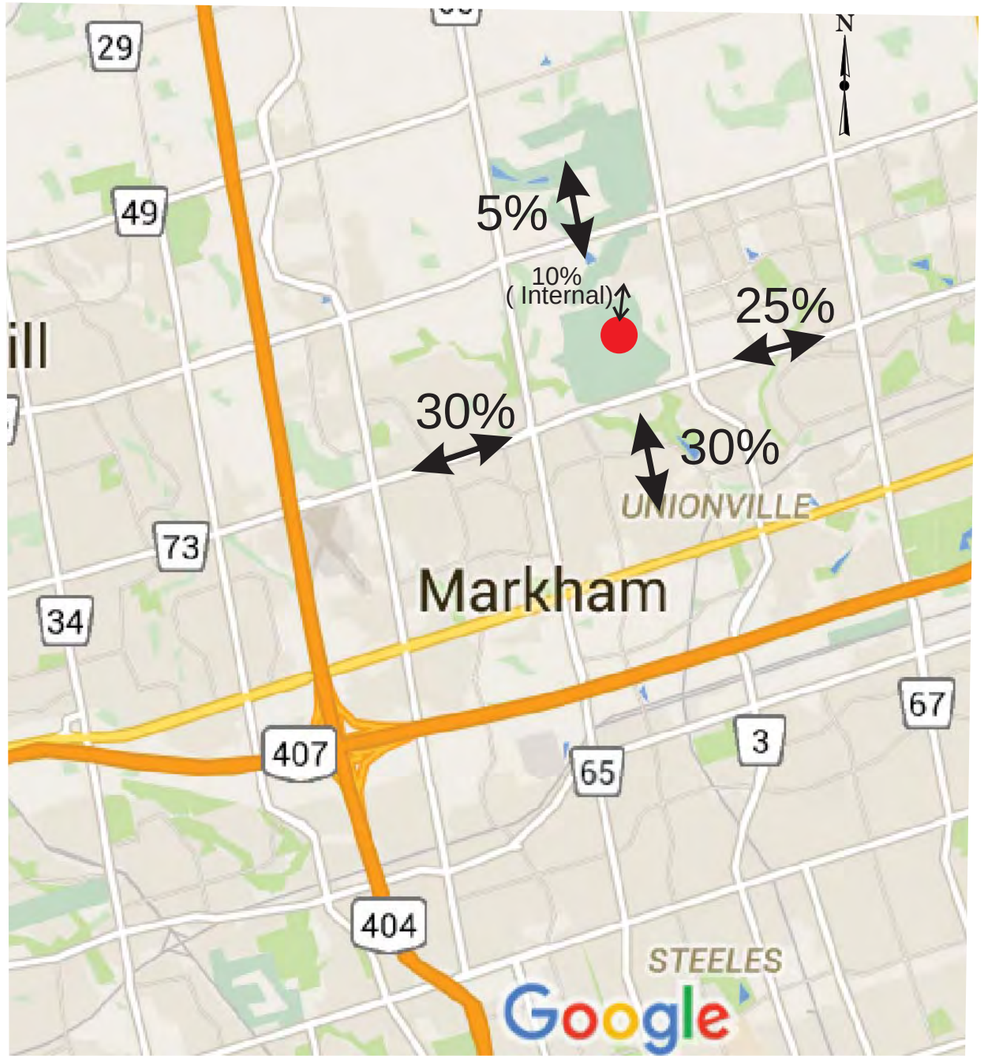
Trip Generation
Stages 1, 2 and 3
Figure 5.4



Residential Distribution Pattern



Retail Commercial Distribution Pattern

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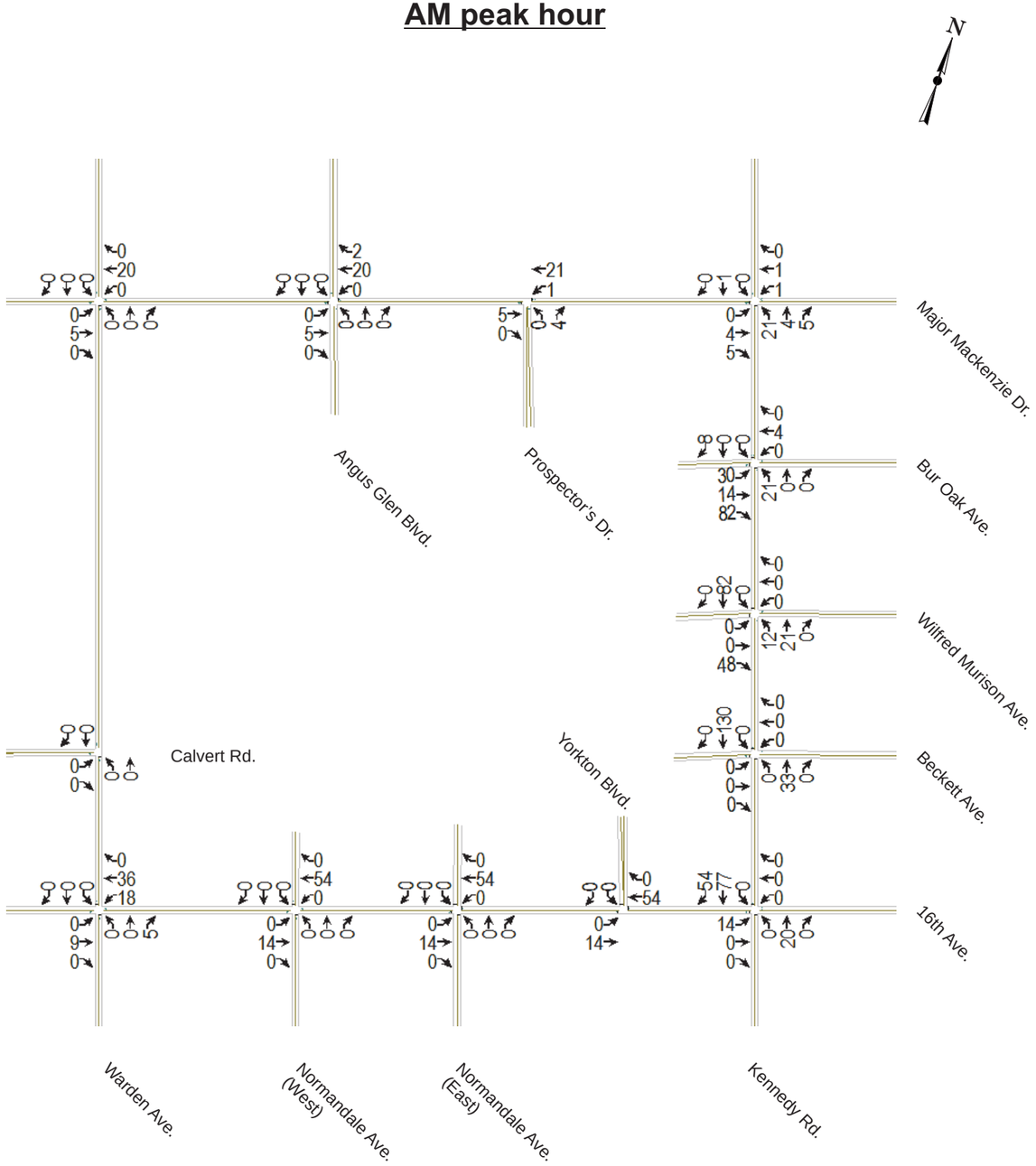
● Subject Land

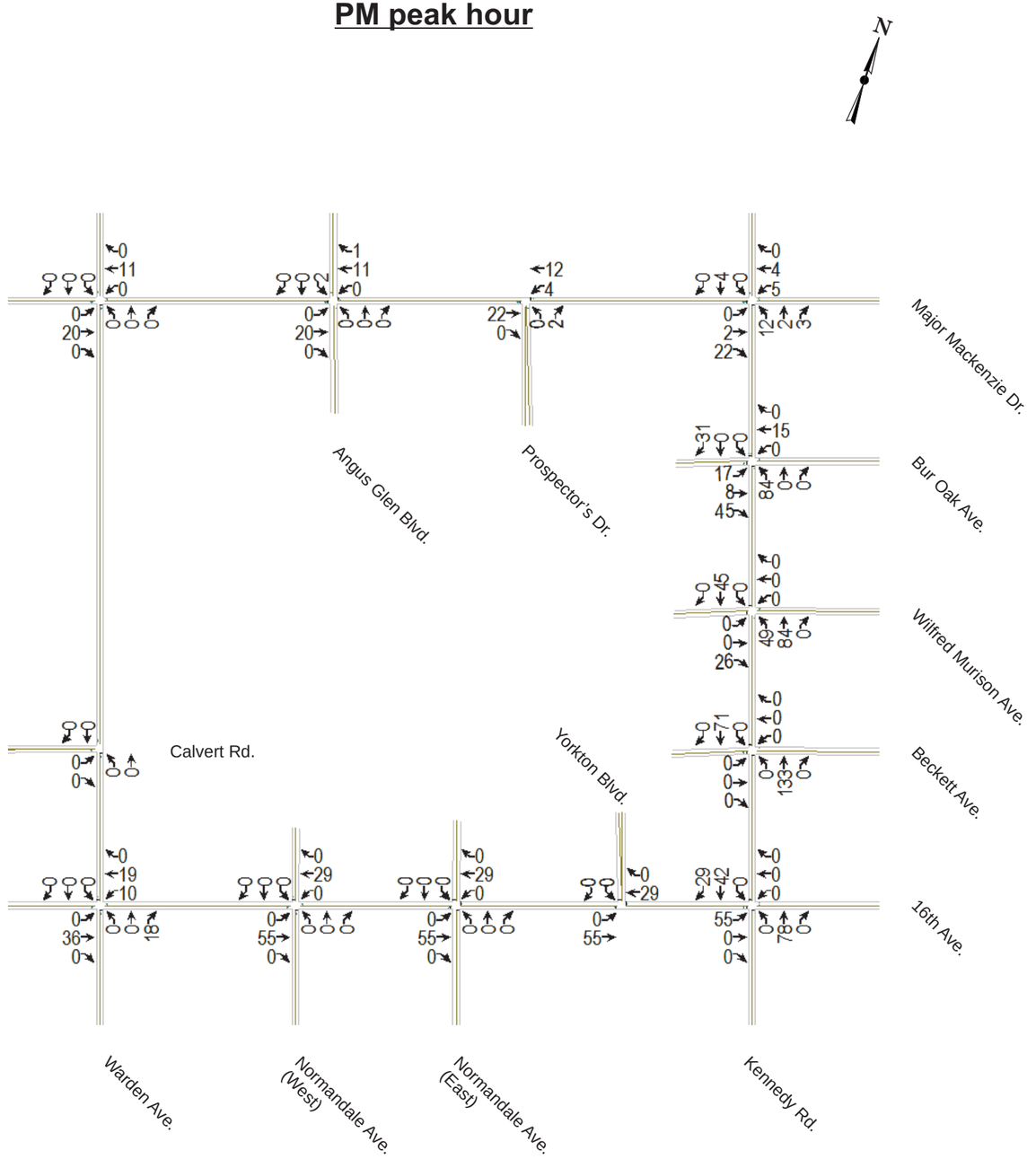
◄► General Trip Distribution

Trip Distribution
Figure 5.5

AM peak hour



PM peak hour



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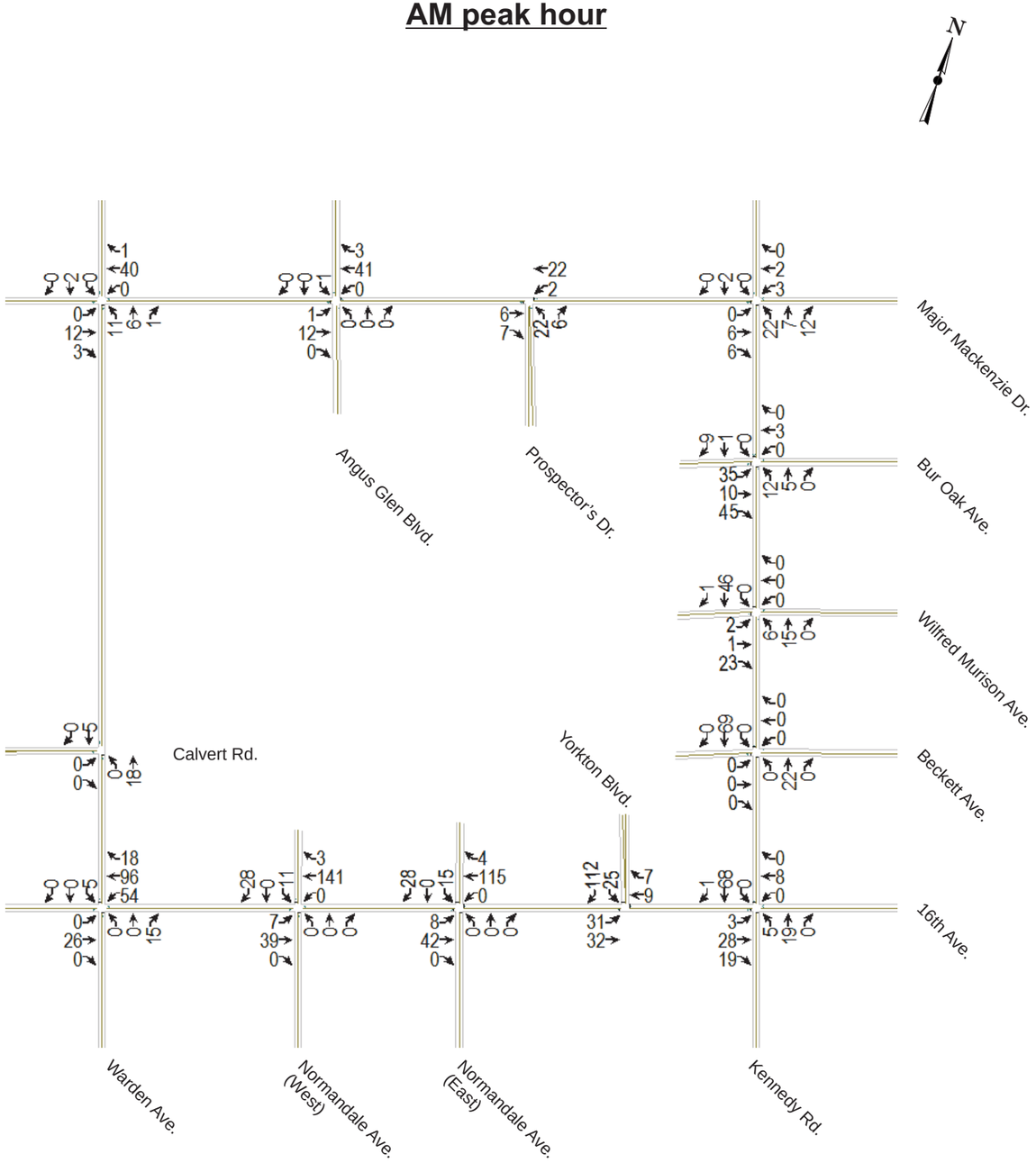
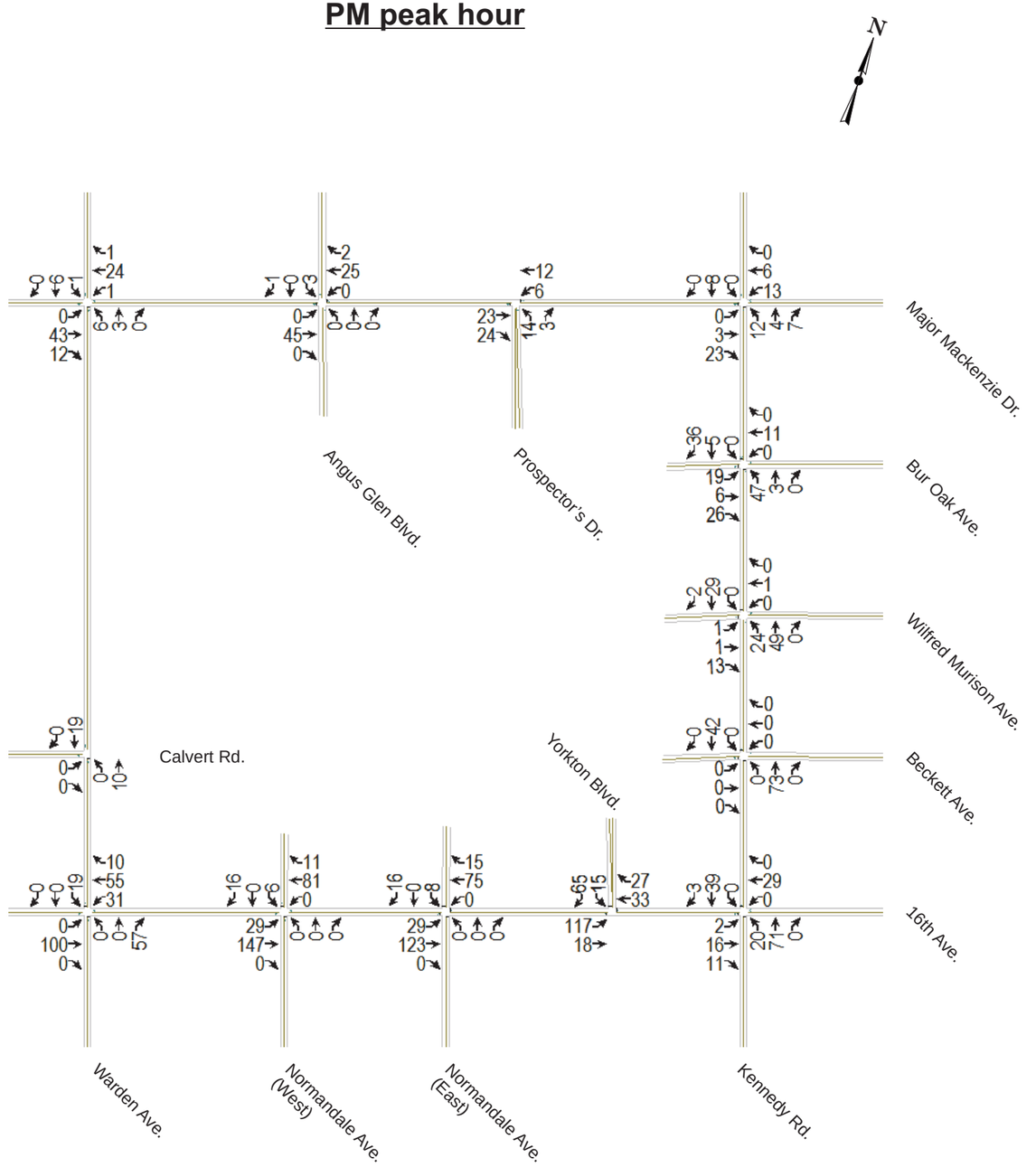
Site Traffic (Stage 1)
2021 Horizon Year
Figure 5.6

AM peak hour



PM peak hour



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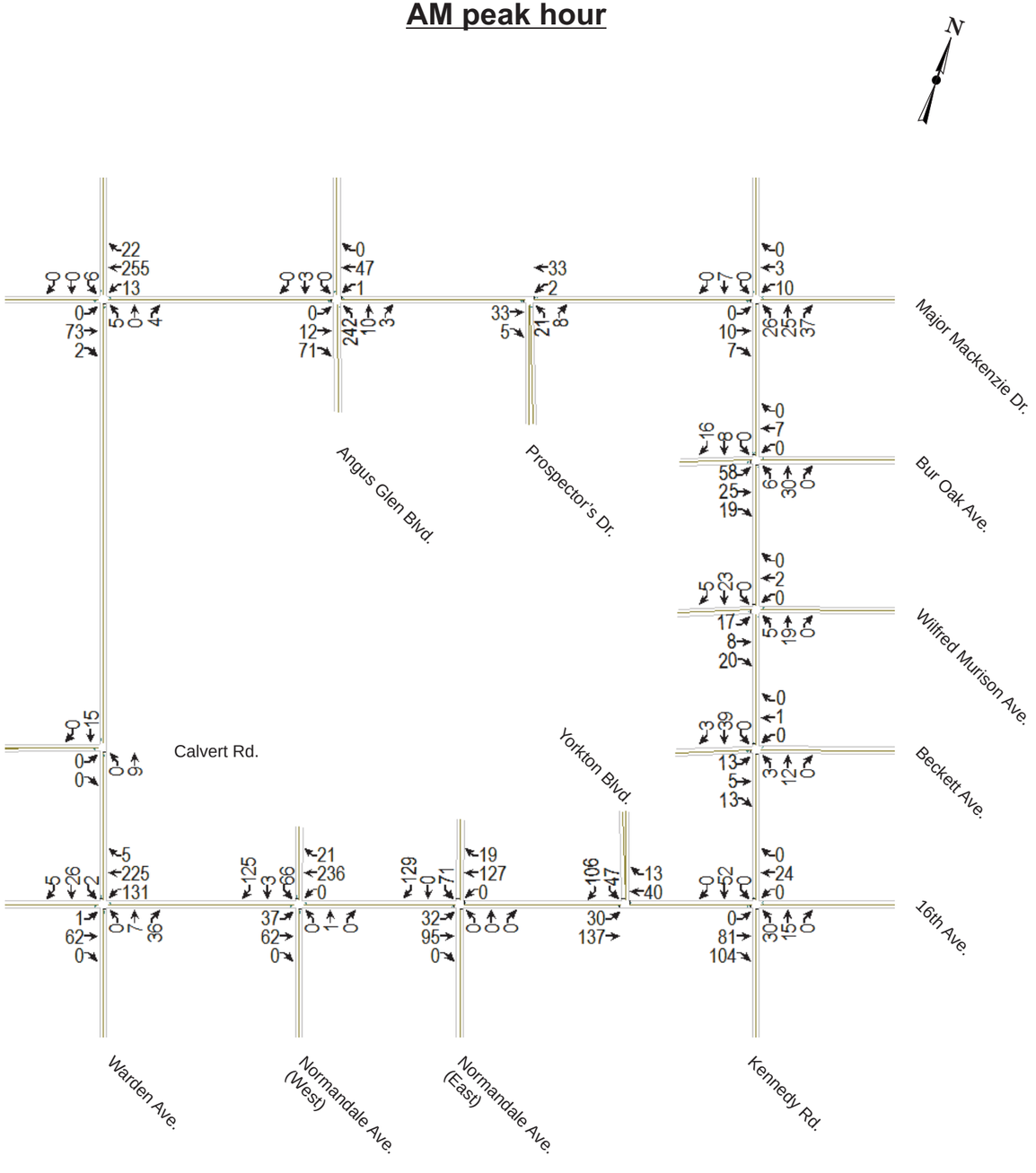
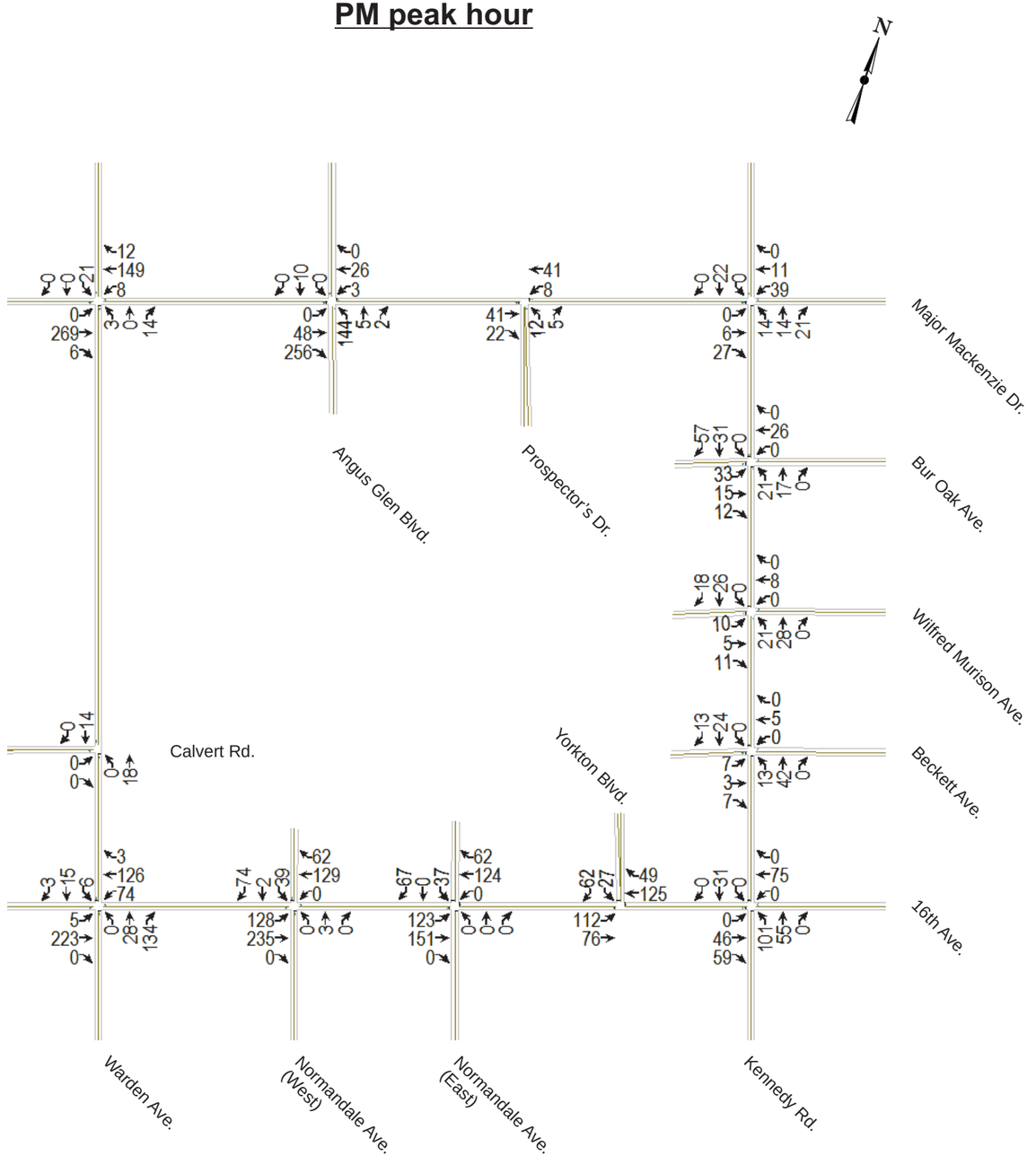
Site Traffic (Stage 2)
2024 Horizon Year
Figure 5.7

AM peak hour



PM peak hour



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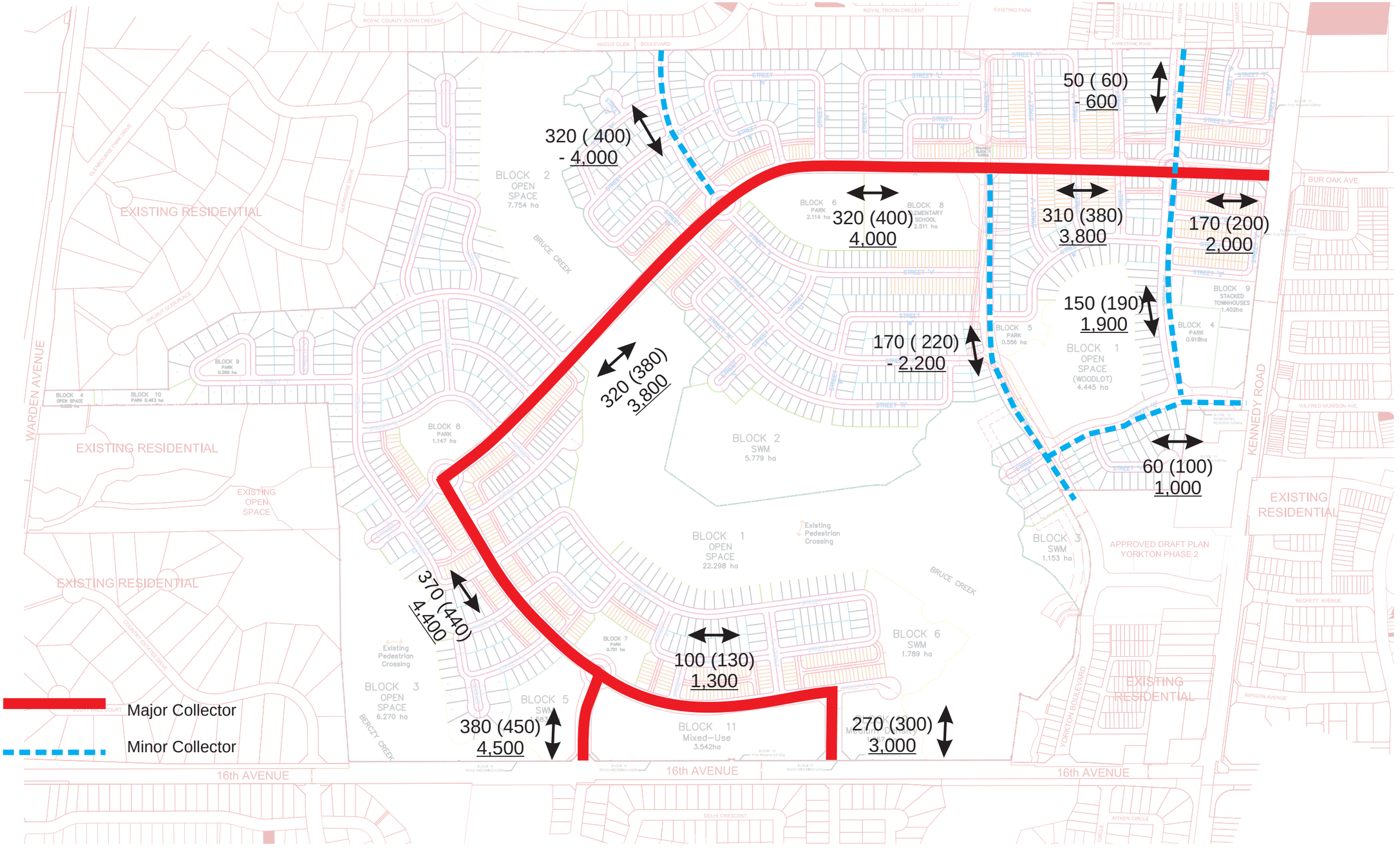
Site Traffic (Stage 3)
2026 Horizon Year
Figure 5.8



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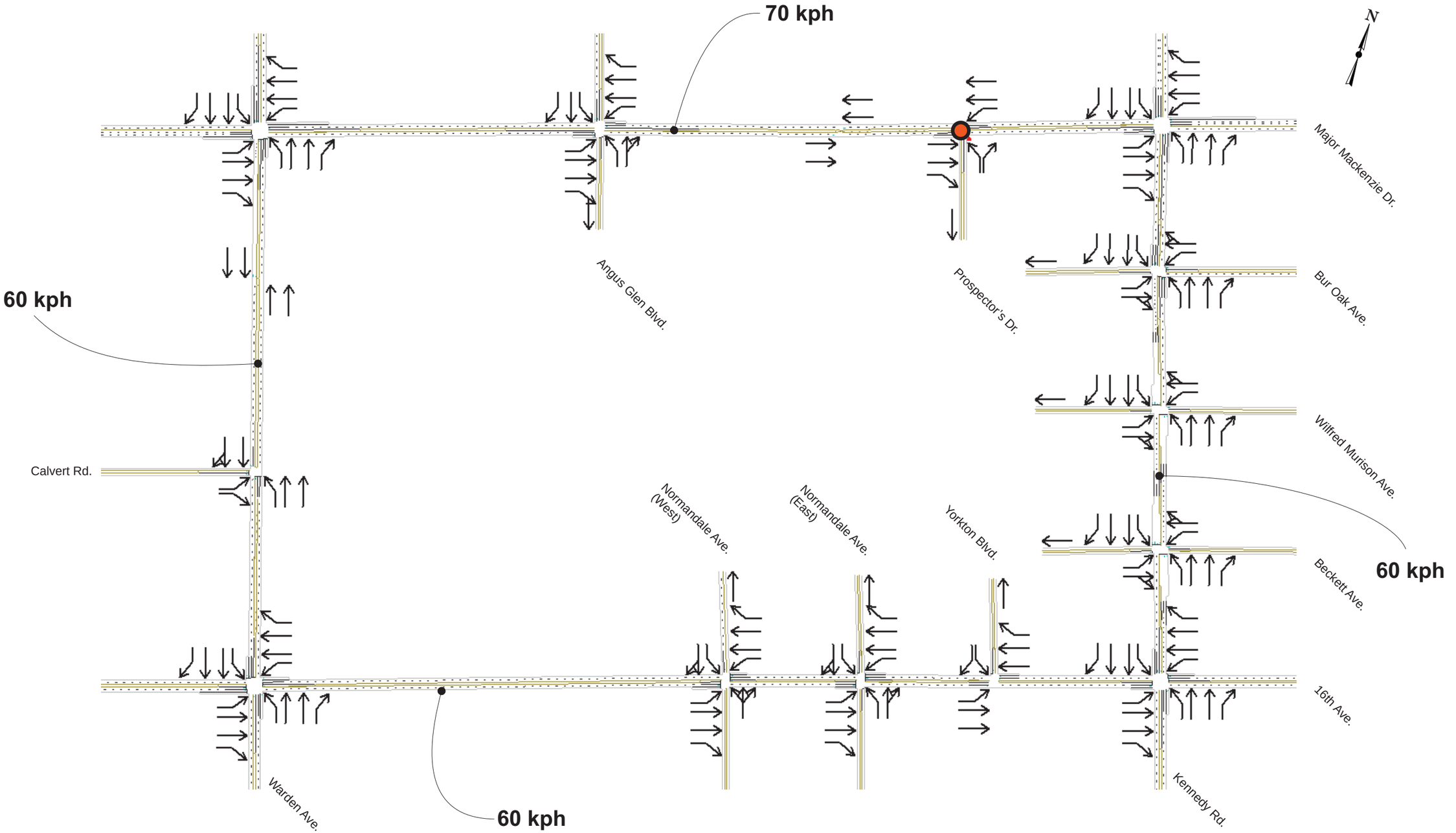
XX (YY)
ZZZZ

Two Way traffic Movement
AM (PM) Peak Hour Volumes
Estimated Daily Traffic (= PM Peak Hour Volumes/0.1)

Collector Roads and Estimated Traffic Volumes
Figure 5.9



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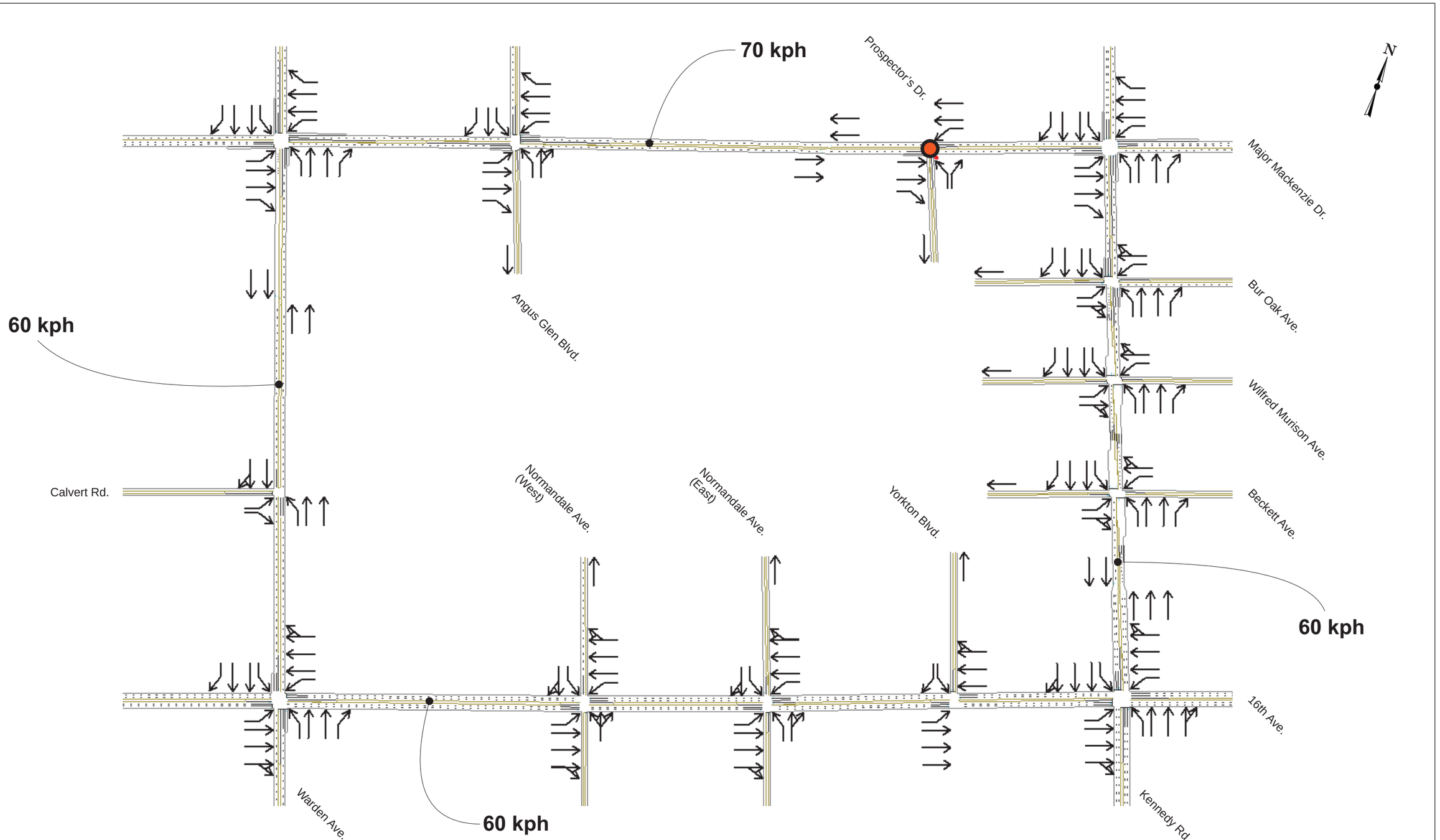
Legend:

Stop controlled intersection

Note: side streets (i.e. collector and local roads) were assumed to have a posted speed limit of 40 or 50 kph.
All intersections are assumed to be under signal control unless stated otherwise.

Lane Configuration
Future Condition (before improvements)
Figure 6.1



Poulos Chung

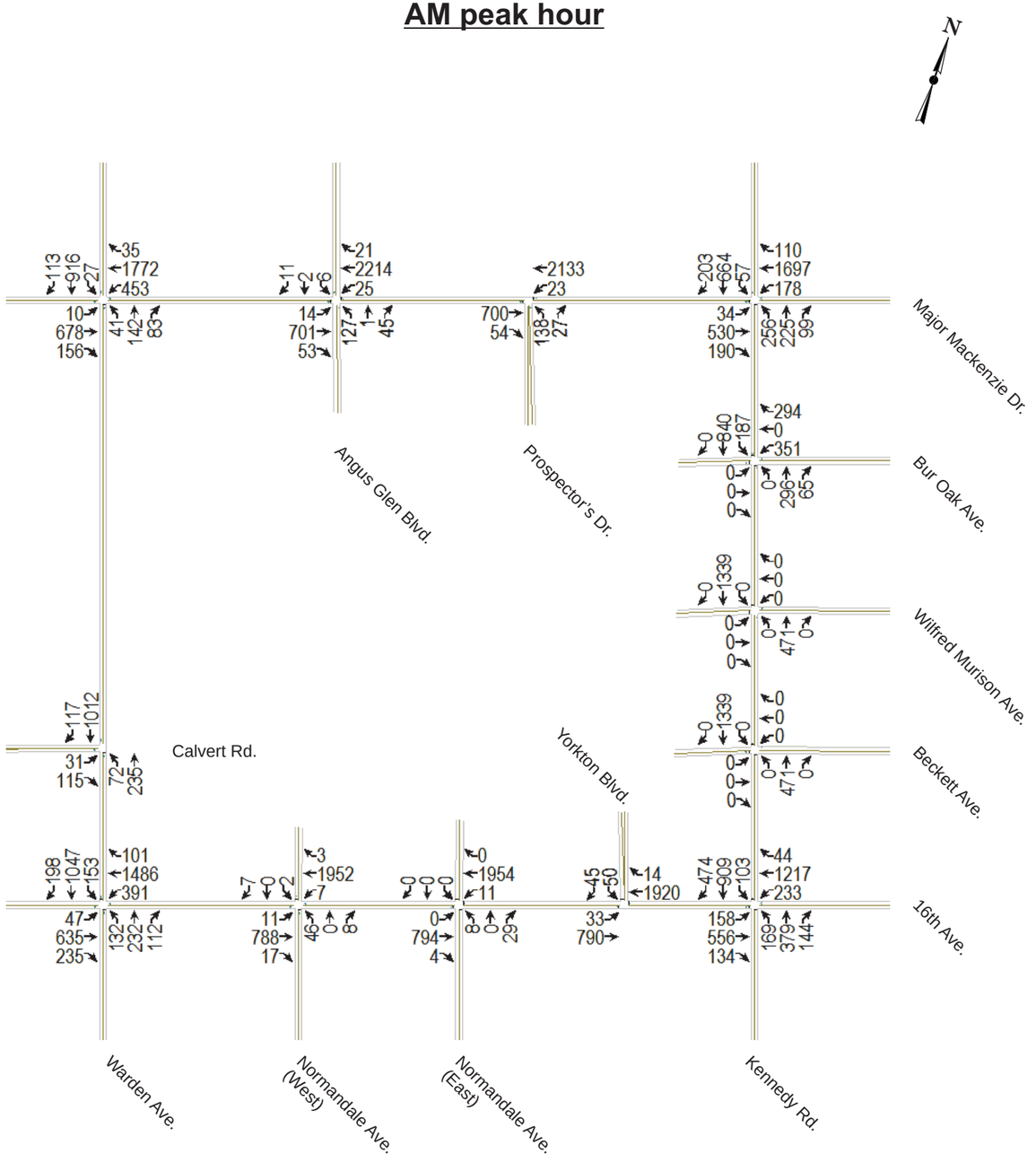
Legend:

Stop controlled intersection

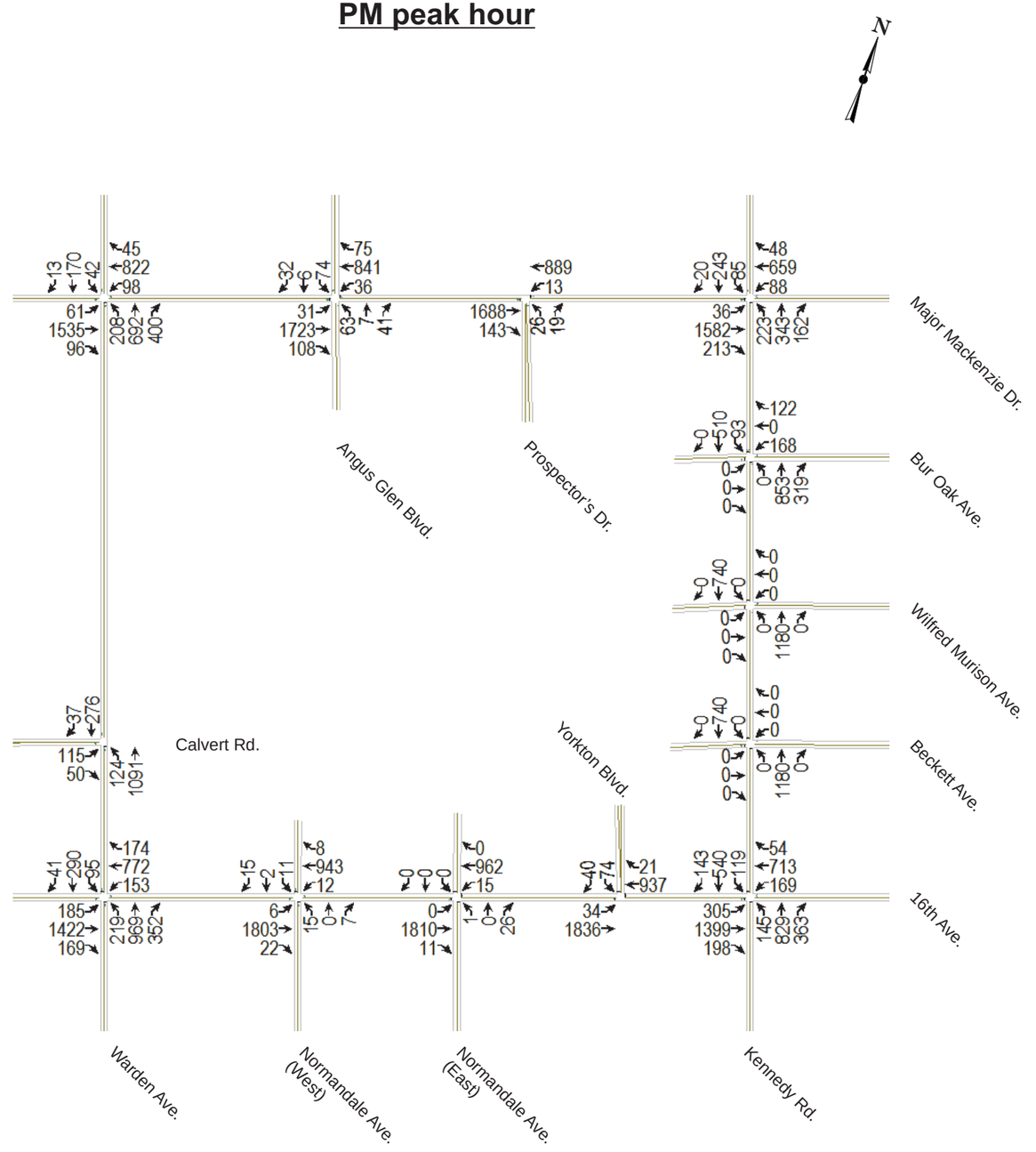
Note: side streets (i.e. collector and local roads) were assumed to have a posted speed limit of 40 or 50 kph.
All intersections are assumed to be under signal control unless stated otherwise.

Lane Configuration
Future Condition (with roadway improvements)
Figure 6.2

AM peak hour



PM peak hour



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Existing Traffic Volumes
Figure 7.1

	Existing		Scenario A Background		Scenario B Background		Scenario C Background		Scenario D Background		Scenario E Background	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1: Bur Oak Ave. & Kennedy Rd.	**B (19) 0.55**	**B (11) 0.42**	**C (22) 0.72**	**B (13) 0.57**	**C (25) 0.69**	**A (9) 0.54**	**B (18) 0.72**	**A (10) 0.57**	**B (18) 0.72**	**A (10) 0.57**	**B (19) 0.74**	**A (10) 0.58**
2: Wilfred Murison Ave. & Kennedy Rd.	**--**	**--**	**A (3) 0.57**	**A (3) 0.53**	**A (3) 0.6**	**A (2) 0.58**	**A (3) 0.63**	**A (2) 0.61**	**A (3) 0.63**	**A (2) 0.61**	**A (4) 0.66**	**A (2) 0.63**
3: Beckett Ave. & Kennedy Rd.	**A (1) 0.41**	**A (1) 0.36**	**A (4) 0.58**	**A (4) 0.54**	**A (6) 0.61**	**A (5) 0.56**	**A (6) 0.64**	**A (6) 0.59**	**A (6) 0.64**	**A (6) 0.59**	**A (6) 0.67**	**A (7) 0.61**
4: 16th Ave. & Kennedy Rd.	**E (57) 0.91** *ebl- 0.88* *wbt- 0.89* *nbl- 0.98* *sbt- 1.03* *sbr- 0.97*	**D (53) 1.04** *ebl- 0.99* *ebt- 0.94* *wbl- 1.17* *nbt- 0.93*	**F (95) 1.05** *ebl- 0.89* *wbt- 0.9* *nbl- 1.05* *sbt- 1.39* *sbr- 0.99*	**F (90) 1.17** *ebl- 1.14* *ebt- 0.98* *wbl- 1.17* *nbl- 0.98* *nbt- 1.33* *sbt- 0.85*	**F (95) 1.05** *ebl- 0.89* *wbt- 0.9* *nbl- 1.05* *sbt- 1.39* *sbr- 0.99*	**F (89) 1.07** *ebl- 1.22* *ebt- 1.33* *wbl- 1.09* *wbt- 0.89* *nbt- 0.95*	**F (103) 1.17** *ebl- 1.03* *wbl- 0.97* *wbt- 1.4* *nbl- 0.88* *sbt- 0.99*	**F (96) 1.11** *ebl- 1.22* *ebt- 1.37* *wbl- 1.09* *wbt- 0.91* *nbt- 1*	**E (61) 0.95** *ebl- 1.03* *wbl- 0.92* *wbt- 1.01* *nbl- 0.88* *sbt- 0.96*	**E (58) 0.97** *ebl- 1.22* *ebt- 1.09* *wbl- 1.09* *nbt- 0.91*	**E (64) 0.97** *ebl- 1.03* *wbl- 0.93* *wbt- 1.03* *nbl- 0.88* *sbt- 0.98*	**E (60) 0.98** *ebl- 1.22* *ebt- 1.11* *wbl- 1.09* *nbt- 0.93*
5: 16th Ave. & Yorkton Blvd.	**A (8) 0.69**	**A (8) 0.68**	**A (10) 0.72**	**A (9) 0.71**	**B (12) 0.78**	**B (13) 0.71**	**B (17) 0.8**	**A (10) 0.73**	**B (11) 0.56**	**A (7) 0.52**	**B (11) 0.57**	**A (7) 0.53**
6: 16th Ave. & Normandale Ave. (east)	**B (15) 0.09 [NB]**	**D (30) 0.17 [NB]**	**B (13) 0.71** *wbt- 0.89*	**B (14) 0.67** *ebt- 0.86*	**D (47) 0.74** *wbt- 1.09*	**A (8) 0.64**	**E (59) 0.77** *wbt- 1.12*	**A (4) 0.66**	**B (15) 0.54**	**A (4) 0.47**	**B (16) 0.55**	**A (4) 0.48**
7: 16th Ave. & Normandale Ave. (west)	**A (6) 0.69**	**A (4) 0.62**	**A (8) 0.74**	**A (6) 0.67**	**A (7) 0.79**	**A (5) 0.66**	**A (7) 0.81**	**A (7) 0.68**	**A (4) 0.58**	**A (3) 0.48**	**A (4) 0.59**	**A (3) 0.49**
8: 16th Ave. & Warden Ave.	**E (56) 1.05** *ebl- 0.88* *wbl- 1.15* *wbt- 0.91* *nbl- 1.07* *sbt- 1.03*	**E (62) 0.94** *ebt- 1.12* *wbl- 0.98* *nbt- 0.95*	**F (82) 1.25** *ebl- 1.28* *wbl- 1.17* *wbt- 0.94* *nbl- 1.07* *sbt- 1.26*	**F (88) 1.14** *ebl- 1.08* *ebt- 1.17* *wbl- 0.98* *nbt- 1.18*	**F (87) 1.16** *ebt- 0.9* *wbl- 0.99* *wbt- 1.18* *nbl- 1.07* *sbt- 1.12*	**F (88) 1.14** *ebl- 1.08* *ebt- 1.17* *wbl- 0.98* *nbt- 1.18*	**F (98) 1.2** *ebt- 0.92* *wbl- 0.99* *wbt- 1.22* *nbl- 1.07* *sbt- 1.18*	**F (98) 1.2** *ebl- 0.87* *ebt- 1.3* *nbt- 1.16* *sbl- 0.98*	**E (68) 1.02** *ebt- 0.86* *wbl- 0.99* *wbt- 0.92* *nbl- 1.07* *sbt- 1.18*	**E (66) 1** *ebl- 0.87* *ebt- 1.02* *nbt- 1.16* *sbl- 0.98*	**E (74) 1.04** *ebt- 0.87* *wbl- 0.99* *wbt- 0.93* *nbl- 1.07* *sbt- 1.22*	**E (73) 1.02** *ebl- 0.88* *ebt- 1.03* *nbt- 1.2* *sbl- 0.98*
9: Major Mackenzie Dr. & Prospectors Dr.	**C (24) 0.44 [NBL]**	**E (50) 0.26 [NBL]**	**D (35) 0.56 [NBL]**	**F (65) 0.32 [NBL]**	**D (35) 0.56 [NBL]**	**F (65) 0.32 [NBL]**	**E (37) 0.58 [NBL]**	**F (71) 0.34 [NBL]**	**E (37) 0.58 [NBL]**	**F (71) 0.34 [NBL]**	**E (39) 0.6 [NBL]**	**F (76) 0.36 [NBL]**
10: Major Mackenzie Dr. & Kennedy Rd.	**E (59) 0.97** *wbt- 1.11* *nbl- 0.91*	**D (54) 0.83** *ebt- 1.1*	**E (77) 1.06** *wbt- 1.17* *nbl- 1.04* *sbt- 1.06*	**E (71) 1.04** *ebt- 1.21* *nbl- 0.93*	**E (77) 1.06** *wbt- 1.17* *nbl- 1.04* *sbt- 1.06*	**D (53) 1.01** *ebt- 1.1* *nbl- 1.05*	**E (80) 1.11** *wbt- 1.1* *nbl- 1.23* *sbt- 1.15*	**E (58) 1.04** *ebt- 1.13* *nbl- 1.08*	**E (79) 1.11** *wbt- 1.1* *nbl- 1.23* *sbt- 1.15*	**E (58) 1.04** *ebt- 1.13* *nbl- 1.08*	**F (86) 1.12** *wbt- 1.13* *nbl- 1.23* *sbt- 1.19*	**E (62) 1.06** *ebt- 1.15* *nbl- 1.11*
11: Major Mackenzie Dr. & Warden Ave.	**D (49) 1.06** *wbl- 1.26* *wbt- 0.99* *sbt- 0.85*	**C (35) 0.86** *ebt- 0.97*	**F (83) 1.24** *ebl- 0.97* *wbl- 1.43* *wbt- 1.12* *sbt- 1.1*	**E (66) 1.16** *ebl- 1.02* *ebt- 1.17* *nbt- 0.92* *sbl- 1.06*	**E (71) 1.16** *ebl- 1.16* *wbl- 0.96* *wbt- 1.05* *sbt- 1.14*	**E (71) 1.1** *ebt- 1.16* *nbt- 1.09*	**F (81) 1.2** *ebl- 1.16* *wbl- 0.97* *wbt- 1.08* *sbt- 1.2*	**F (82) 1.14** *ebt- 1.19* *nbt- 1.14*	**F (81) 1.2** *ebl- 1.16* *wbl- 0.97* *wbt- 1.08* *sbt- 1.2*	**F (82) 1.14** *ebt- 1.19* *nbt- 1.14*	**F (89) 1.15** *ebl- 1.16* *wbl- 0.97* *wbt- 1.1* *sbt- 1.24*	**F (88) 1.17** *ebt- 1.21* *nbt- 1.17*
12: Major Mackenzie Dr. & Angus Glen C.C. (East)	**B (19) 0.89** *wbt- 0.93*	**A (10) 0.67**	**C (32) 0.95** *wbt- 1.01*	**B (17) 0.79**	**E (61) 1** *ebl- 0.88* *wbt- 1.12*	**B (18) 0.78**	**E (73) 1.02** *ebl- 0.88* *wbt- 1.15*	**B (18) 0.79**	**E (73) 1.02** *ebl- 0.88* *wbt- 1.15*	**B (18) 0.79**	**E (79) 1.04** *ebl- 0.88* *wbt- 1.17*	**B (19) 0.81**

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Legend:

For signalized intersections:

Level of Service (Delay in seconds) Volume over capacity Ratio

Movements with a V/C ≥ 0.85 → **B (15) 0.13** *ebr- 0.85*

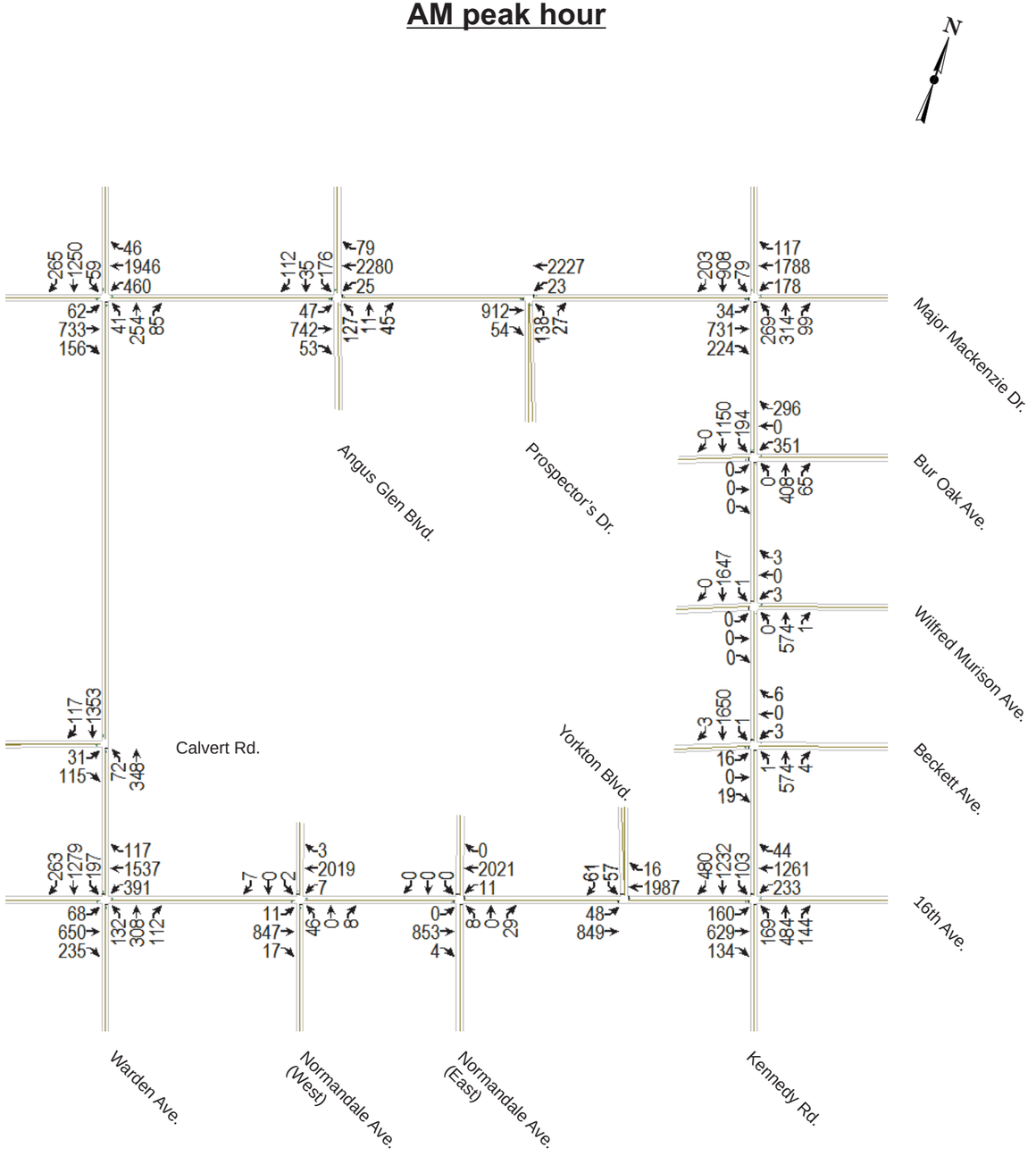
For stop-controlled intersections:

B (15) 0.13 [NBR] ← Worst performing movement (e.g. northbound right)

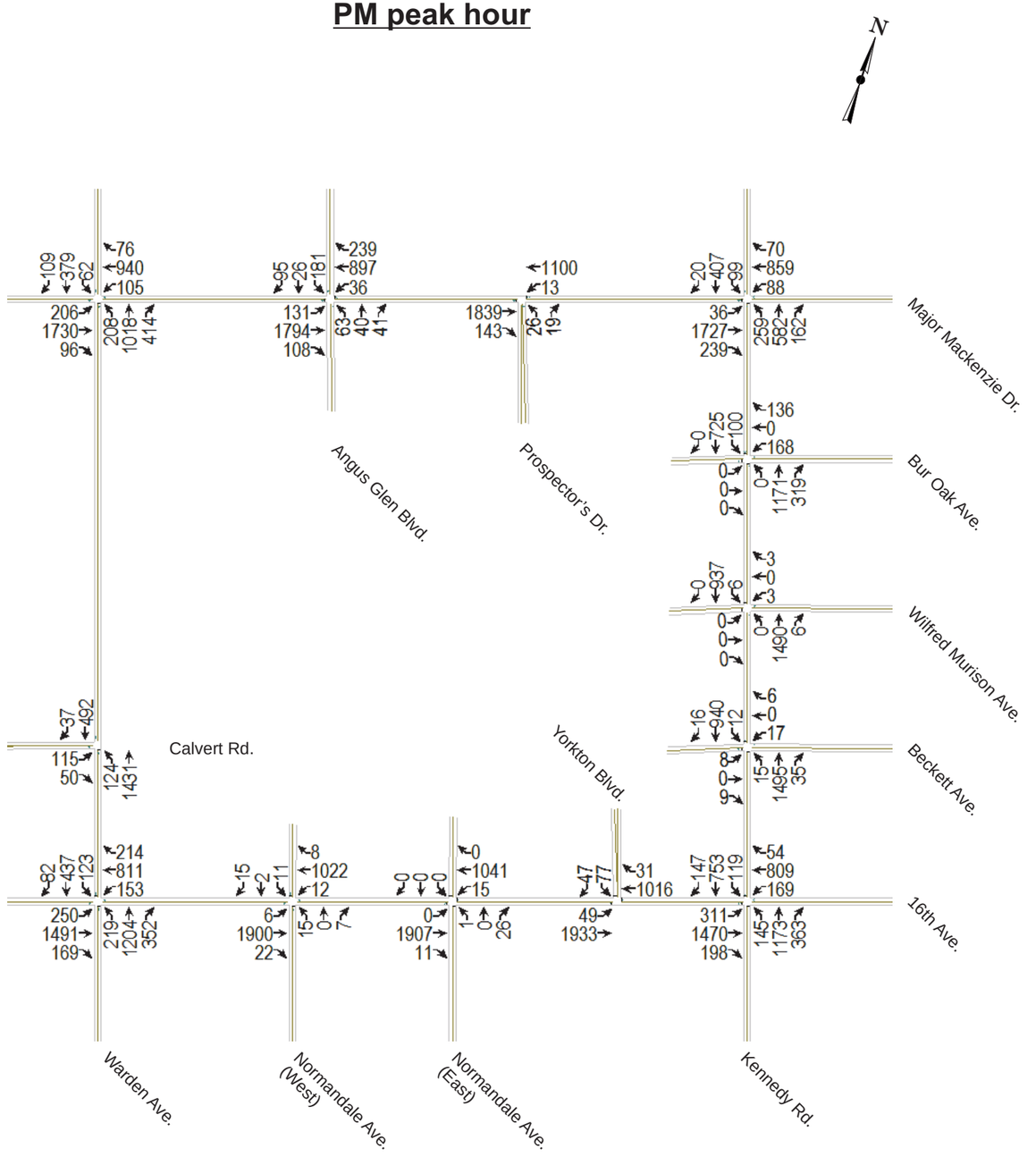
Level of Service (Delay in seconds) Volume over capacity Ratio

Level of Service Summaries
Existing & Background Traffic Volumes
Figure 7.2

AM peak hour



PM peak hour



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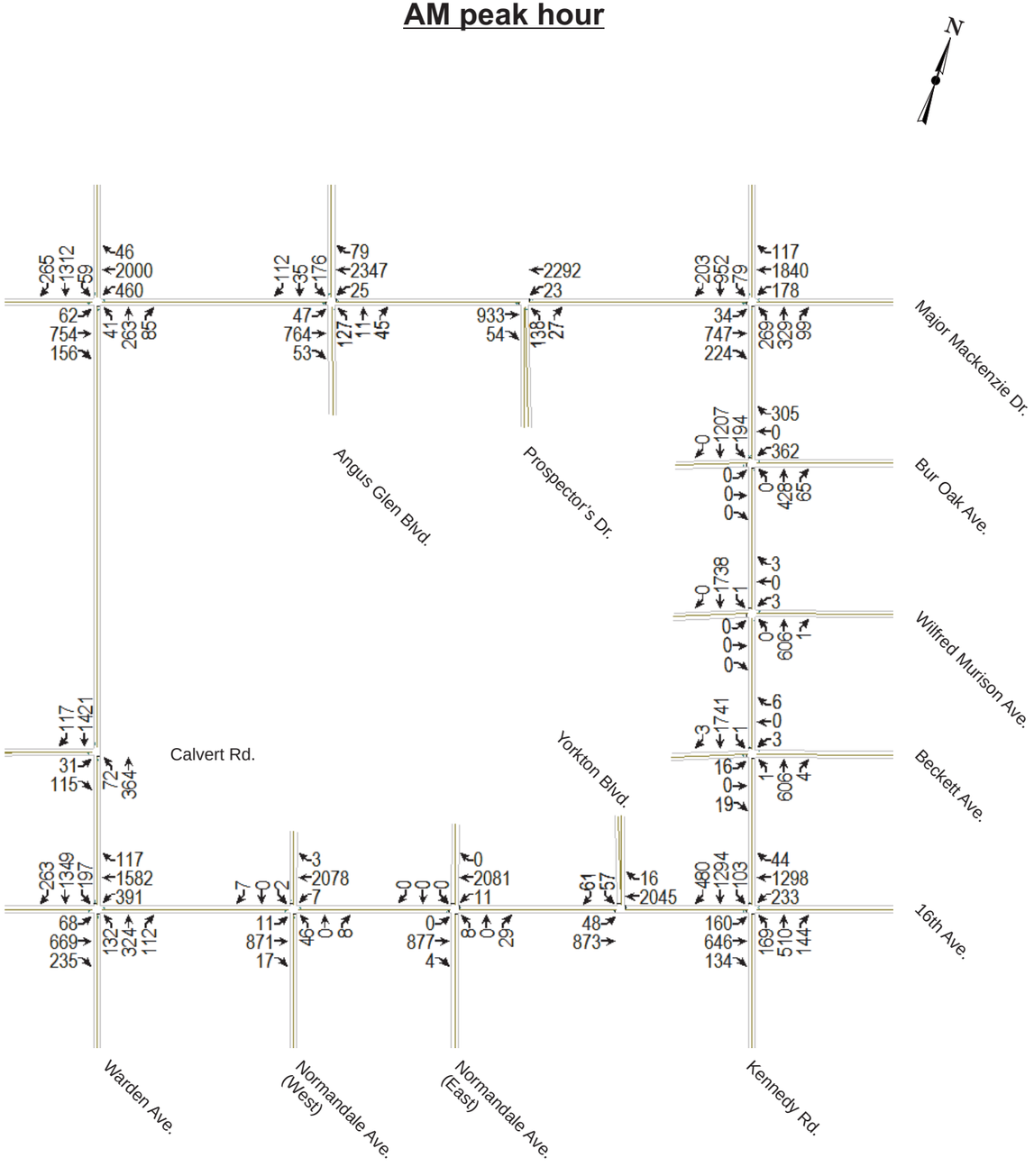
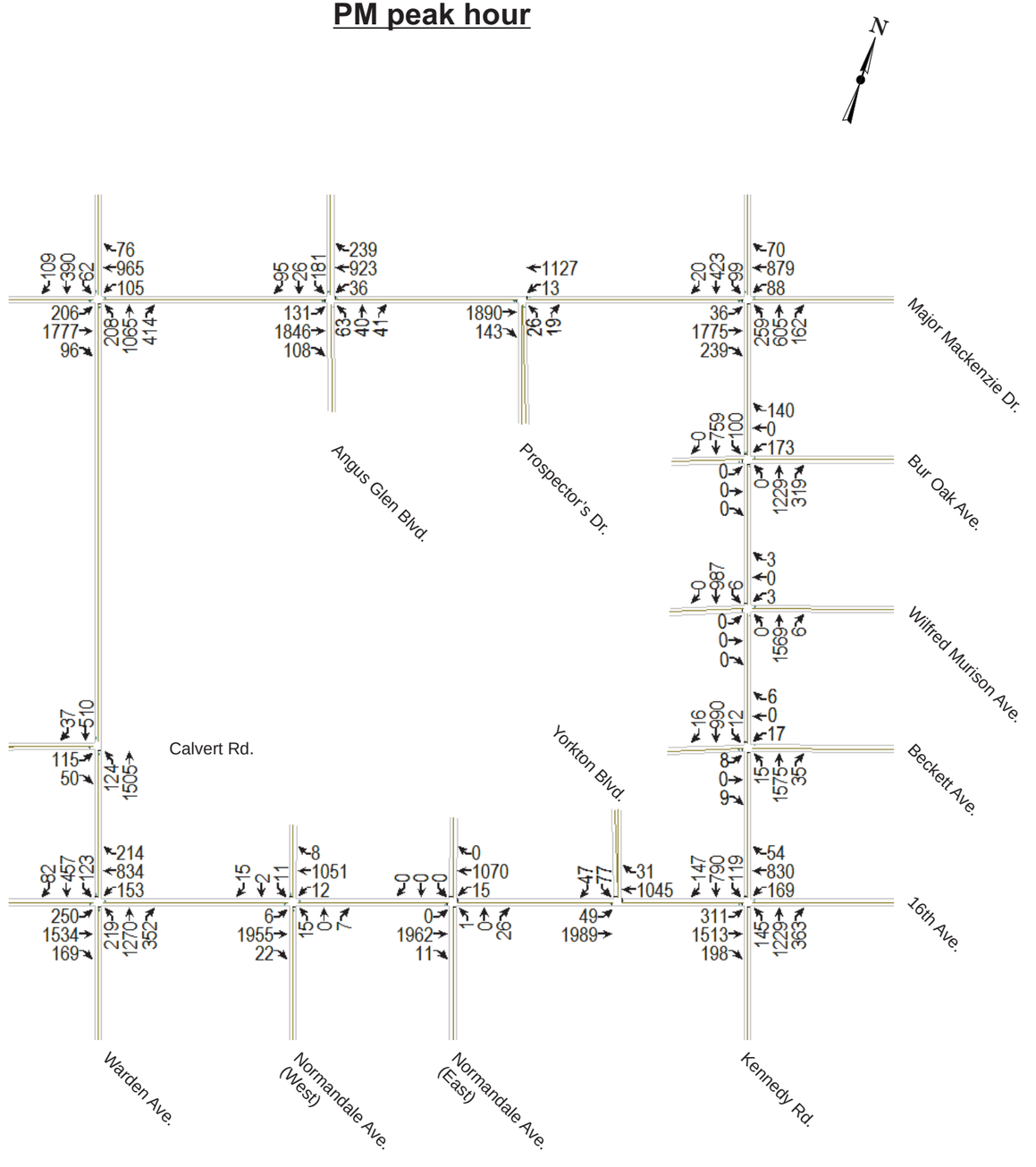
Background Traffic
2021 Horizon Year
Figure 7.3

AM peak hour



PM peak hour



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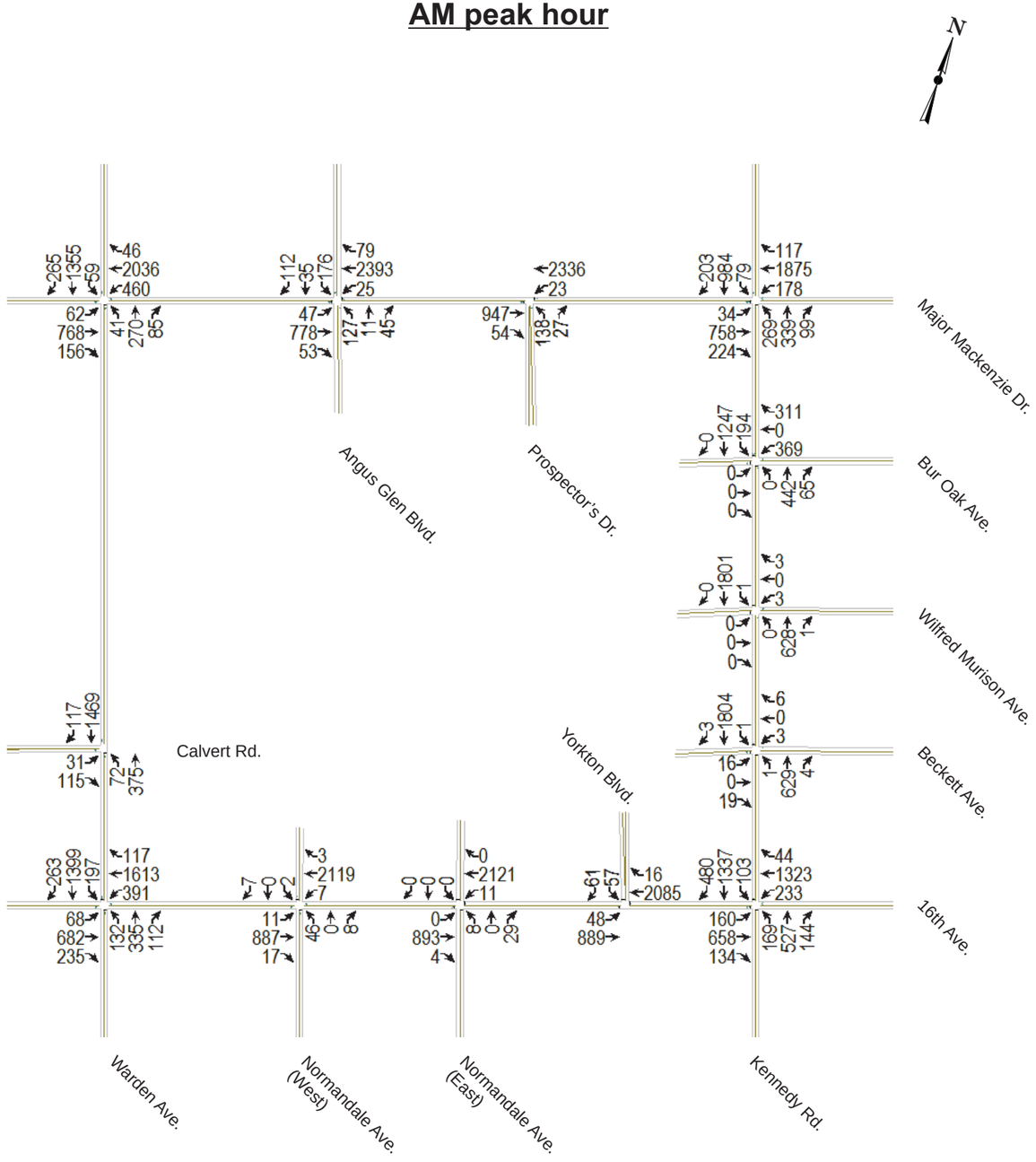
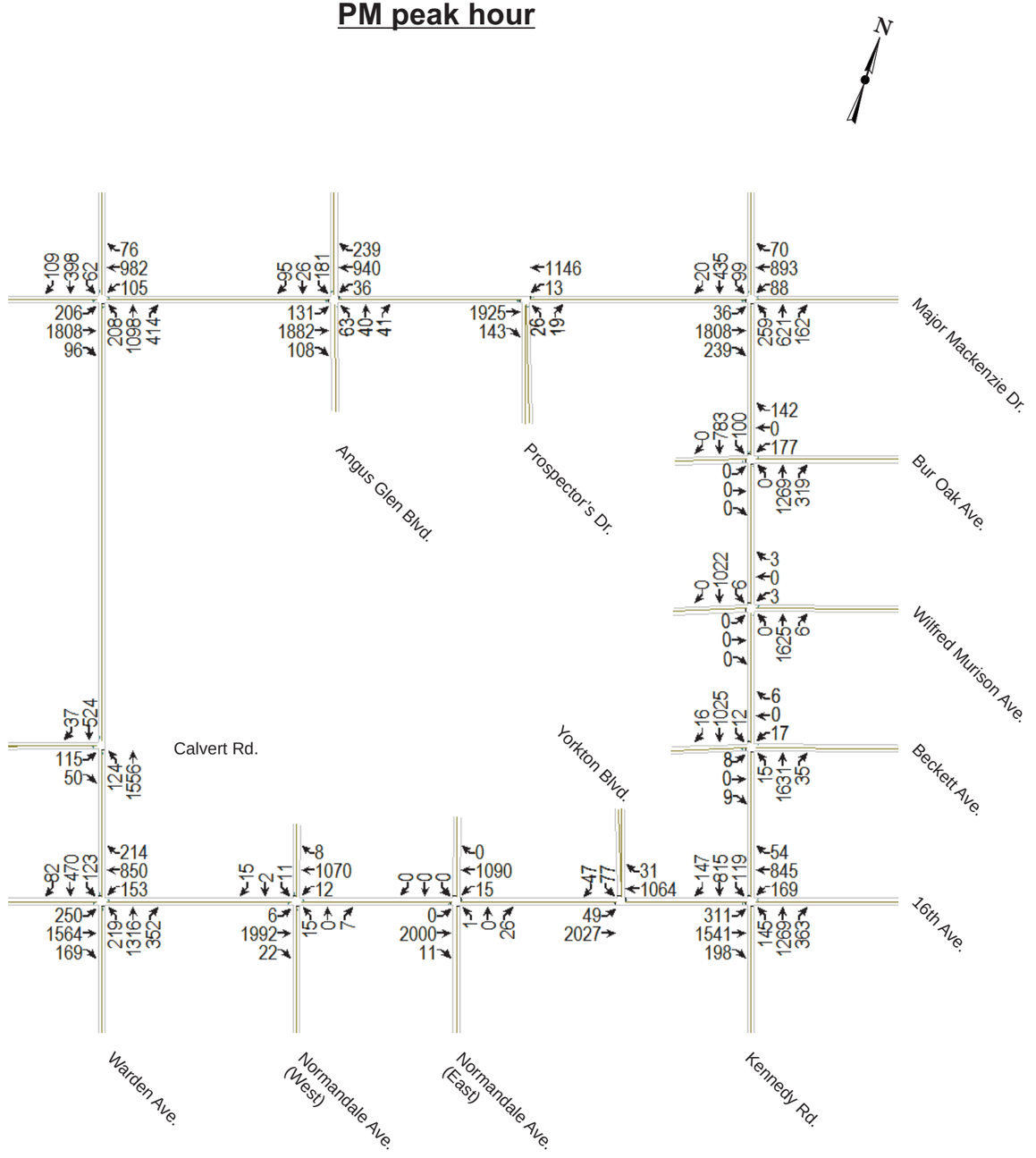
Background Traffic
2024 Horizon Year
Figure 7.4

AM peak hour



PM peak hour



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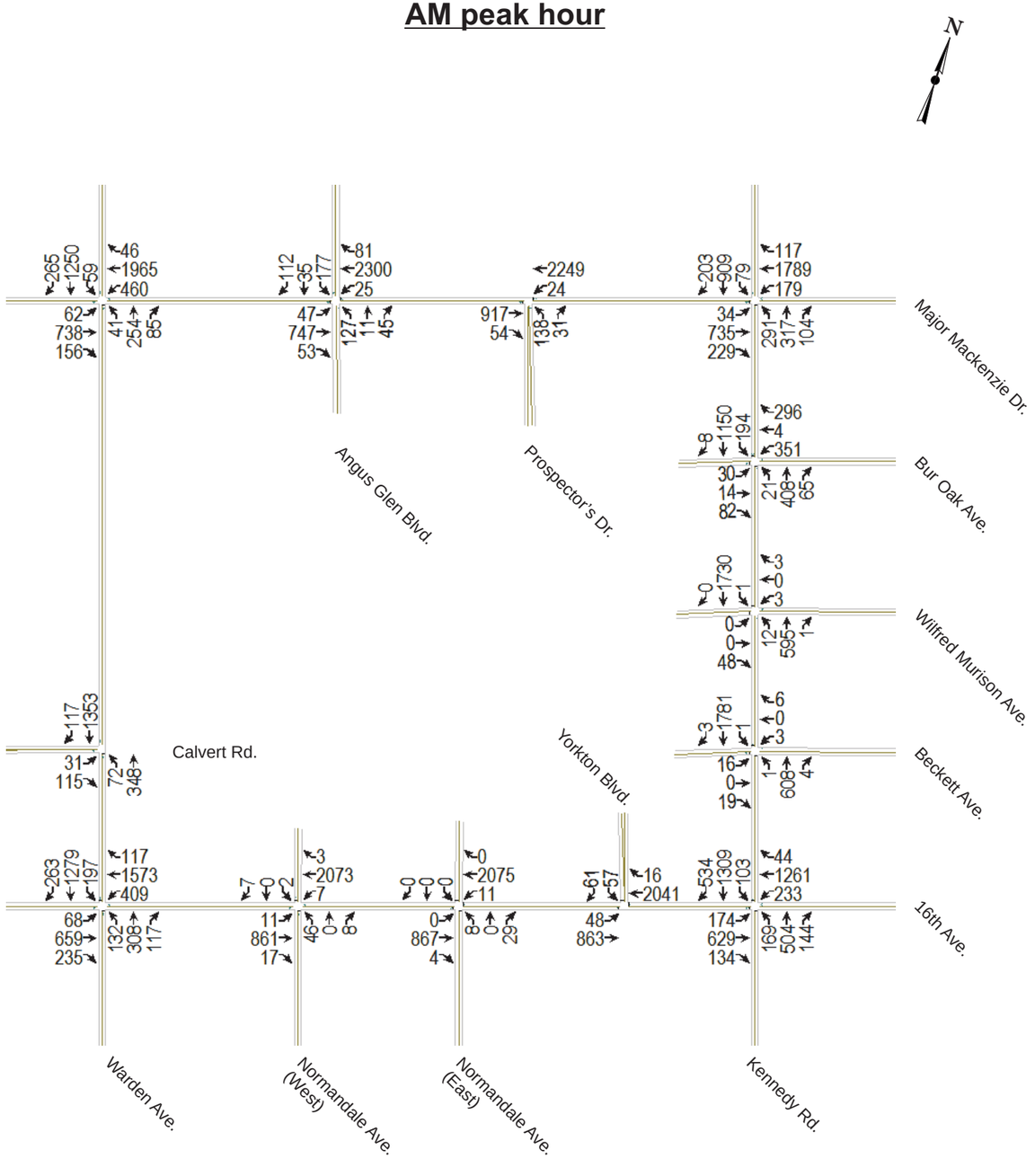
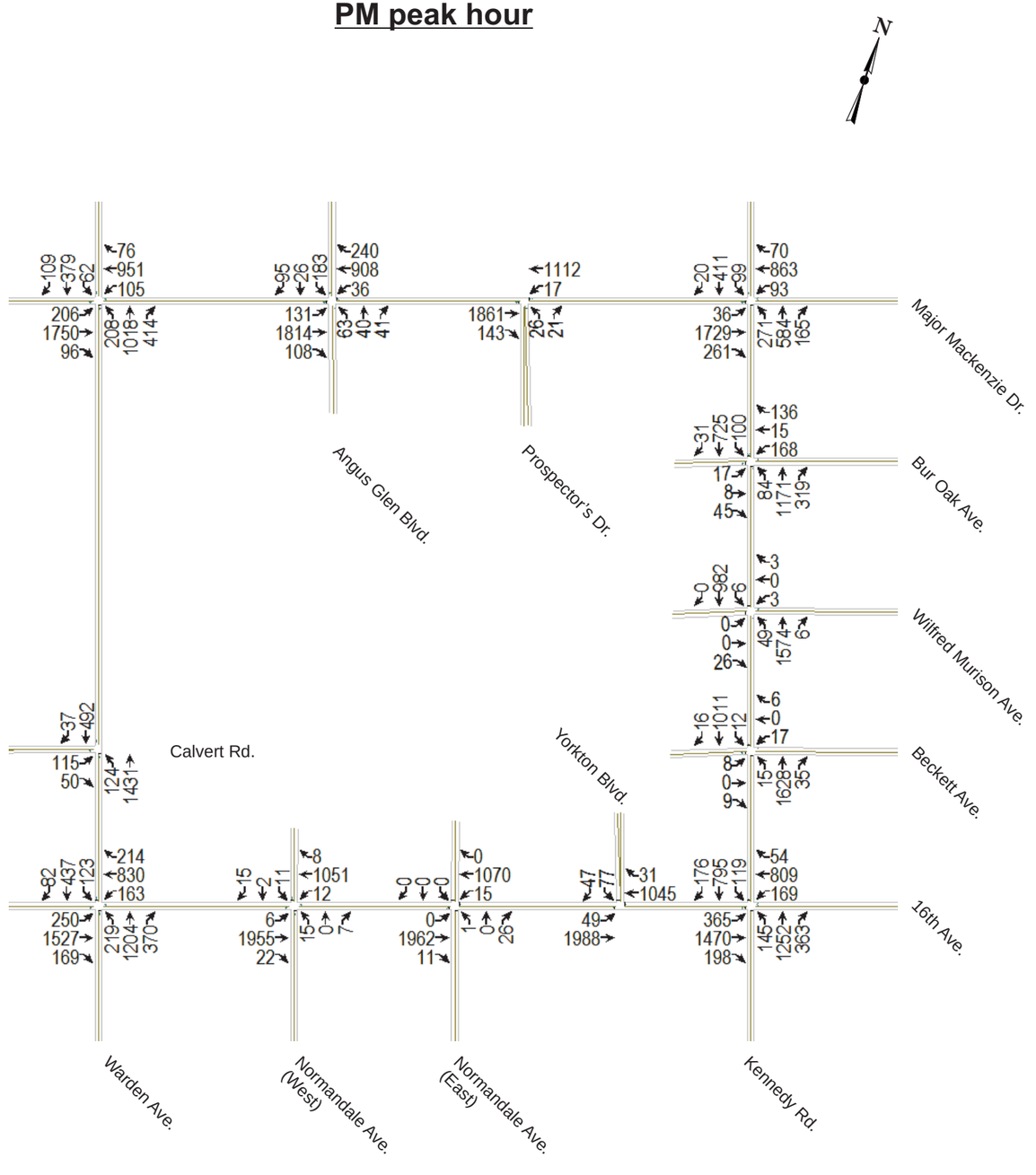
Background Traffic
2026 Horizon Year
Figure 7.5

AM peak hour



PM peak hour



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Total Traffic
2021 Horizon Year
Figure 8.1

	Scenario A Total		Scenario B Total		Scenario C Total		Scenario D Total		Scenario E Total	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1: Bur Oak Ave. & Kennedy Rd.	**C (24) 0.75** *wbl- 0.87*	**B (13) 0.57**	**C (27) 0.72** *wbl- 0.86*	**B (10) 0.55**	**B (20) 0.74** *wbl- 0.85*	**B (10) 0.57**	**B (19) 0.74** *wbl- 0.85*	**B (11) 0.57**	**B (20) 0.76** *wbl- 0.85*	**B (11) 0.59**
2: Wilfred Murison Ave. & Kennedy Rd.	**A (5) 0.62**	**A (4) 0.56**	**A (5) 0.66**	**A (2) 0.61**	**A (4) 0.66**	**A (2) 0.63**	**A (4) 0.66**	**A (2) 0.63**	**A (5) 0.68**	**A (3) 0.65**
3: Beckett Ave. & Kennedy Rd.	**A (4) 0.62**	**A (4) 0.59**	**A (6) 0.66**	**A (6) 0.6**	**A (6) 0.67**	**A (7) 0.61**	**A (6) 0.67**	**A (7) 0.61**	**A (8) 0.7**	**A (7) 0.62**
4: 16th Ave. & Kennedy Rd.	**F (112) 1.13** *ebl- 0.97* *wbt- 0.9* *nbl- 1.05* *sbt- 1.48* *sbr- 1.12*	**F (105) 1.3** *ebl- 1.34* *ebt- 0.98* *wbl- 1.17* *nbl- 1.01* *nbt- 1.41* *sbt- 0.9*	**F (98) 1.16** *ebl- 1.12* *wbl- 0.94* *wbt- 1.36* *nbl- 0.88* *sbt- 1*	**F (98) 1.09** *ebl- 1.44* *ebt- 1.33* *wbl- 1.09* *wbt- 0.89* *nbt- 1.02*	**F (107) 1.16** *ebl- 1.05* *ebt- 0.87* *wbl- 1* *wbt- 1.41* *nbl- 0.9* *sbt- 1.04*	**F (102) 1.14** *ebl- 1.23* *ebt- 1.38* *wbl- 1.09* *wbt- 0.95* *nbt- 1.05*	**E (64) 0.95** *ebl- 1.05* *wbl- 0.96* *wbt- 1.02* *nbl- 0.9* *sbt- 0.99*	**E (61) 0.99** *ebl- 1.23* *ebt- 1.11* *wbl- 1.09* *nbt- 0.95*	**E (70) 0.95** *ebl- 1.03* *ebt- 0.87* *wbl- 1* *wbt- 1.05* *nbl- 1.03* *sbt- 1.01*	**E (72) 0.98** *ebl- 1.22* *ebt- 1.17* *wbl- 1.09* *nbl- 0.87* *nbt- 0.96*
5: 16th Ave. & Yorkton Blvd.	**A (10) 0.74**	**A (9) 0.73**	**B (17) 0.78**	**A (10) 0.73**	**C (23) 0.81** *wbt- 0.88*	**B (12) 0.74**	**B (16) 0.6**	**A (8) 0.57**	**B (17) 0.64**	**A (9) 0.66**
6: 16th Ave. & Normandale Ave. (east)	**B (14) 0.72** *wbt- 0.91*	**B (14) 0.68** *ebt- 0.87*	**E (58) 0.76** *wbt- 1.12*	**A (4) 0.66**	**E (74) 0.82** *wbt- 1.18*	**A (5) 0.71**	**B (14) 0.58**	**A (4) 0.5**	**B (15) 0.68** *wbt- 0.85*	**A (5) 0.53**
7: 16th Ave. & Normandale Ave. (west)	**A (8) 0.76**	**A (6) 0.69**	**A (7) 0.81**	**A (7) 0.68**	**B (10) 0.87** *wbt- 0.89*	**A (10) 0.73**	**A (5) 0.62**	**A (4) 0.52**	**A (10) 0.67**	**A (7) 0.58**
8: 16th Ave. & Warden Ave.	**F (85) 1.18** *ebl- 1.28* *wbl- 1.24* *wbt- 0.96* *nbl- 1.07* *sbt- 1.26*	**F (93) 1.16** *ebl- 1.11* *ebt- 1.2* *wbl- 1.05* *nbt- 1.18*	**F (91) 1.17** *ebt- 0.91* *wbl- 1.03* *wbt- 1.21* *nbl- 1.07* *sbt- 1.12*	**F (90) 1.16** *ebl- 1.11* *ebt- 1.2* *wbl- 1.05* *nbt- 1.18*	**F (110) 1.24** *ebt- 0.96* *wbl- 1.12* *wbt- 1.29* *nbl- 1.07* *sbt- 1.18*	**F (114) 1.25** *ebl- 0.91* *ebt- 1.41* *wbl- 0.92* *wbt- 0.88* *nbt- 1.16* *sbl- 1.12*	**E (74) 1.09** *ebt- 0.88* *wbl- 1.12* *wbt- 0.98* *nbl- 1.07* *sbt- 1.18*	**E (76) 1.04** *ebl- 0.91* *ebt- 1.09* *wbl- 0.92* *nbt- 1.16* *sbl- 1.12*	**F (95) 1.21** *ebt- 0.94* *wbl- 1.32* *wbt- 1.06* *nbl- 1.07* *sbt- 1.25*	**F (96) 1.1** *ebl- 0.91* *ebt- 1.18* *wbl- 1.13* *nbt- 1.23* *sbl- 1.02*
9: Major Mackenzie Dr. & Prospectors Dr.	**D (35) 0.56 [NBL]**	**F (67) 0.33 [NBL]**	**D (35) 0.56 [NBL]**	**F (67) 0.33 [NBL]**	**E (46) 0.68 [NBL]**	**F (96) 0.55 [NBL]**	**E (46) 0.68 [NBL]**	**F (96) 0.55 [NBL]**	**E (50) 0.71 [NBL]**	**F (105) 0.56 [NBL]**
10: Major Mackenzie Dr. & Kennedy Rd.	**E (79) 1.1** *wbt- 1.17* *nbl- 1.13* *sbt- 1.06*	**E (71) 1.03** *ebt- 1.21* *nbl- 0.98*	**E (79) 1.1** *wbt- 1.17* *nbl- 1.13* *sbt- 1.06*	**D (54) 1.03** *ebt- 1.1* *nbl- 1.11*	**F (83) 1.15** *wbt- 1.11* *nbl- 1.33* *sbt- 1.15*	**E (60) 1.07** *ebt- 1.13* *nbl- 1.15*	**F (82) 1.15** *wbt- 1.11* *nbl- 1.33* *sbt- 1.15*	**E (60) 1.07** *ebt- 1.13* *nbl- 1.15*	**F (89) 1.17** *wbt- 1.13* *nbl- 1.35* *sbt- 1.2*	**E (65) 1.11** *ebt- 1.15* *wbl- 0.89* *nbl- 1.22*
11: Major Mackenzie Dr. & Warden Ave.	**F (85) 1.25** *ebl- 0.97* *wbl- 1.44* *wbt- 1.13* *sbt- 1.1*	**E (68) 1.17** *ebl- 1.04* *ebt- 1.18* *nbt- 0.92* *sbl- 1.06*	**E (72) 1.17** *ebl- 1.16* *wbl- 0.96* *wbt- 1.06* *sbt- 1.14*	**E (78) 1.11** *ebt- 1.17* *nbt- 1.09*	**F (86) 1.14** *ebl- 1.16* *wbl- 0.97* *wbt- 1.1* *nbl- 0.98* *sbt- 1.2*	**F (86) 1.16** *ebt- 1.22* *nbt- 1.14*	**F (86) 1.14** *ebl- 1.16* *wbl- 0.97* *wbt- 1.1* *nbl- 0.98* *sbt- 1.2*	**F (86) 1.16** *ebt- 1.22* *nbt- 1.14*	**F (111) 1.24** *ebl- 1.16* *ebt- 0.92* *wbl- 1* *wbt- 1.23* *nbl- 0.86* *sbt- 1.24*	**F (120) 1.2** *ebl- 0.86* *ebt- 1.37* *nbt- 1.23* *nbr- 0.88*
12: Major Mackenzie Dr. & Angus Glen C.C. (East)	**C (33) 0.96** *wbt- 1.02*	**B (17) 0.8**	**E (64) 1.01** *ebl- 0.88* *wbt- 1.13*	**B (18) 0.78**	**E (79) 1.04** *ebl- 0.9* *wbt- 1.17*	**B (19) 0.81**	**E (79) 1.04** *ebl- 0.9* *wbt- 1.17*	**B (19) 0.81**	**F (89) 1.13** *ebl- 0.88* *wbt- 1.2* *nbl- 1.08*	**C (22) 0.84**

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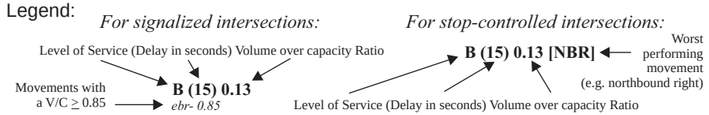
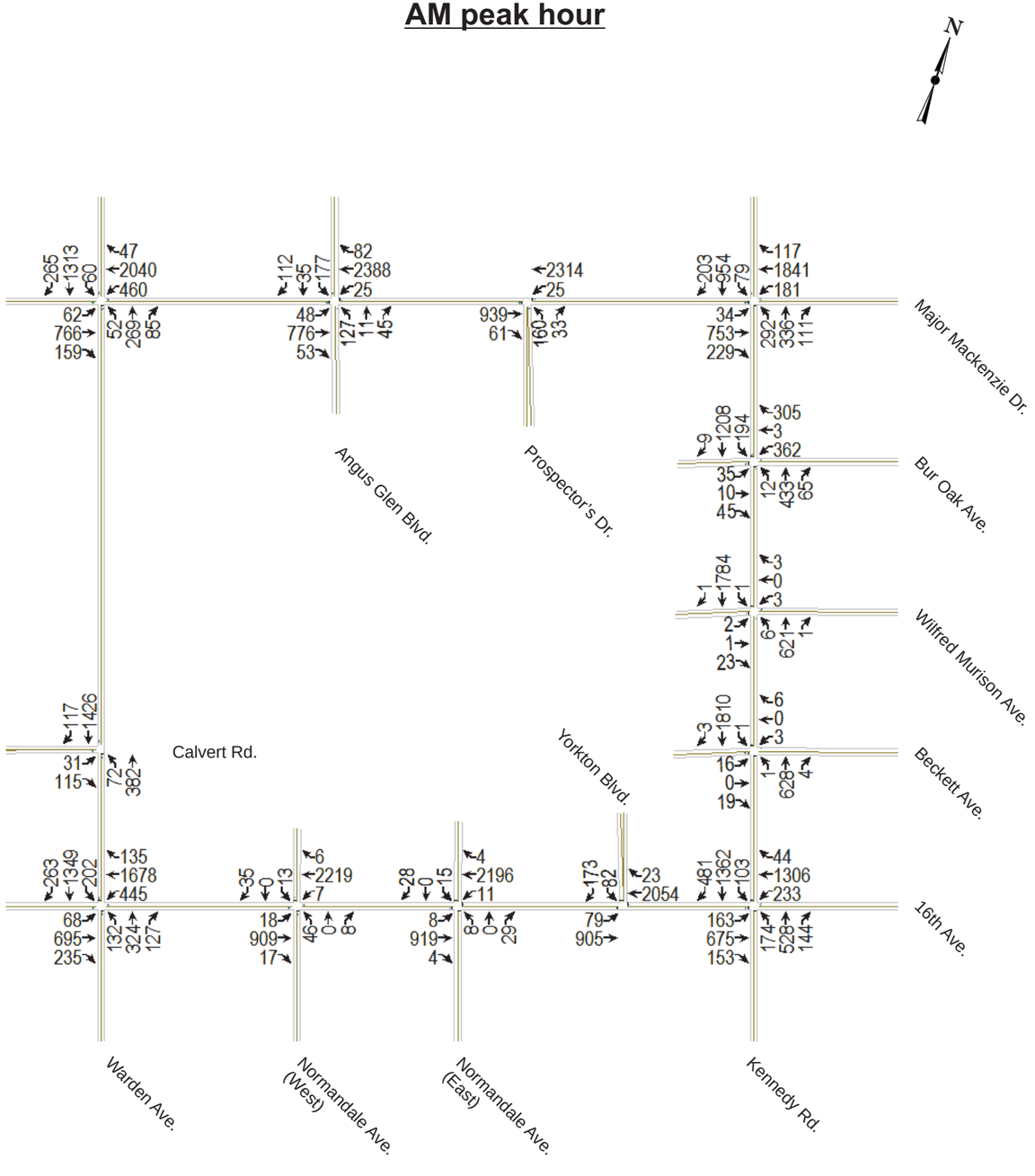
Legend:

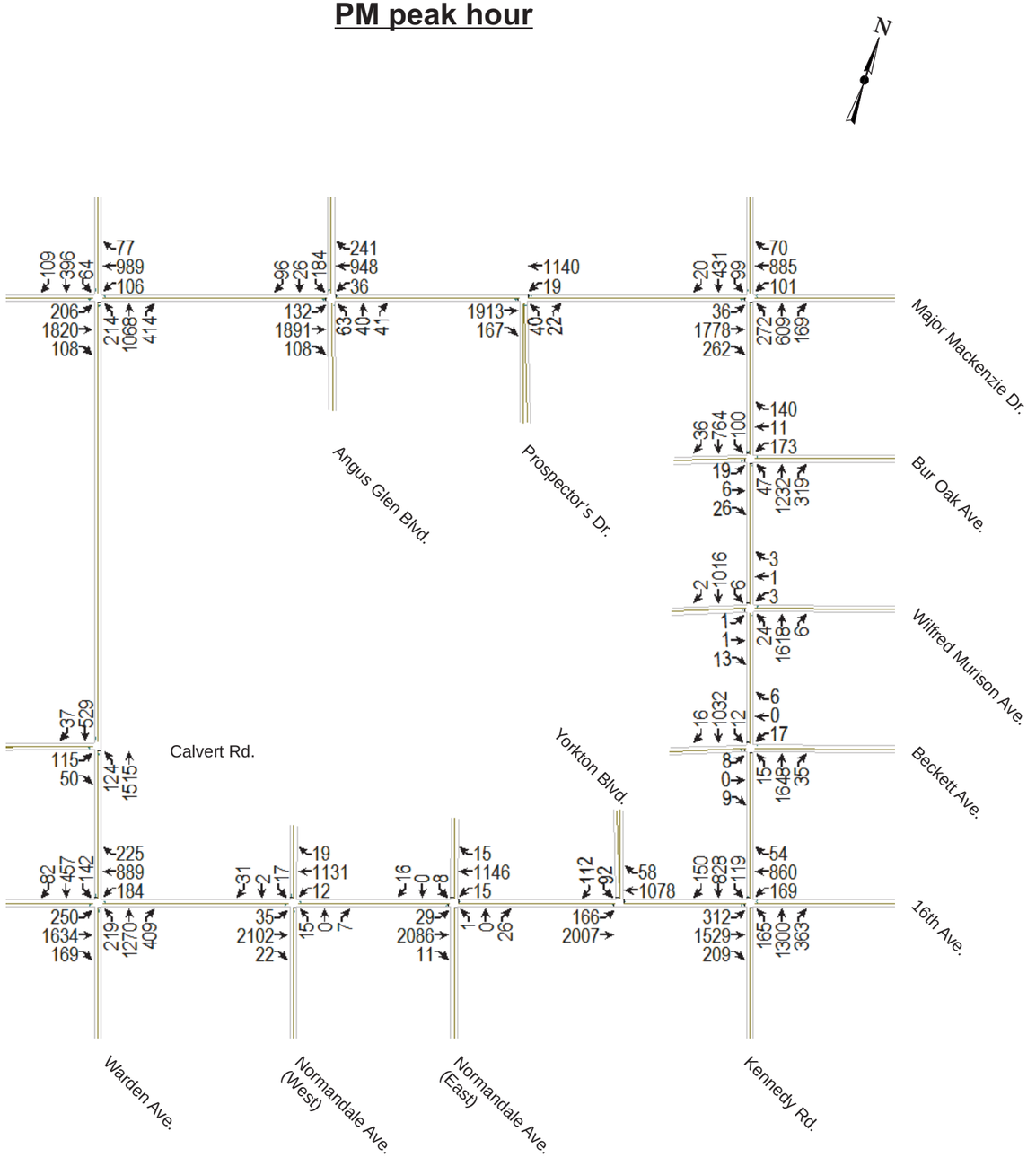


Level of Service Summaries
Total Traffic Volumes
Figure 8.2

AM peak hour



PM peak hour



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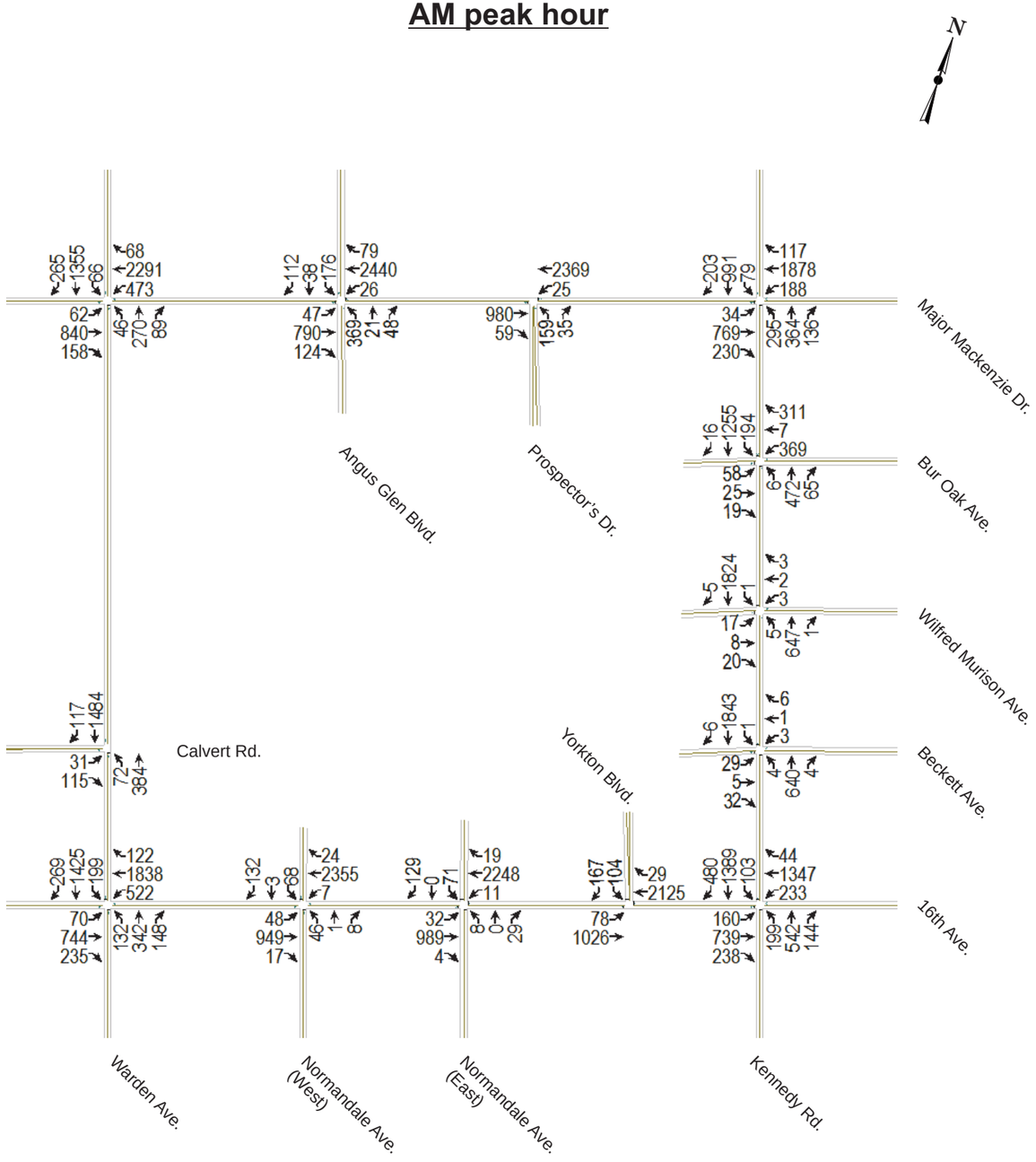
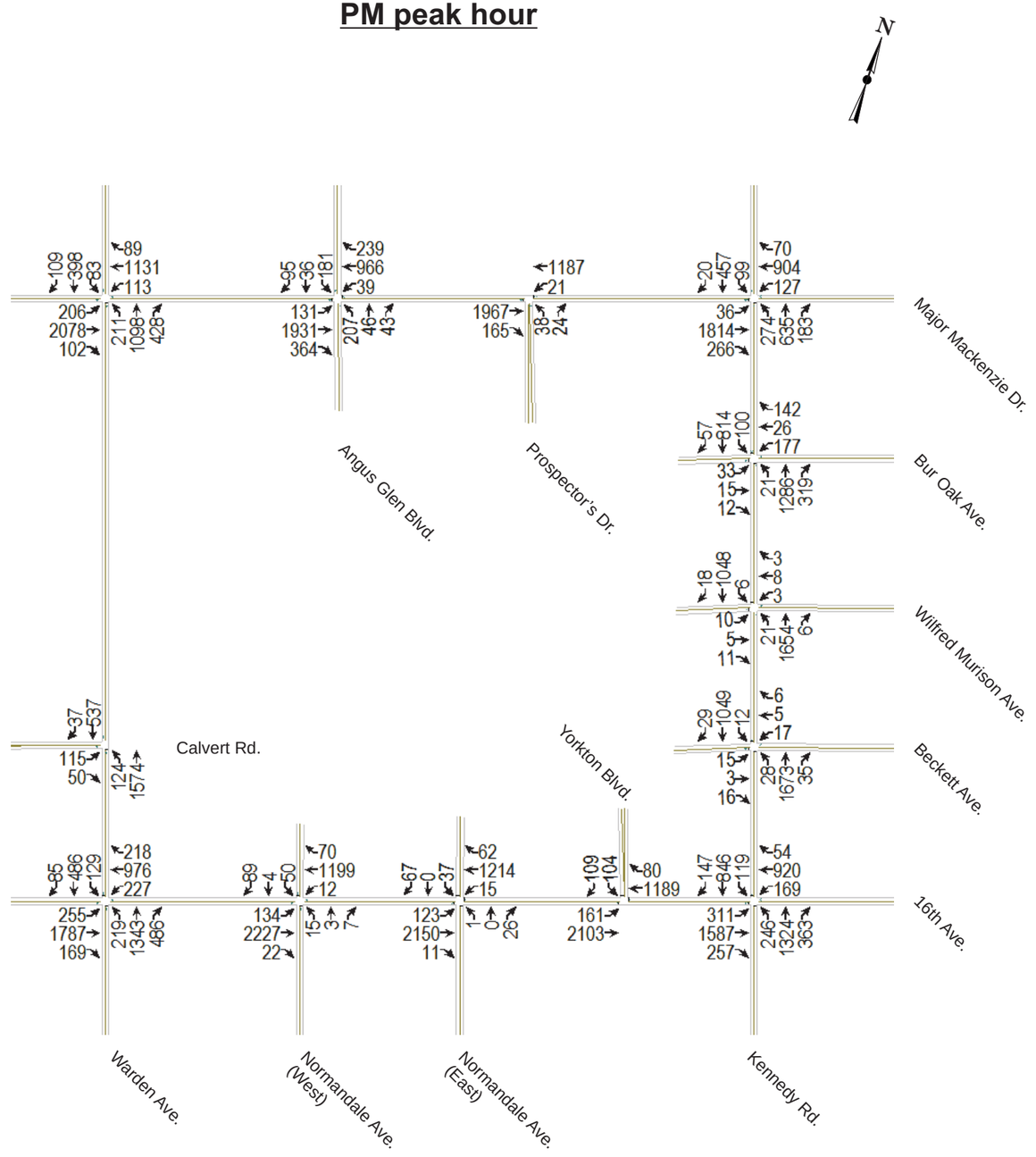
Total Traffic
2024 Horizon Year
Figure 8.3

AM peak hour



PM peak hour



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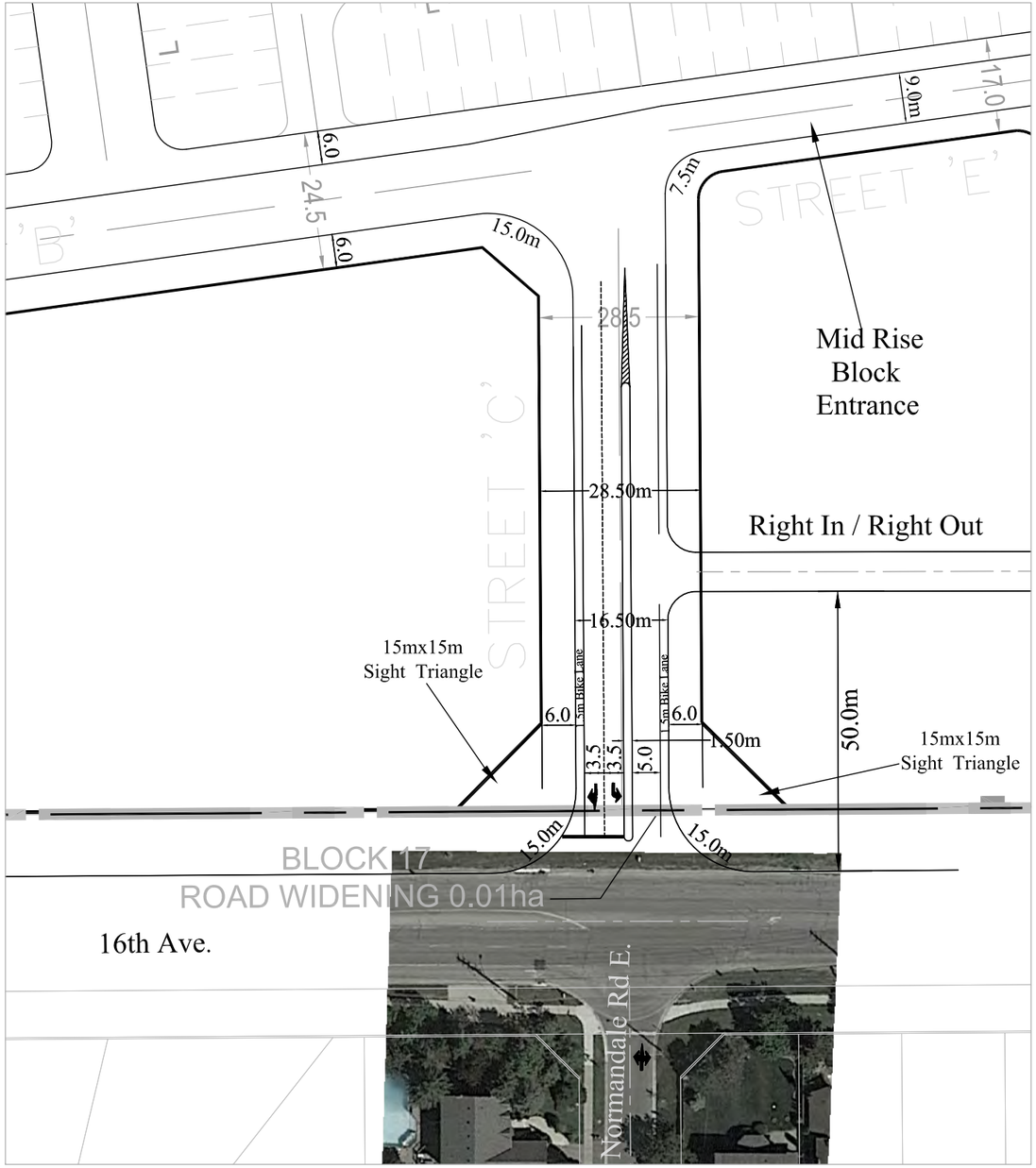
Total Traffic
2026 Horizon Year
Figure 8.4



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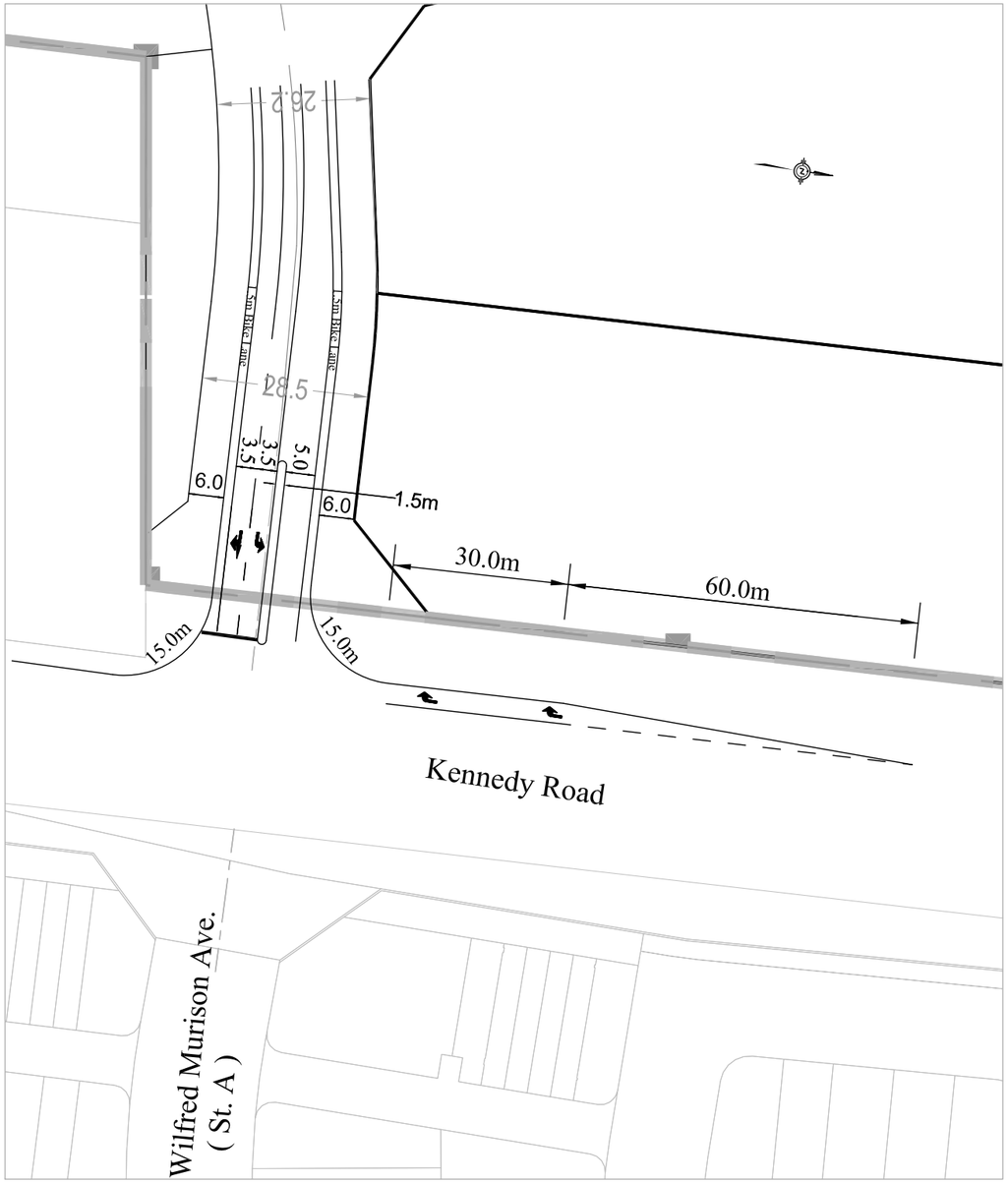
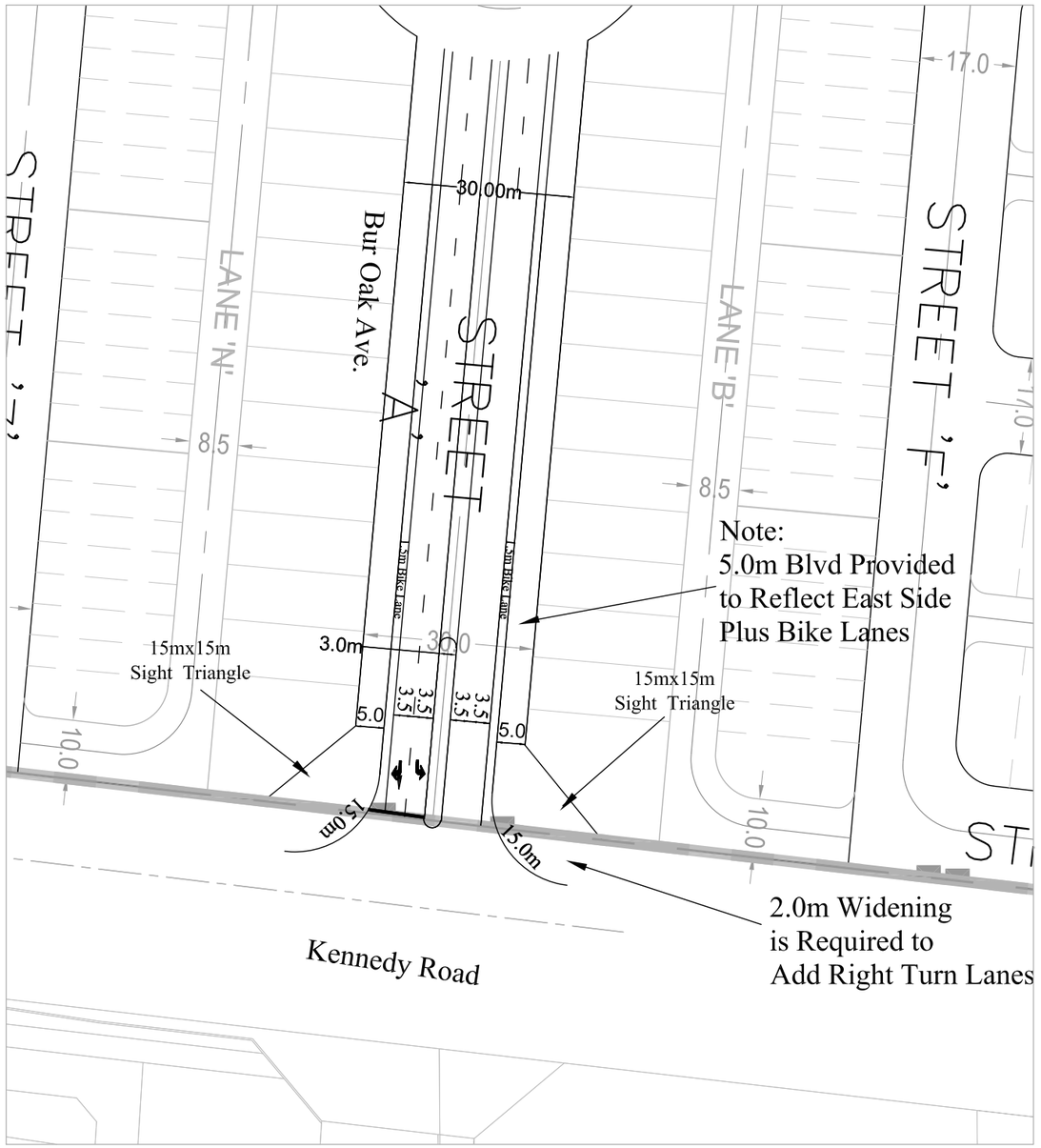
Scale:	**1:1000**
Project Number:	**15.208**
Date:	**September 21, 2016**

Functional Plan Normandale Rd.

Figure 9.1

S:\Yr 2015\15.208 Angus Glen YorkDown - YDL Lands\acad\2016-08-22_DP\2016-08-22_DP.dwg





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Scale:	**1:1000**
Project Number:	**15.208**
Date:	**September 21, 2016**

Functional Plan
Bur Oak and Wilfred Murison Ave.

Figure 9.2

S:\Yr 2015\15.208 Angus Glen YorkDown - YDL Lands\acad\2016-08-22_DP\2016-08-22_DP.dwg

Intersection	Scenario C																			
	Maximum Queue (AM or PM) in metres								Available Storage (m)				Exceeds Storage?							
	EB		WB		NB		SB		EB	WB	NB	SB	EB		WB		NB		SB	
	50th	95th	50th	95th	50th	95th	50th	95th					50th	95th	50th	95th	50th	95th	50th	95th
1: Bur Oak Ave. & Kennedy Rd.	7	14	92	121	2	7	6	37	30	153	65	60	--	--	--	--	--	--	--	--
2: Wilfred Murison Ave. & Kennedy Rd.	1	2	1	3	0	1	0	1	30	30	15	60	--	--	--	--	--	--	--	--
3: Beckett Ave. & Kennedy Rd.	2	7	2	7	0	1	0	3	30	30	50	55	--	--	--	--	--	--	--	--
4: 16th Ave. & Kennedy Rd.	86	143	48	102	32	75	19	55	36	60	94	60	Yes	Yes	--	Yes	--	--	--	--
5: 16th Ave. & Yorkton Blvd.	12	41	--	--	--	--	25	42	45	--	--	30	--	--					--	Yes
6: 16th Ave. & Normandale Ave. (east)	2	2	1	8	1	4	2	8	30	30	30	30	--	--	--	--	--	--	--	--
7: 16th Ave. & Normandale Ave. (west)	1	1	1	2	0	0	5	13	30	30	30	30	--	--	--	--	--	--	--	--
8: 16th Ave. & Warden Ave.	52	97	122	170	39	64	33	66	40	85	85	85	Yes	Yes	Yes	Yes	--	--	--	--
10: Major Mackenzie Dr. & Kennedy Rd.	9	24	26	40	78	147	26	51	98	58	123	58	--	--	--	--	--	Yes	--	--
11: Major Mackenzie Dr. & Warden Ave.	28	56	127	105	38	66	12	24	50	140	75	95	--	Yes	--	--	--	--	--	--

Note: A default of 30 metres storage was assumed for most of the side streets.

Intersection	Scenario E																			
	Maximum Queue (AM or PM) in metres								Potential Storage (m)				Exceeds Potential Storage?							
	EB		WB		NB		SB		EB	WB	NB	SB	EB		WB		NB		SB	
	50th	95th	50th	95th	50th	95th	50th	95th					50th	95th	50th	95th	50th	95th	50th	95th
1: Bur Oak Ave. & Kennedy Rd.	12	21	94	123	1	5	6	35	30	153	65	60	--	--	--	--	--	--	--	--
2: Wilfred Murison Ave. & Kennedy Rd.	2	7	1	3	1	2	0	1	30	30	15	60	--	--	--	--	--	--	--	--
3: Beckett Ave. & Kennedy Rd.	4	11	2	7	0	3	1	2	30	30	50	55	--	--	--	--	--	--	--	--
4: 16th Ave. & Kennedy Rd.	84	143	48	103	45	92	18	52	36	140	94	60	Yes	Yes	--	--	--	--	--	--
5: 16th Ave. & Yorkton Blvd.	45	75	--	--	--	--	29	46	45	--	--	30	--	Yes					--	Yes
6: 16th Ave. & Normandale Ave. (east)	8	11	1	9	1	4	9	21	30	30	30	30	--	--	--	--	--	--	--	--
7: 16th Ave. & Normandale Ave. (west)	5	8	1	4	0	0	19	33	30	30	30	40	--	--	--	--	--	--	--	--
8: 16th Ave. & Warden Ave.	53	99	164	235	39	65	26	58	80	250	85	85	--	Yes	--	--	--	--	--	--
10: Major Mackenzie Dr. & Kennedy Rd.	9	25	27	57	81	149	26	54	98	58	123	58	--	--	--	--	--	Yes	--	--
11: Major Mackenzie Dr. & Warden Ave.	40	80	124	96	38	66	16	28	180	140	75	95	--	--	--	--	--	--	--	--

Note: Potential storage is identical to available storage except for the items highlighted in green. The green highlighted movements are the left turns with queue lengths exceeding the currently available storage. The values in green represent the potential length that the storage lane can feasibly be extended.

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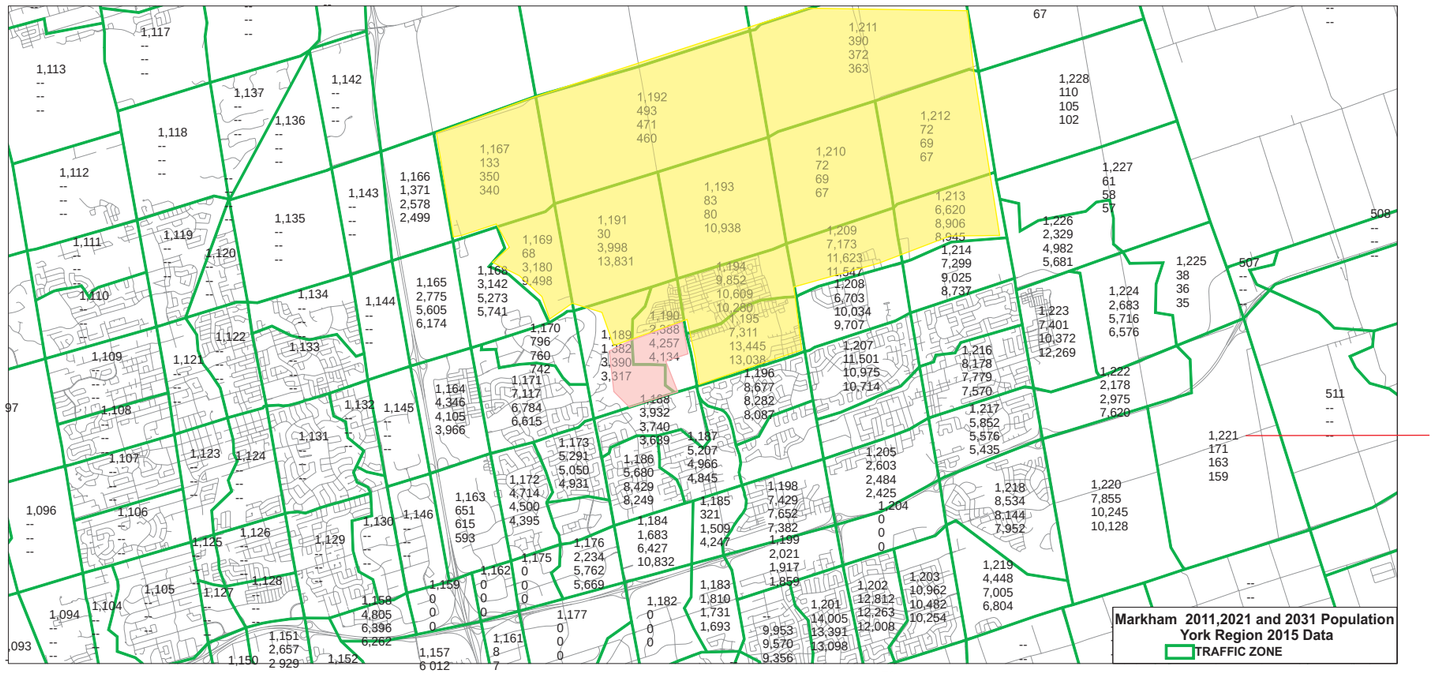
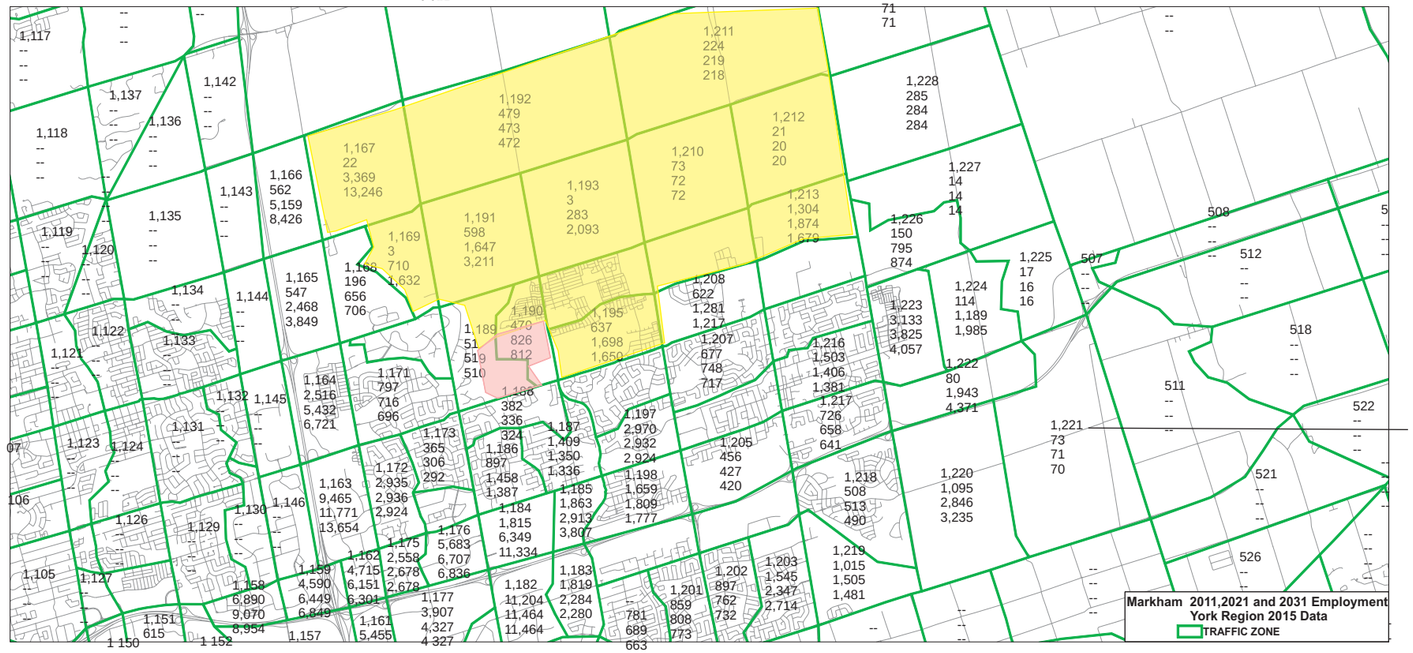
Summary of
Select Left turn Queues
Figure 9.3



Traffic Zone Number
2011 Population
2021 Population
2031 Population



Traffic Zone Number
2011 Employment
2021 Employment
2031 Employment

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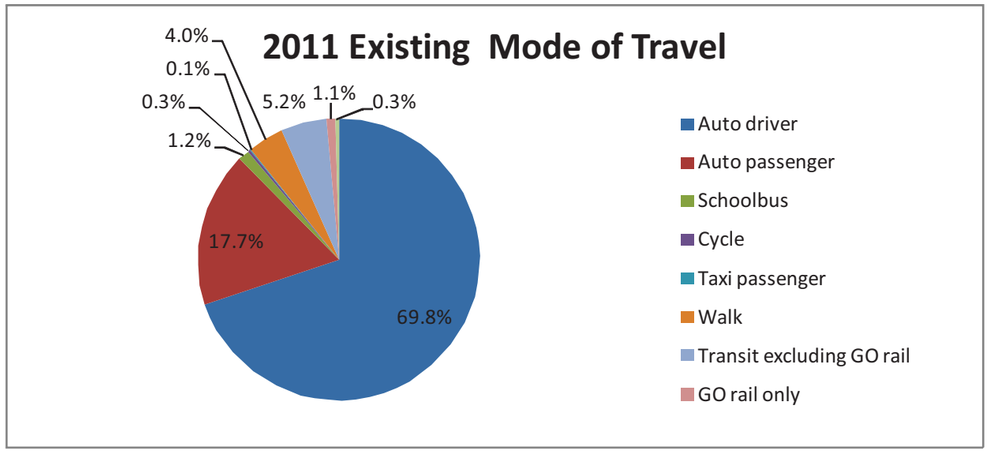
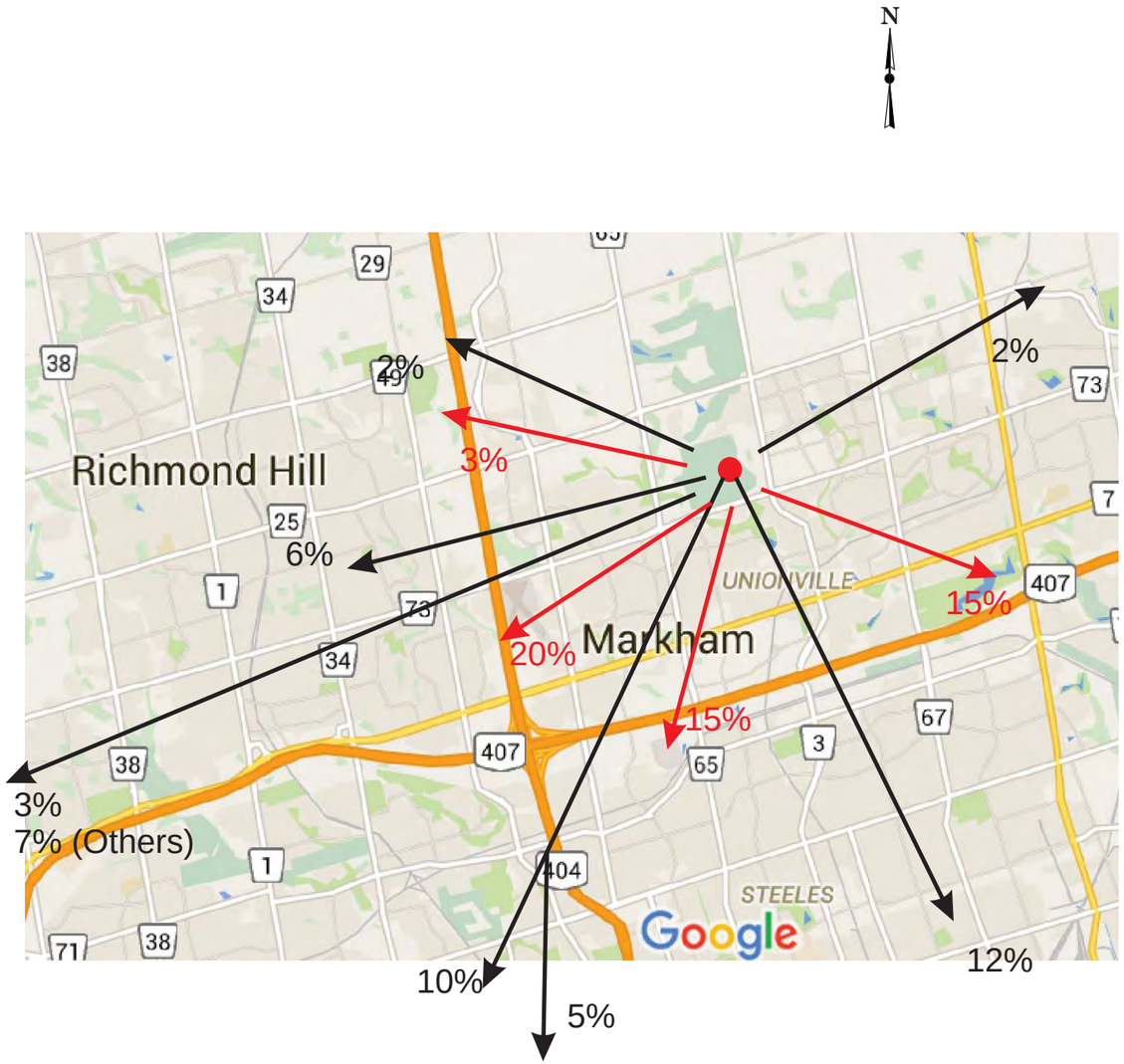
YDL Site
Area Development in-corporated in the Assessment

Markham Population and Employment
Figure A1



Existing Transit Modal Split (Including GO) : 6.6%
Other Mode of Travel (Walk & Cycle) : 4.3%
Target Transit Modal Split by 2031 (based on FUA Study): 17%
(or an increase of 0.5% per Year)

Estimated Transit Modal Split by 2021 : 12%
Estimated Shift to Other Mode of Travel : 1%



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Mode of Travel and Trip Distribution
Figure A2

4134 16th Avenue Lands Trip Generation

Residential Yields by Blocks

ITE Trip Generation Rates - 9th Edition

Land Uses	Units	ITE Code	Weekday AM Peak Hour In	Out	Total	Weekday PM Peak Hour In	Out	Total
Single Detached	Dwelling units	210	0.19	0.56	0.75	0.63	0.37	1.00
Residential Condominium/Townhouse	Dwelling units	230	0.07	0.37	0.44	0.35	0.17	0.52
Commercial Retail	1000 sq. ft.	820	0.27	0.69	0.96	0.25	3.46	3.71

Existing Mode of Choice : Auto 88% - Transit 8% and Other (Cycling , Walk etc..)4%
Target Transit Modal Split (FUA Study) : 17% - Increase 9% or 0.45% per year from 2011 to2031
Assuming : 50% Transit increased 2021 - Increase 4% and assumed an increased in Other Mode 2%
Forecast Mode of Transit Modal split by 2021 : 13%

Residential Vehicle Trip Reduction 13%
Employment Vehicle Trip Reduction 7%

Zone	Land Uses	Units	ITE Code	Weekday AM Peak Hour In	Out	Total	Weekday PM Peak Hour In	Out	Total
	Vehicle Trips								
A	Single Detached	166	230	27	81	108	91	53	144
	Medium /Townhouse	0	210	0	0	0	0	0	0
B	Single Detached	72	230	12	35	47	39	23	63
	Medium /Townhouse	59	210	4	19	23	18	9	27
C	Single Detached	156	230	25	76	102	86	50	136
	Medium /Townhouse	711	210	46	226	272	216	106	322
	Total Westside	**1164**		**114**	**437**	**552**	**449**	**242**	**691**
D	Single Detached	75	230	12	37	49	41	24	65
	Medium /Townhouse	22	210	1	7	8	7	3	10
E	Single Detached	223	230	36	109	146	122	72	194
	Medium /Townhouse	70	210	5	22	27	21	10	32
F	Single Detached	47	230	8	23	31	26	15	41
	Medium /Townhouse	0	210	0	0	0	0	0	0
G	Single Detached	147	230	24	72	96	81	47	128
	Medium /Townhouse	40	210	3	13	15	12	6	18
H	Single Detached	203	230	33	99	132	111	65	177
	Medium /Townhouse	430	210	28	137	165	130	64	195
	Total Eastside	**1257**		**150**	**519**	**669**	**551**	**308**	**859**
	Commercial Trips	107,600		29	74	103	27	40	67
		15% Passby		-4	-11	-15	-4	-6	-10
		10% from Neigbourhood		-3	-7	-10	-3	-4	-7
	Net Commercial Vehicle Trips			**22**	**55**	**77**	**20**	**30**	**50**
	Total (Vehicle Trips)	***2421***		***286***	***1012***	***1298***	***1021***	***579***	***1600***

Area Development Trip Generation by Traffic Zones

Blend ITE Trip Generation for Residential and Population

ITE Trip Generation Rates - 9th Edition

Land Uses	ITE Code	Units	Weekday AM Peak Hour In	Out	Total	Weekday PM Peak Hour In	Out	Total
Residential								
Single Detached	210	Dwelling units	0.19	0.56	0.75	0.63	0.37	1.00
Residential Condominium/Townhouse	230	Dwelling units	0.07	0.37	0.44	0.35	0.17	0.52
Average Residential Trip Rates (60% Single and 40% Low Rise Condominium)		**Dwelling units**	**0.14**	**0.48**	**0.63**	**0.52**	**0.29**	**0.81**
Employment								
General Light Industrial	110	Employment	0.37	0.07	0.44	0.09	0.33	0.42
Hotel	310	Employment	0.48	0.21	0.69	0.43	0.37	0.80
High School	530	Employment	0.48	0.06	0.54	0.07	0.34	0.41
Building Materials and Lumber Store	812	Employment	1.50	0.92	2.42	1.41	1.36	2.77
Single Tenant Office Building	715	Employment	0.47	0.06	0.53	0.08	0.43	0.51
Medical-Dental Office Building	720	Employment	0.42	0.11	0.53	0.36	0.70	1.06
General Office Building	710	Employment	0.42	0.06	0.48	0.21	0.25	0.46
Average General Employment Trip Rates		**Employment**	**0.59**	**0.21**	**0.80**	**0.38**	**0.54**	**0.92**

Existing Mode of Choice : - Transit 6.6% and Other (Cycling , Walk etc..)4.3%
Target Transit Modal Split (FUA Study) : 17% - Increase 9% or 0.5% per year from 2011 to2031
Assuming : Transit increased 2021 - Increase 6% and assumed an increased in Other Mode 1%
Forecast Mode of Transit Modal split by 2021 : 12% - Shift from Auto to Other Mode of Travel 1%

Residential Vehicle Trip Reduction 13%
Employment Vehicle Trip Reduction 7%

2021 Area Development Trips Estimation

Traffic Zone	Population (from 2016 to 2021)	Units (from 2016 to 2021)	Weekday AM Peak Hour In	Out	Total	Weekday PM Peak Hour In	Out	Total
Residential								
1167	71	217	27	91	118	98	55	153
1169	3114	1,021	127	430	556	460	258	718
1191	3968	1,301	161	547	709	586	329	915
1193	0	0	0	0	0	0	0	0
1209,1210,1212,1213	945	310	38	130	169	139	78	218
Employment	**Employment**							
1167	3306		1,817	656	2,473	1,164	1,660	2,824
1169	703		386	139	526	248	353	601
1191	1050		577	208	785	370	527	897
1193	280		154	56	209	99	141	239
1209,1210,1212,1213	684		352	127	479	225	321	547
	Total 2021	**2,849**	**3,639**	**2,385**	**6,024**	**3,388**	**3,722**	**7,110**

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Subject Lands and Area Development Traffic
Figure A3

Comparison to EMME Output.

- EMME Outputs (From York Region)
- Typical Travel Demand (Hand - Assignment) - Trip Generation, Distribution, Mode Choice and Assignment

Peak Direction

		PC Model	EMME
Warden Ave	North of Major Mack	1581	1366
	South of Mid Block	1587	1516
	North of 16th	1856	1785
	South of 16th Ave	2057	2055

		PC Model	EMME
Kennedy Rd	North of Major Mack	1198	1147
	South Of Bur Oak	1541	1493
	North of 16th	1866	1823
	South of 16th Ave	1740	1686

Off Peak Direction

		PC Model	EMME
Warden	North of Major Mack	384	302
	South of Mid Block	413	380
	North of 16th	527	494
	South of 16th Ave	594	586

		PC Model	EMME
Kennedy	North of Major Mack	490	467
	South Of Bur Oak	490	466
	North of 16th	703	678
	South of 16th Ave	837	809

Peak Direction

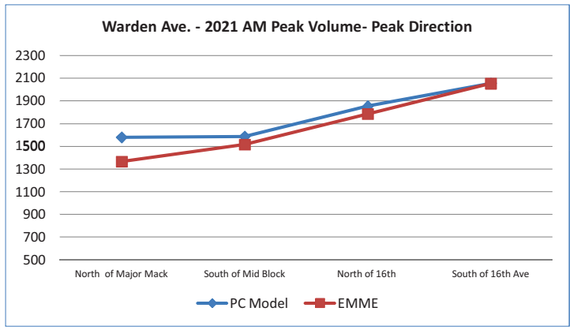
		PC Model	EMME
Major Mackenzie	East of Warden	2430	2418
	West of Angus Glen Blvard	2672	2754
	West of Kennedy	2285	2314
	East of Kennedy	2093	2121

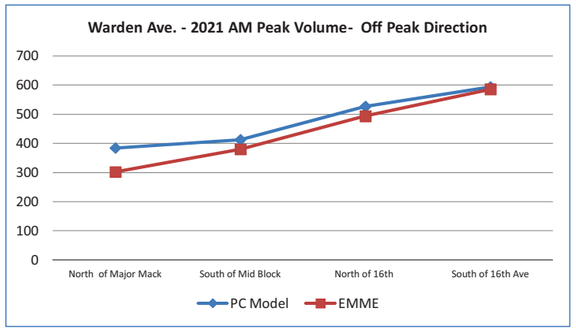
		PC Model	EMME
16th Avenue	East of Warden	2162	2244
	West of Normandale East	2115	2191
	West of Kennedy	1957	2028
	East of Kennedy	1560	1613

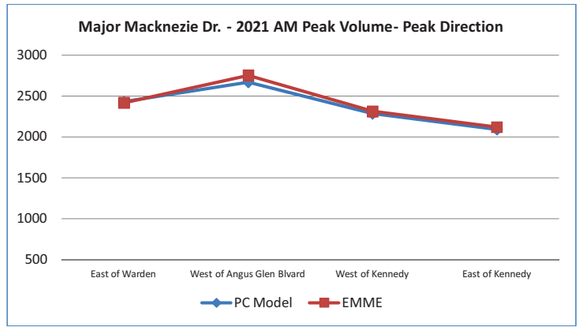
Peak Direction

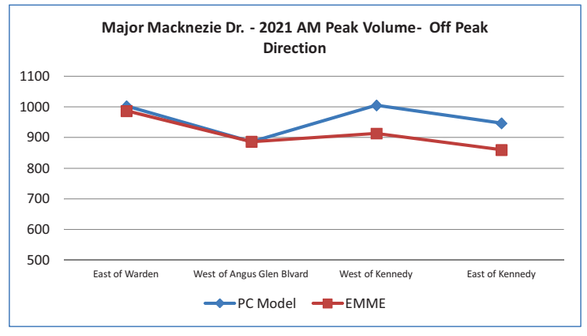
		PC Model	EMME
Major Mackenzie	East of Warden	1002	987
	West of Angus Glen Blvard	886	886
	West of Kennedy	1005	913
	East of Kennedy	947	860

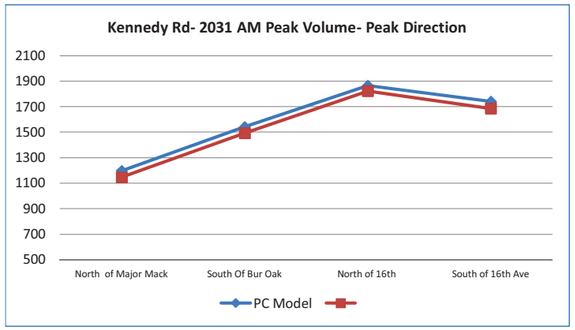
		PC Model	EMME
16th Avenue	East of Warden	1016	1036
	West of Normandale East	1024	1013
	West of Kennedy	1087	1080
	East of Kennedy	950	933

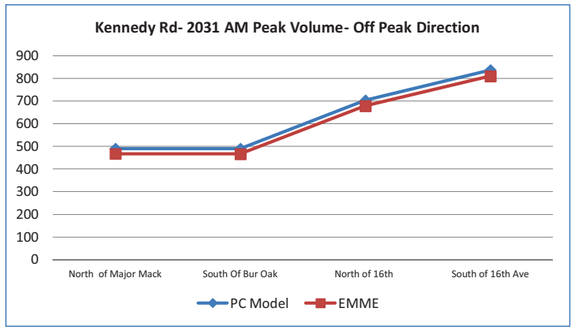


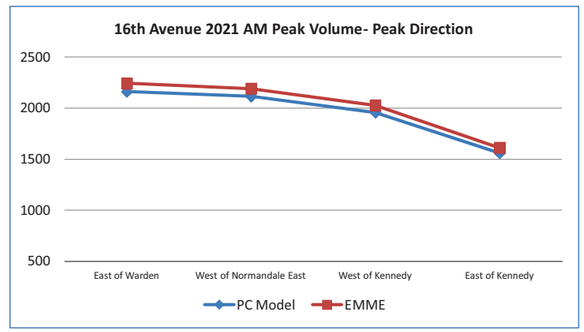


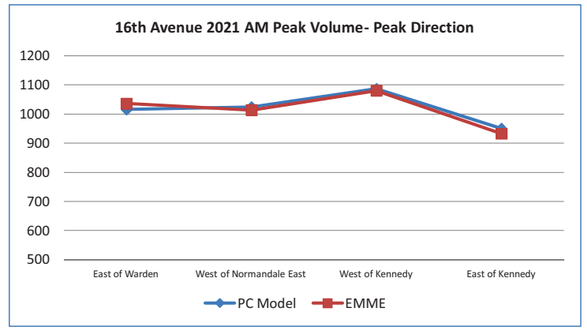












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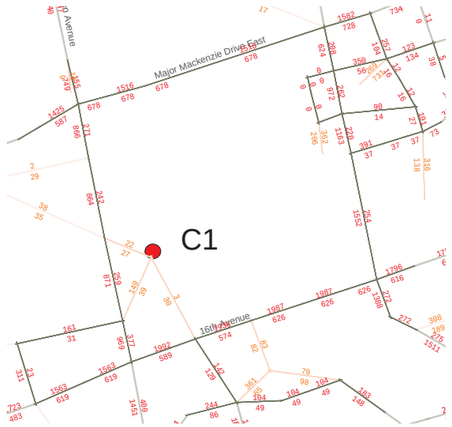
2021 Model Calibration and Comparison to EMME Outputs
Figure A4

EMME II Output
2011 AM Peak Hour
(No New Road Connections)



1

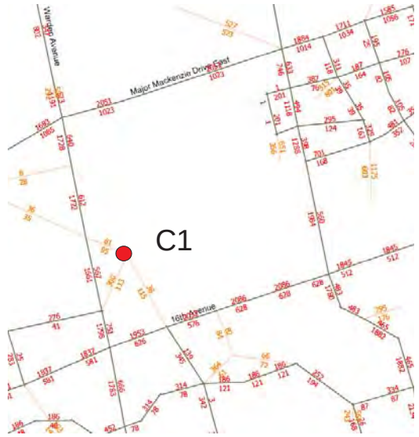
C1 - Centroid Review

2011 Output Indicates that approximately 200 vehicles are outbound. These are trips from Existing Development.

2021 Output Indicates that approximately 496 vehicles trips are outbound (includes Subject Lands)

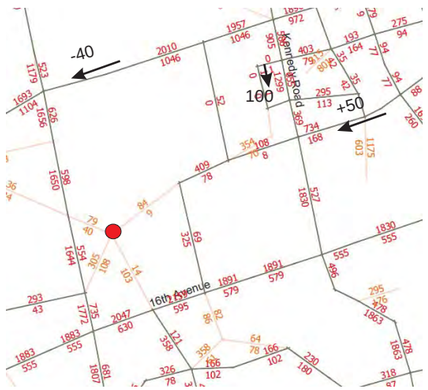
The difference in 2011 and 2021 outputs is 296 vehicle trips which is attributed to Subject development.

EMME II Output
2021 AM Peak Hour
(No New Road Connections)



2

EMME II Output
2021 AM Peak Hour
(with Bur Oak Avenue Extension and Connection to 16th Avenue

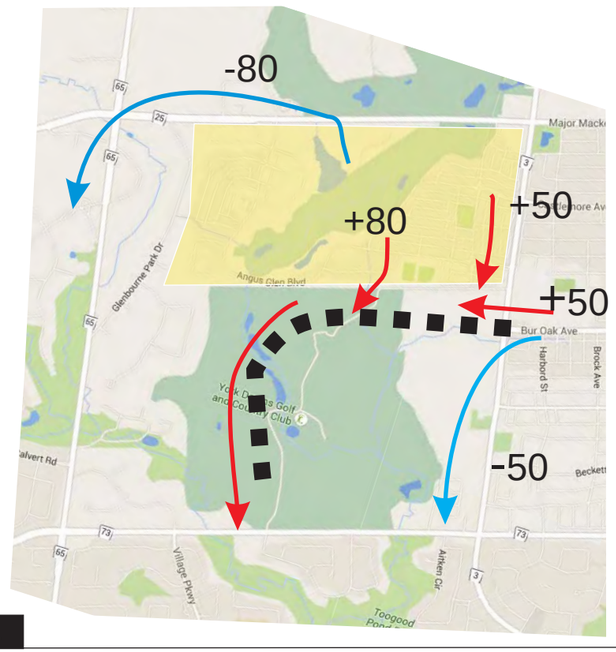


The extension identifies a traffic flows of 325 vehicle trips and when combined with the identified 296 Subject Land vehicle trips results in a total of 621 vehicle trips.

XXX ← 2021 Volume Change (with and without Bur Oak Avenue Extension to 16th Avenue)

3

Hand Assignment of 2021 AM Peak Hour Traffic Flows



The total estimated outbound traffic flows in the 2021 roadway AM Peak Hour is 673 vehicle trips , the vehicle trips assignment are closed to Figure 7.3

- Normandale West - 397
- Normandale East -177
- Yorkton - 203
- minus (-) Existing - 104

Total outbound flows to Warden Avenue and 16th Avenue is 673 vehicle trips (includes vehicles trips cut through from Village, Bur Oak Avenue and Kennedy Road)

4

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● Modal Centroid

Verifying the Internal Traffic Flows with Bur Oak Extension to 16th Avenue
Figure A5

Link Volumes - EMME 2 Model Ouputs

		Peak Direction (Southbound/Westbound)					Off Peak Direction (Northbound/Eastbound)				
		2011	2021	2031	2031(HOV)	2031 Total	2011	2021	2031	2031(HOV)	2031 Total
Warden Ave	North of Major Mackenzie	947	1147	1584		1584	155	523	788		788
	South of Major Mackenzie	866	1408	1549	422	1971	271	620	882	44	926
	South of 16th Avenue	1451	1823	1858	601	2459	400	659	507	480	987
Kennedy Road	North of Major Mackenzie	740	836	965		965	218	528	673		673
	South of Major Mackenzie	624	992	1701	469	2170	208	583	885	223	1108
	South of 16th Avenue	1388	1837	2067	565	2632	272	516	864	131	995
	Total North / Road	6016	8043			11781	1524	3429	4599	878	5477
Major Mackenzie Dr	West of Warden Ave.	1425	1751	1788		1788	587	1102	1165		1165
	West of Kennedy	1516	1871	2051		2051	678	1060	1122		1122
16th Ave	West of Warden Ave.	1563	1875	1921	552	2473	619	527	551	239	790
	West of Kennedy	1987	1854	1962	574	2536	626	594	382	246	628
	Total North / Road	6491	7351			8848	2510	3283	7819	1363	3705

Annual Growth Rates Estimation

	Peak Direction (Southbound / Eastbound)	Peak Direction (Southbound/Westbound) Growth Rate Peak Direction					Off Peak Direction (Northbound/Southbound) Growth Rate off Peak Direction				
		Volume Increase (2011 to 2031)	Average Growth per year	2021 Hand Assignment - Note 1	Net Increase (excl. hand Assignment) -	Net Growth Rate per Year (excl. Hand Assignment)	Volume Increase (2011 to 2031)	Average Growth per year	2021 Hand Assignment - Note 1	Net Increase (excl. hand Assignment) -	Net Growth Rate per Year (excl. Hand Assignment)
Warden Ave	North of Major Mackenzie	637	2.6%	527	110	0.6%	633	8.5%	198	435	6.9%
	South of Major Mackenzie	1105	4.2%	459	646	2.8%	655	6.3%	147	508	5.4%
	South of 16th Avenue	1008	2.7%	384	624	1.8%	587	4.6%	118	469	4.0%
Kennedy Road	North of Major Mackenzie	225	1.3%	275	-50	-0.3%	455	5.8%	122	333	4.7%
	South of Major Mackenzie	1546	6.4%	351	1195	5.5%	900	8.7%	130	770	8.0%
	South of 16th Avenue	1244	3.3%	465	779	2.3%	723	6.7%	145	578	5.9%
North / South Roads		5765	3.4%	2461	3304	2.2%	3953	6.6%	860	3093	3.5%
Major Mackenzie Dr	West of Warden Ave.	363	1.1%	334	29	0.1%	578	3.5%	123	455	2.9%
	West of Kennedy	535	1.5%	144	391	1.2%	444	2.6%	256	188	1.2%
16th Ave	West of Warden Ave.	910	2.3%	370	540	1.5%	171	1.2%	106	65	0.5%
	West of Kennedy	549	1.2%	122	427	1.0%	2	0.0%	246	-244	-2.4%
East / West Roads		2357	1.6%	970	1387	1.0%	1195	2.0%	731	464	0.4%

Note 1: Background Traffic Increase from 2015 to 2021 Taken from
Transportation Assessment - 4134 16th Avenue Internal Roadway Network Options - Preferred Roadway Network Official Plan Amendment prepared by Poulos & Chung September 2016

Background Growth from 2015 to 2021

Background Traffic Increase from 2015 to 2021 taken from

Transportation Assessment - 4134 16th Avenue Internal Roadway Network Options - Preferred Roadway Network
Official Plan Amendment prepared by Poulos & Chung September 2016

- Area Development Traffic is esimated based on EMME II forecast Population and Employment;
- As compared to 2015 current traffic , The estimated 2021 Background Traffic shows an average increase per year as follows:

North / South Road Kennedy Road & Warden Avenue	East West Road Major Mackenzie Drive	East West Road 16th Avenue
3.5%	**2.0%**	**1.0%**

Background Growth Beyond 2021

- Growth is esimated based on 2011 and 2031 EMME II Output
- These Growth varies from 1.6 to 3.6 percent in the peak direction and 2.2 to 6.6 percent in the off peak direction
- These Growth is based on 2011 and 2031 EMME II Output
- By subtracting the additional area development traffic estimated from 2015 to 2021

The Average Growth Rates per year beyond 2021 is summarized below:

North / South Road Kennedy Road & Warden Avenue	East West Road Major Mackenzie Drive	East West Road 16th Avenue
Peak Direction (Off Peak Direction)	Peak Direction (Off Peak Direction)	Peak Direction (Off Peak Direction)
2.2% (3.5%)	**1% (0.5%)**	**1% (0.5%)**

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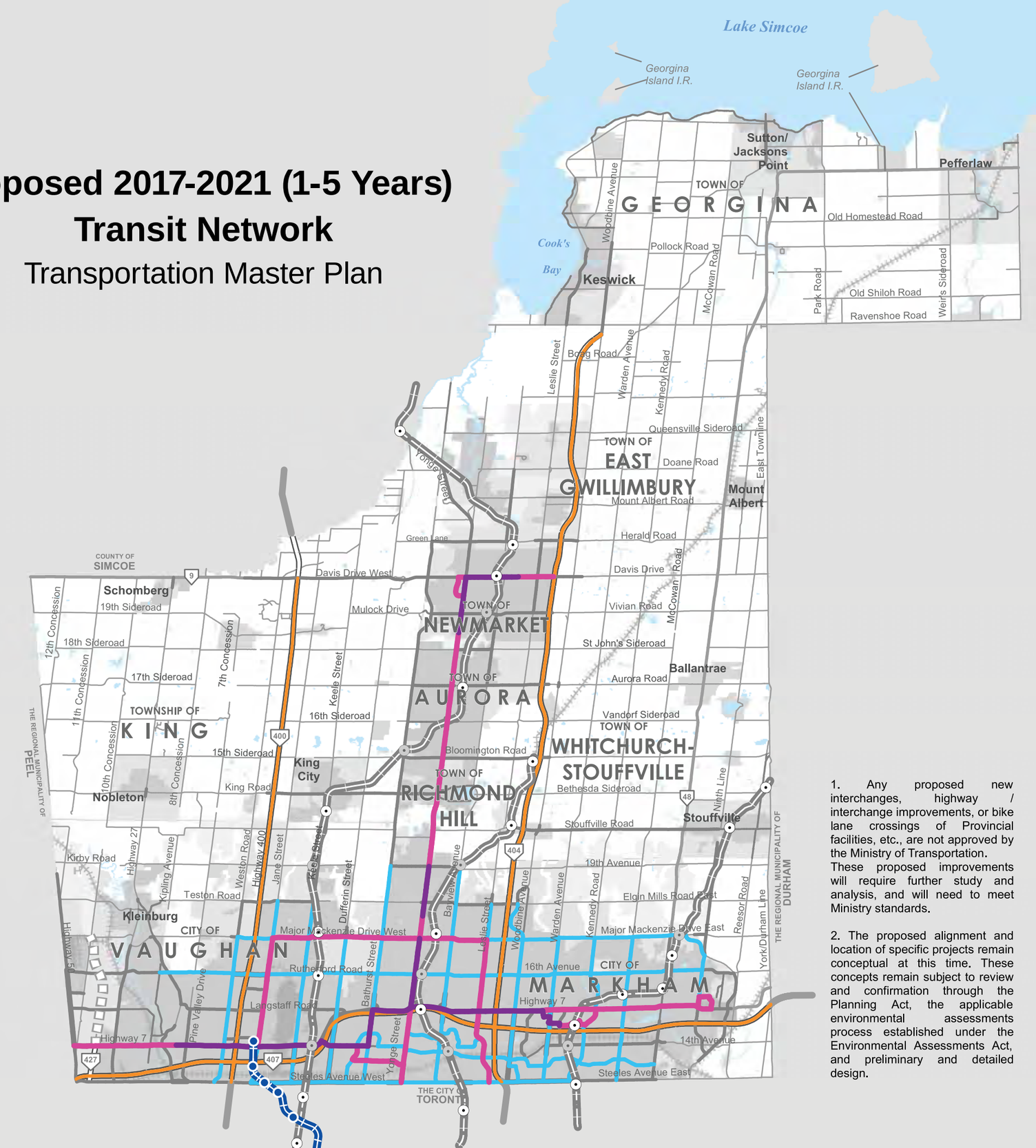
Determining Background Growth Rates Beyond 2021
Figure A6

Proposed 2017-2021 (1-5 Years) Transit Network

Transportation Master Plan



1. Any proposed new interchanges, highway / interchange improvements, or bike lane crossings of Provincial facilities, etc., are not approved by the Ministry of Transportation. These proposed improvements will require further study and analysis, and will need to meet Ministry standards.

2. The proposed alignment and location of specific projects remain conceptual at this time. These concepts remain subject to review and confirmation through the Planning Act, the applicable environmental assessments process established under the Environmental Assessments Act, and preliminary and detailed design.

MAP 12

Thursday, May 12, 2016

2017 - 2021 Transit Network

- Dedicated Rapidway
- VIVA Curbside Service
- Frequent Transit Network
- Highway Bus Service (YRT/Viva, GO)

Subway Extensions

- Subway Extension
- Subway Extension Station

GO Rail

- GO Train, Rush Hour Service
- Existing GO Station
- Potential GO Station

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

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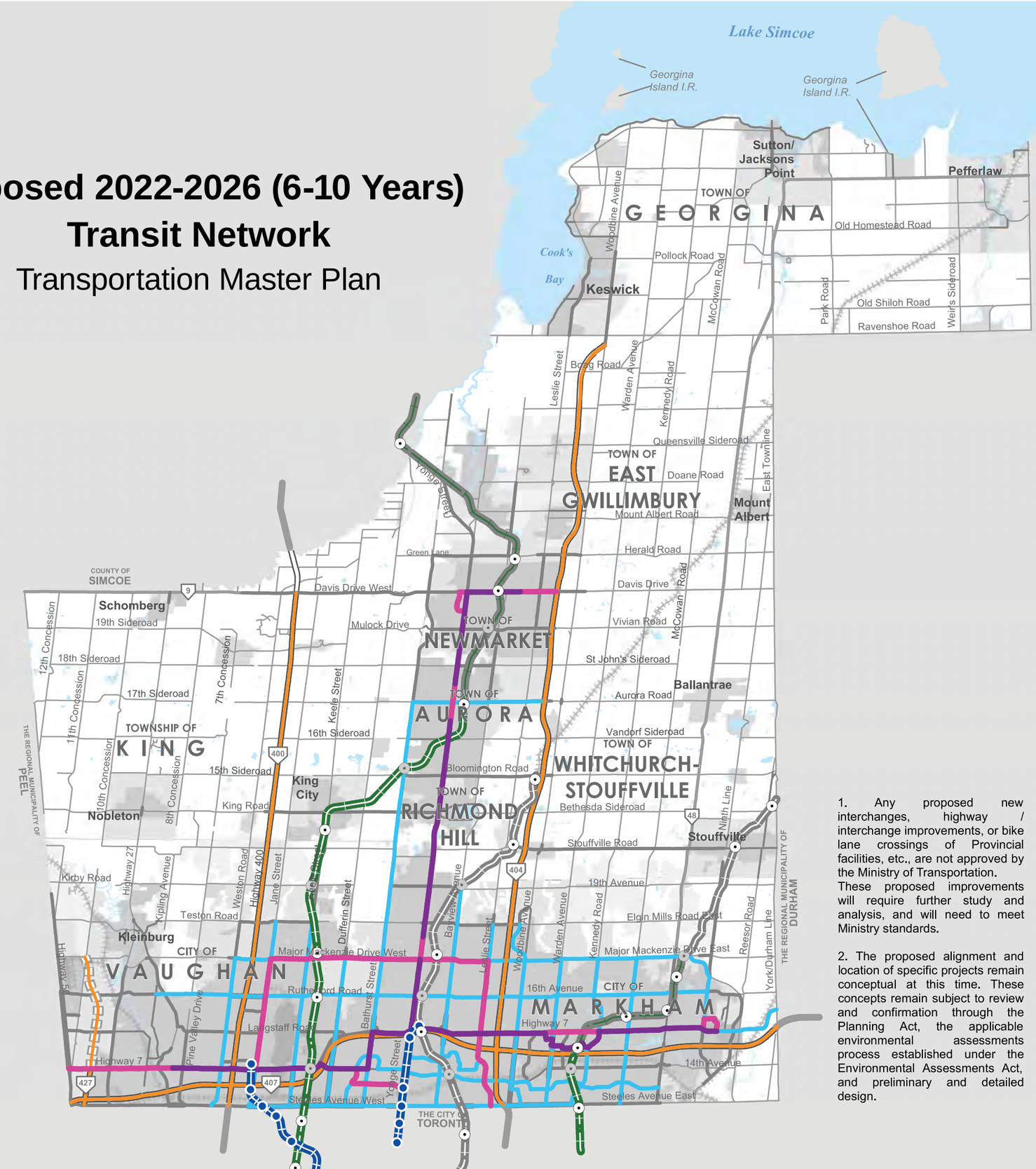
Figure B1

Proposed 2022-2026 (6-10 Years) Transit Network

Transportation Master Plan



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MAP 13

Thursday, May 12, 2016

2022 - 2026 Transit Network

- Dedicated Rapidway
- VIVA Curbside Service
- Frequent Transit Network
- Highway Bus Service (YRT/Viva, GO)

Subway Extensions

- Subway Extension
- Subway Extension Station

GO Rail

- GO Train, 15-min Two Way All Day Service
- GO Train, Two Way All Day Service
- GO Train, Rush Hour Service
- Existing GO Station
- Potential GO Station

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

York Region yorkmaps

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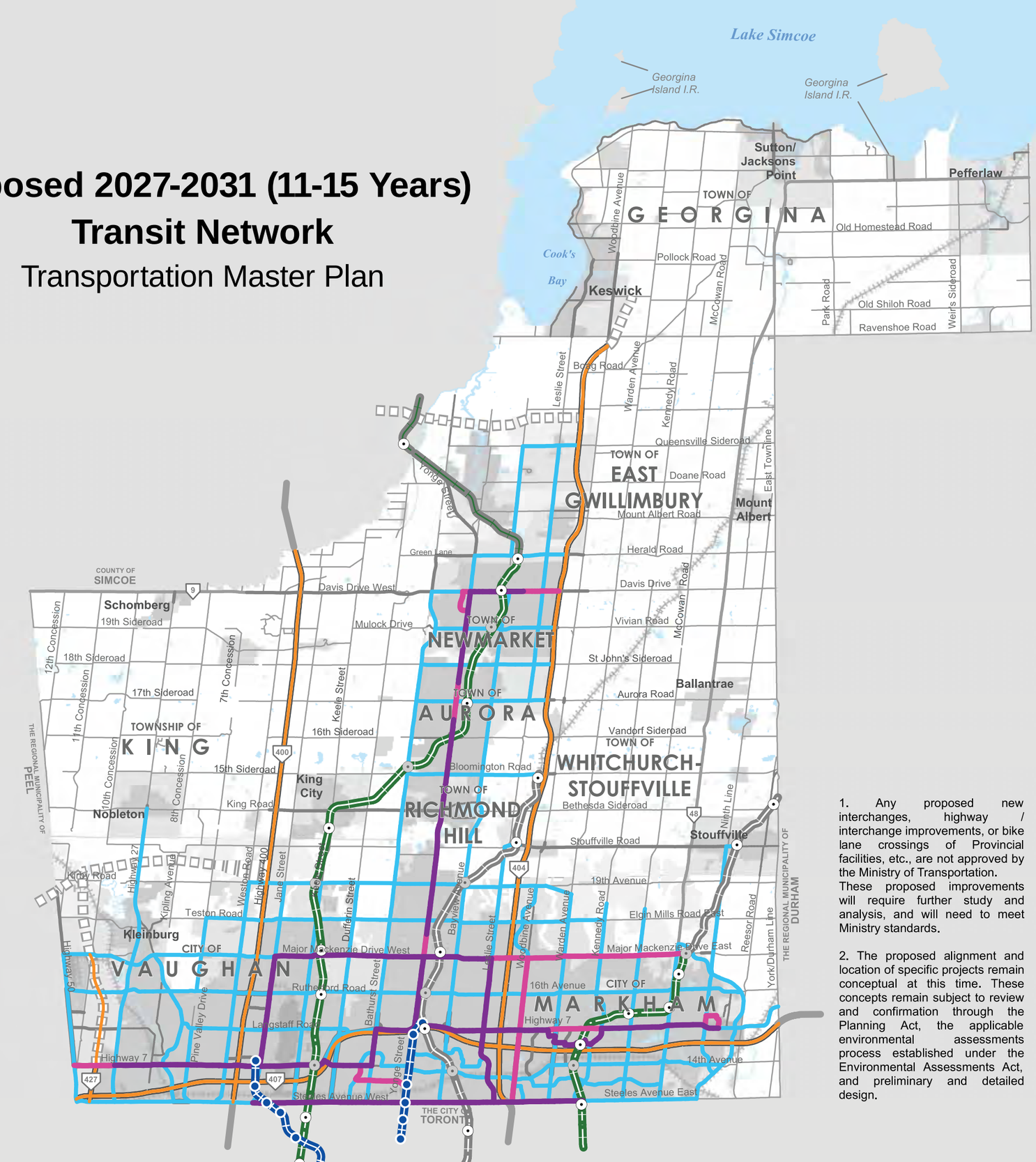
Transportation Services

Figure B2

Proposed 2027-2031 (11-15 Years) Transit Network

Transportation Master Plan



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MAP 14

Thursday, May 12, 2016

2027 - 2031 Transit Network

- Dedicated Rapidway
- VIVA Curbside Service
- Frequent Transit Network
- Highway Bus Service (YRT/Viva, GO)

Subway Extensions

- Subway Extension
- Subway Extension Station

GO Rail

- GO Train, 15-min Two Way All Day Service
- GO Train, Two Way All Day Service
- GO Train, Rush Hour Service
- Existing GO Station
- Potential GO Station

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

York Region yorkmaps

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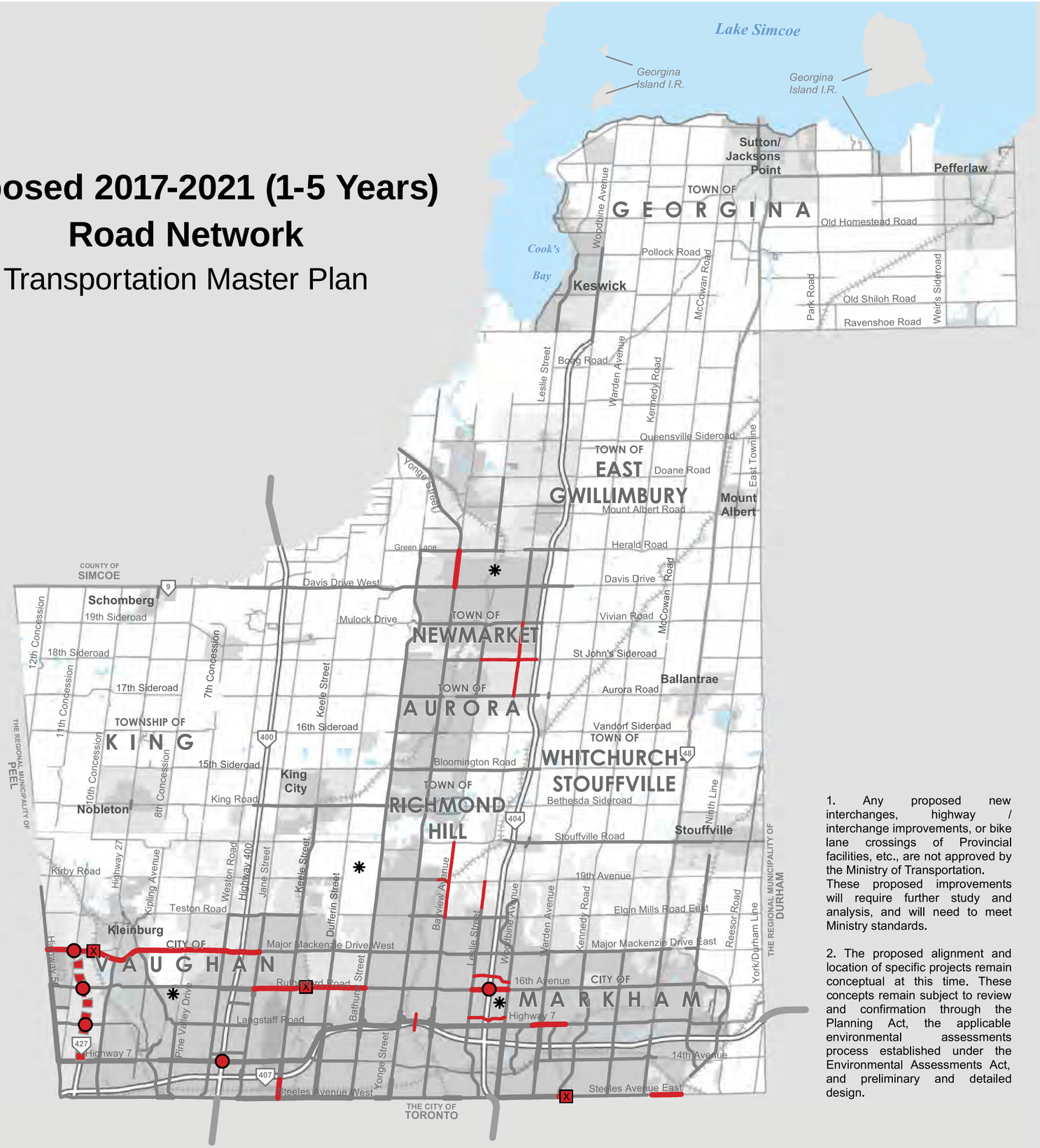
Figure B3

Proposed 2017-2021 (1-5 Years) Road Network

Transportation Master Plan



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MAP 16

Thursday, May 12, 2016

Road Phasing

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Grade Separations Phasing

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Interchange Improvements Phasing (to be confirmed by MTO)

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Note:

* Special Study Area

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

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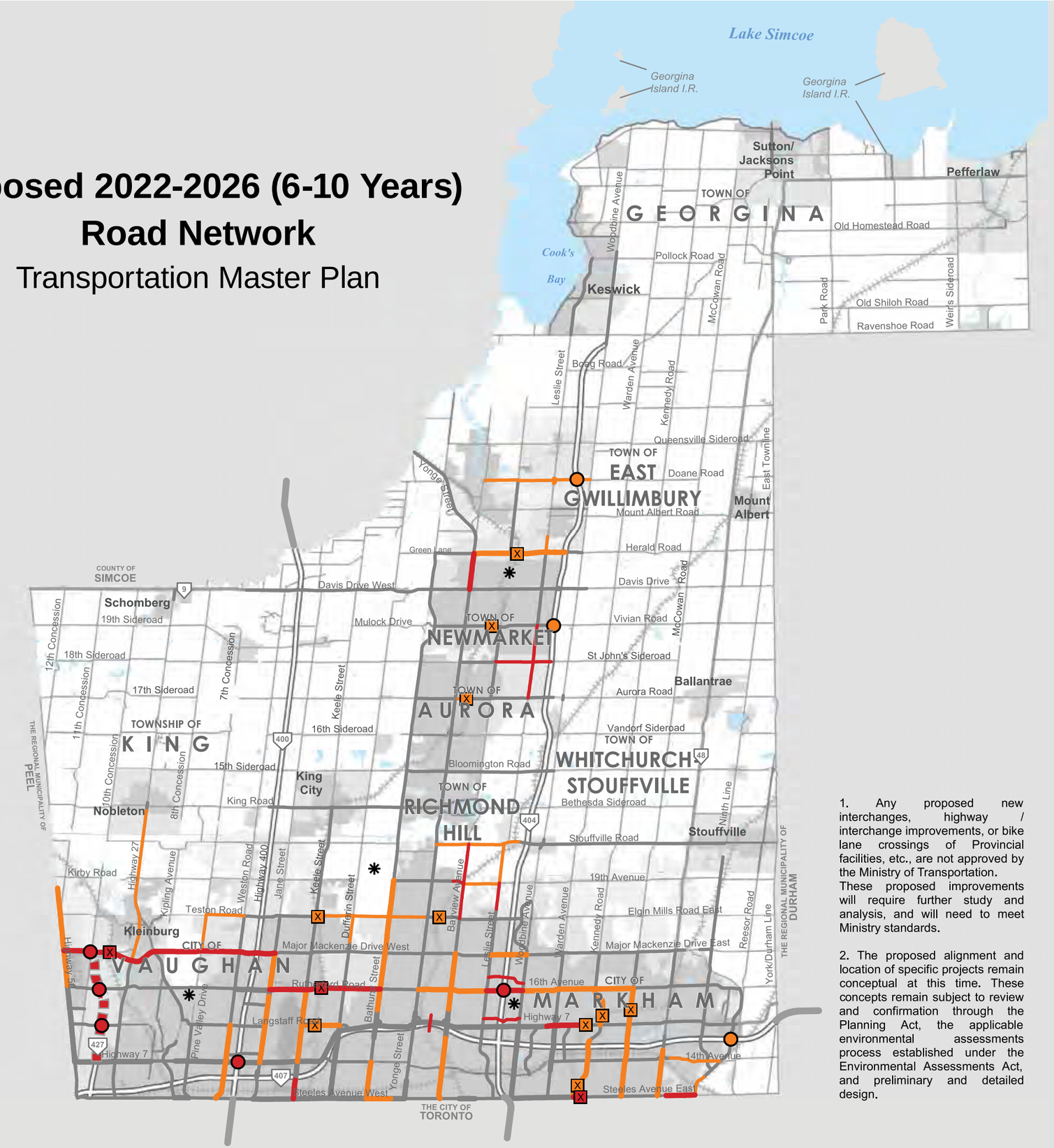
Figure C1

Proposed 2022-2026 (6-10 Years) Road Network

Transportation Master Plan



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MAP 17

Thursday, May 12, 2016

Road Phasing

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Grade Separations Phasing

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Interchange Improvements Phasing (to be confirmed by MTO)

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Note:

- Special Study Area

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

York Region yorkmaps

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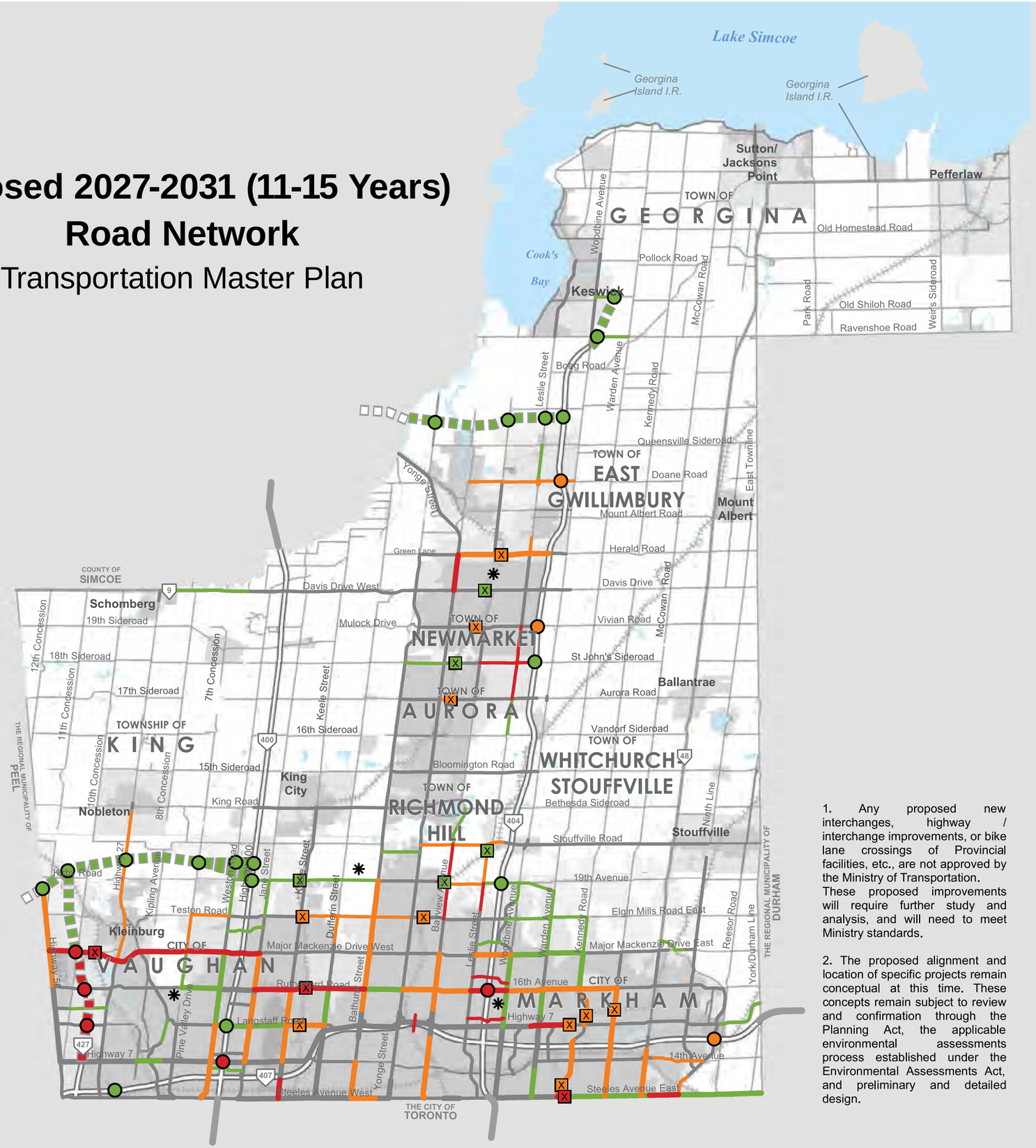
Transportation Services

Figure C2

Proposed 2027-2031 (11-15 Years) Road Network

Transportation Master Plan



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2. The proposed alignment and location of specific projects remain conceptual at this time. These concepts remain subject to review and confirmation through the Planning Act, the applicable environmental assessments process established under the Environmental Assessments Act, and preliminary and detailed design.

MAP 18

Thursday, May 12, 2016

Road Phasing

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Grade Separations Phasing

- X 2017 - 2021
- X 2022 - 2026
- X 2027 - 2031
- X 2032 - 2041

Interchange Improvements Phasing (to be confirmed by MTO)

- 2017 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2041

Note:

✱ Special Study Area

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

York Region yorkmaps

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Transportation Services

Figure C3

Appendix D – Regional Cycling Infrastructure Plans (from draft TMP)

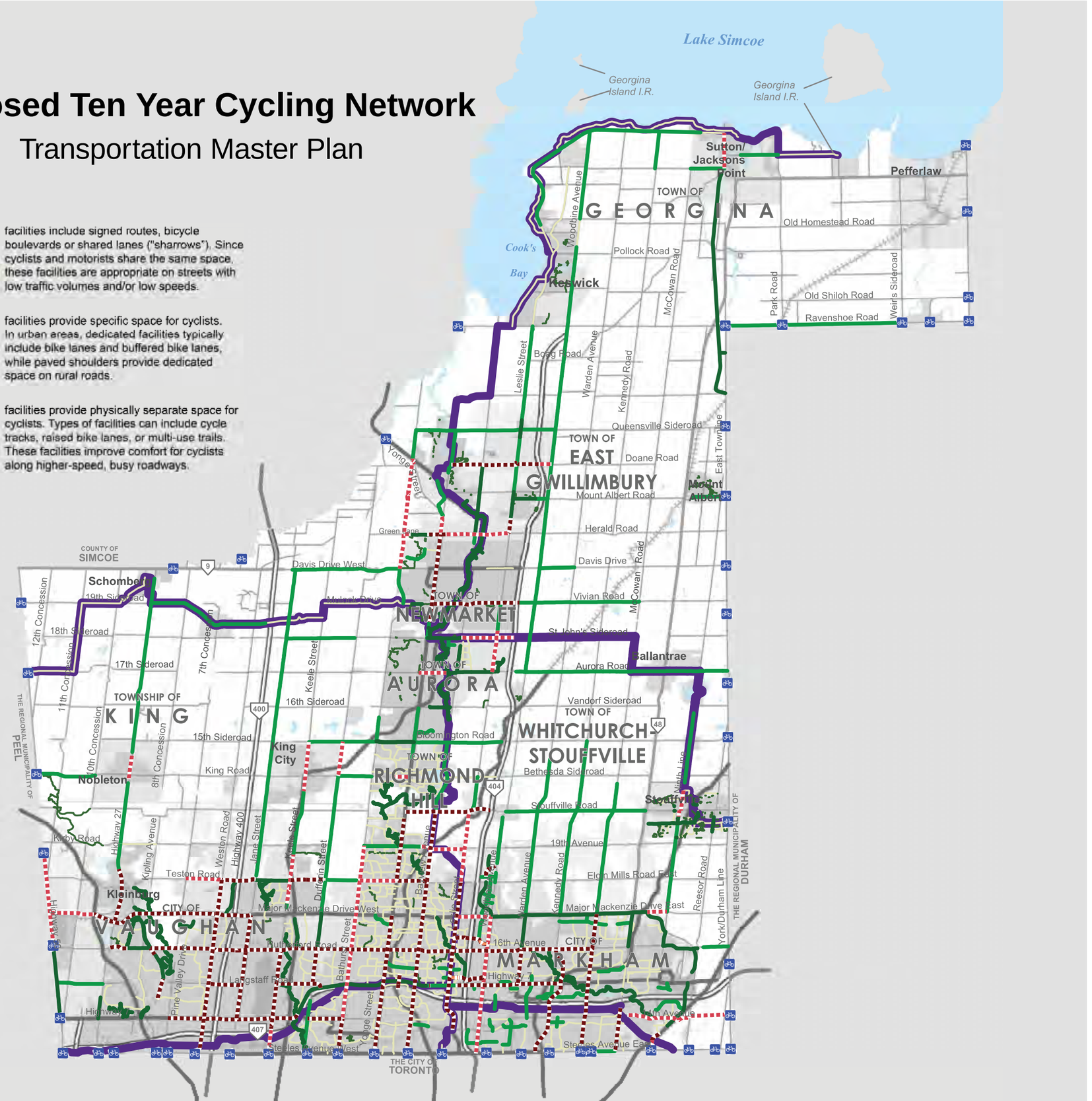
Proposed Ten Year Cycling Network

Transportation Master Plan

Shared facilities include signed routes, bicycle boulevards or shared lanes ("sharrows"). Since cyclists and motorists share the same space, these facilities are appropriate on streets with low traffic volumes and/or low speeds.

Dedicated facilities provide specific space for cyclists. In urban areas, dedicated facilities typically include bike lanes and buffered bike lanes, while paved shoulders provide dedicated space on rural roads.

Separated facilities provide physically separate space for cyclists. Types of facilities can include cycle tracks, raised bike lanes, or multi-use trails. These facilities improve comfort for cyclists along higher-speed, busy roadways.



MAP 10

Thursday, May 12, 2016

Existing Cycling Network

- Shared Facility
- Dedicated Facility
- Separated Facility

Proposed Cycling Facilities

- Local Cycling Route of Regional Significance
- Dedicated
- Separated
- Conceptual Region-Wide Trail System
- External Connection

GO Rail

- Rapid Transit / GO Corridor

BASE MAP INFORMATION

- Provincial Freeway
- Provincial Highway
- Road
- Railway

0 1 2 4 6 8 km

York Region yorkmaps

Produced by:
Infrastructure Management & PMO Branch
Transportation Services

Figure D1

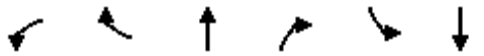
Appendix E – Synchro Output
Existing Condition

This appendix contains the following outputs in order:

- Existing AM;
- Existing PM.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	351	294	296	65	187	840
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	1607	3592	1607	1796	3592
Flt Permitted	0.95	1.00	1.00	1.00	0.56	1.00
Satd. Flow (perm)	1796	1607	3592	1607	1053	3592
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	382	320	322	71	203	913
RTOR Reduction (vph)	0	234	0	30	0	0
Lane Group Flow (vph)	382	86	322	41	203	913
Turn Type		custom		Perm	Perm	
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Actuated Green, G (s)	25.0	25.0	53.8	53.8	53.8	53.8
Effective Green, g (s)	25.0	25.0	53.8	53.8	53.8	53.8
Actuated g/C Ratio	0.27	0.27	0.58	0.58	0.58	0.58
Clearance Time (s)	7.0	7.0	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	481	431	2071	927	607	2071
v/s Ratio Prot			0.09			c0.25
v/s Ratio Perm	c0.21	0.05		0.03	0.19	
v/c Ratio	0.79	0.20	0.16	0.04	0.33	0.44
Uniform Delay, d1	31.8	26.4	9.2	8.6	10.4	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.2	0.2	0.1	1.5	0.7
Delay (s)	40.5	26.6	9.3	8.7	11.8	11.9
Level of Service	D	C	A	A	B	B
Approach Delay (s)	34.2		9.2			11.9
Approach LOS	C		A			B

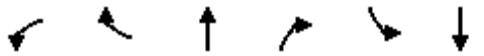
Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	471	0	0	1339
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	512	0	0	1455
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			323			390
pX, platoon unblocked	0.88					
vC, conflicting volume	1240	256			512	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	256			512	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	213	743			1050	

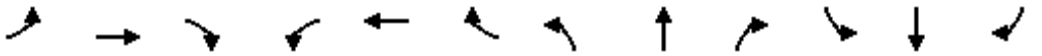
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	0	256	256	0	0	728	728
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.15	0.15	0.00	0.00	0.43	0.43
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A						
Approach Delay (s)	0.0		0.0			0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		



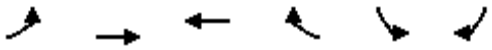
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	471	0	0	1339
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)			5.5			5.5
Lane Util. Factor			0.95			0.95
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3592			3592
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3592			3592
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	512	0	0	1455
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	512	0	0	1455
Turn Type				Perm	Perm	
Protected Phases			2			6
Permitted Phases	8			2	6	
Actuated Green, G (s)			82.0			82.0
Effective Green, g (s)			82.0			82.0
Actuated g/C Ratio			1.00			1.00
Clearance Time (s)			5.5			5.5
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			3592			3592
v/s Ratio Prot			0.14			c0.41
v/s Ratio Perm						
v/c Ratio			0.14			0.41
Uniform Delay, d1			0.0			0.0
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.3
Delay (s)			0.1			0.3
Level of Service			A			A
Approach Delay (s)	0.0		0.1			0.3
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	0.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	556	134	233	1217	44	169	379	144	103	909	474
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.07	1.00	1.00	0.38	1.00	1.00	0.10	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	124	3592	1607	712	3592	1607	190	3592	1607	861	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	604	146	253	1323	48	184	412	157	112	988	515
RTOR Reduction (vph)	0	0	60	0	0	11	0	0	100	0	0	98
Lane Group Flow (vph)	172	604	86	253	1323	37	184	412	57	112	988	417
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	72.1	61.1	61.1	66.1	58.1	58.1	50.1	39.7	39.7	45.7	37.5	37.5
Effective Green, g (s)	72.1	61.1	61.1	66.1	58.1	58.1	50.1	39.7	39.7	45.7	37.5	37.5
Actuated g/C Ratio	0.51	0.44	0.44	0.47	0.42	0.42	0.36	0.28	0.28	0.33	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	1568	701	398	1491	667	187	1019	456	336	962	430
v/s Ratio Prot	c0.07	0.17		0.04	0.37		c0.07	0.11		0.02	0.28	
v/s Ratio Perm	c0.39		0.05	0.26		0.02	c0.28		0.04	0.09		0.26
v/c Ratio	0.88	0.39	0.12	0.64	0.89	0.06	0.98	0.40	0.13	0.33	1.03	0.97
Uniform Delay, d1	38.7	26.7	23.5	25.3	37.9	24.5	37.2	40.6	37.3	33.9	51.2	50.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.0	0.2	0.1	3.3	6.8	0.0	60.7	1.2	0.6	0.6	36.1	36.4
Delay (s)	72.7	26.9	23.6	28.6	44.7	24.6	97.9	41.8	37.8	34.5	87.4	87.1
Level of Service	E	C	C	C	D	C	F	D	D	C	F	F
Approach Delay (s)		34.9			41.6			54.7			83.6	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM Average Control Delay	56.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



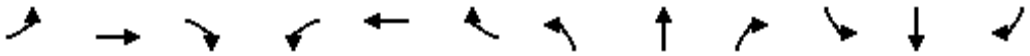
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	33	790	1920	14	50	45
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.07	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	130	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	859	2087	15	54	49
RTOR Reduction (vph)	0	0	0	1	0	19
Lane Group Flow (vph)	36	859	2087	14	54	30
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	101.9	101.9	101.9	101.9	8.5	8.5
Effective Green, g (s)	101.9	101.9	101.9	101.9	8.5	8.5
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.07	0.07
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	2942	2942	1316	123	110
v/s Ratio Prot		0.24	c0.58		c0.03	
v/s Ratio Perm	0.28			0.01		0.02
v/c Ratio	0.34	0.29	0.71	0.01	0.44	0.28
Uniform Delay, d1	2.8	2.7	4.9	2.1	55.7	55.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.3	1.5	0.0	2.5	1.4
Delay (s)	11.3	2.9	6.3	2.1	58.2	56.4
Level of Service	B	A	A	A	E	E
Approach Delay (s)		3.3	6.3		57.3	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	124.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	794	4	11	1954	8	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	863	4	12	2124	9	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				382		
pX, platoon unblocked					0.23	
vC, conflicting volume			867		1949	432
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			867		0	432
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	94
cM capacity (veh/h)			772		234	572

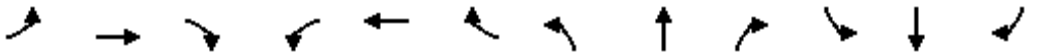
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	432	432	4	12	1062	1062	40
Volume Left	0	0	0	12	0	0	9
Volume Right	0	0	4	0	0	0	32
cSH	1700	1700	1700	772	1700	1700	436
Volume to Capacity	0.25	0.25	0.00	0.02	0.62	0.62	0.09
Queue Length 95th (m)	0.0	0.0	0.0	0.4	0.0	0.0	2.3
Control Delay (s)	0.0	0.0	0.0	9.7	0.0	0.0	14.1
Lane LOS				A			B
Approach Delay (s)	0.0			0.1			14.1
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	788	17	7	1952	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.99	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776			1670	
Flt Permitted	0.07	1.00	1.00	0.33	1.00	1.00		0.75			0.94	
Satd. Flow (perm)	126	3592	1607	618	3592	1607		1392			1588	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	857	18	8	2122	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	7	0	0	7	0
Lane Group Flow (vph)	12	857	15	8	2122	3	0	53	0	0	3	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	96.9	96.9	96.9	96.9	96.9	96.9		8.3			8.3	
Effective Green, g (s)	96.9	96.9	96.9	96.9	96.9	96.9		8.3			8.3	
Actuated g/C Ratio	0.83	0.83	0.83	0.83	0.83	0.83		0.07			0.07	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	105	2995	1340	515	2995	1340		99			113	
v/s Ratio Prot		0.24			c0.59							
v/s Ratio Perm	0.09		0.01	0.01		0.00		c0.04			0.00	
v/c Ratio	0.11	0.29	0.01	0.02	0.71	0.00		0.53			0.02	
Uniform Delay, d1	1.8	2.1	1.6	1.6	3.9	1.6		52.1			50.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	2.2	0.2	0.0	0.1	1.4	0.0		5.4			0.1	
Delay (s)	4.0	2.3	1.6	1.7	5.4	1.6		57.4			50.3	
Level of Service	A	A	A	A	A	A		E			D	
Approach Delay (s)		2.4			5.3			57.4			50.3	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	116.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



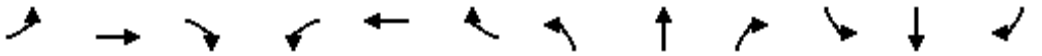
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	635	235	391	1486	101	132	232	112	153	1047	198
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.27	1.00	1.00	0.12	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	156	3592	1607	503	3592	1607	218	3592	1607	1010	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	690	255	425	1615	110	143	252	122	166	1138	215
RTOR Reduction (vph)	0	0	84	0	0	21	0	0	89	0	0	14
Lane Group Flow (vph)	51	690	171	425	1615	89	143	252	33	166	1138	201
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	48.5	48.5	48.5	64.5	64.5	64.5	40.2	34.7	34.7	49.5	40.0	40.0
Effective Green, g (s)	48.5	48.5	48.5	64.5	64.5	64.5	40.2	34.7	34.7	49.5	40.0	40.0
Actuated g/C Ratio	0.37	0.37	0.37	0.50	0.50	0.50	0.31	0.27	0.27	0.38	0.31	0.31
Clearance Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1340	600	369	1782	797	134	959	429	450	1105	494
v/s Ratio Prot		0.19		c0.11	0.45		c0.05	0.07		0.03	c0.32	
v/s Ratio Perm	0.33		0.11	c0.47		0.06	0.28		0.02	0.11		0.13
v/c Ratio	0.88	0.51	0.28	1.15	0.91	0.11	1.07	0.26	0.08	0.37	1.03	0.41
Uniform Delay, d1	38.0	31.6	28.6	28.8	30.0	17.5	42.9	37.6	35.7	27.5	45.0	35.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.9	1.4	1.2	94.9	8.2	0.3	96.8	0.1	0.1	0.5	35.0	0.5
Delay (s)	125.0	33.0	29.8	123.8	38.2	17.8	139.7	37.7	35.7	28.0	80.0	36.2
Level of Service	F	C	C	F	D	B	F	D	D	C	F	D
Approach Delay (s)		36.9			54.0			65.5			68.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	56.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	126.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	700	54	23	2133	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	761	59	25	2318	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.54	
vC, conflicting volume			820		1970	380
vC1, stage 1 conf vol					761	
vC2, stage 2 conf vol					1209	
vCu, unblocked vol			820		1103	380
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			97		56	95
cM capacity (veh/h)			805		340	617

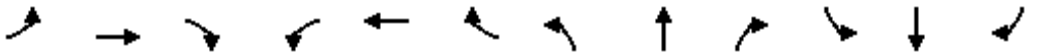
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	380	380	59	25	1159	1159	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	805	1700	1700	340	617
Volume to Capacity	0.22	0.22	0.03	0.03	0.68	0.68	0.44	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	16.5	1.1
Control Delay (s)	0.0	0.0	0.0	9.6	0.0	0.0	23.7	11.1
Lane LOS				A			C	B
Approach Delay (s)	0.0			0.1			21.6	
Approach LOS							C	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		



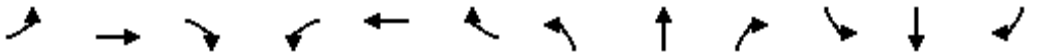
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	530	190	178	1697	110	256	225	99	57	664	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.33	1.00	1.00	0.16	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	170	3592	1607	623	3592	1607	299	3592	1607	1134	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	576	207	193	1845	120	278	245	108	62	722	221
RTOR Reduction (vph)	0	0	130	0	0	65	0	0	63	0	0	24
Lane Group Flow (vph)	37	576	77	193	1845	56	278	245	45	62	722	197
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Effective Green, g (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Actuated g/C Ratio	0.37	0.37	0.37	0.46	0.46	0.46	0.41	0.41	0.41	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	1332	596	357	1661	743	304	1482	663	293	928	415
v/s Ratio Prot		0.16		0.03	c0.51		c0.11	0.07			0.20	
v/s Ratio Perm	0.22		0.05	0.22		0.03	c0.27		0.03	0.05		0.12
v/c Ratio	0.59	0.43	0.13	0.54	1.11	0.07	0.91	0.17	0.07	0.21	0.78	0.47
Uniform Delay, d1	30.4	28.3	24.9	21.0	32.2	18.0	27.3	22.2	21.3	34.9	41.3	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.3	1.0	0.4	1.7	59.0	0.2	30.3	0.2	0.2	1.6	6.4	3.8
Delay (s)	64.7	29.3	25.4	22.7	91.3	18.2	57.6	22.5	21.5	36.6	47.7	41.4
Level of Service	E	C	C	C	F	B	E	C	C	D	D	D
Approach Delay (s)		29.9			81.1			37.8			45.6	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	58.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	678	156	453	1772	35	41	142	83	27	916	113
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.10	1.00	1.00	0.25	1.00	1.00	0.11	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	180	3592	1607	467	3592	1607	217	3592	1607	1237	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	737	170	492	1926	38	45	154	90	29	996	123
RTOR Reduction (vph)	0	0	17	0	0	15	0	0	61	0	0	5
Lane Group Flow (vph)	11	737	153	492	1926	23	45	154	29	29	996	118
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	42.1	42.1	42.1	58.1	58.1	58.1	34.9	34.9	34.9	34.9	34.9	34.9
Effective Green, g (s)	42.1	42.1	42.1	58.1	58.1	58.1	34.9	34.9	34.9	34.9	34.9	34.9
Actuated g/C Ratio	0.39	0.39	0.39	0.54	0.54	0.54	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	71	1413	632	390	1950	873	71	1172	524	403	1172	524
v/s Ratio Prot		0.21		c0.13	0.54			0.04			c0.28	
v/s Ratio Perm	0.06		0.10	c0.56		0.01	0.21		0.02	0.02		0.07
v/c Ratio	0.15	0.52	0.24	1.26	0.99	0.03	0.63	0.13	0.06	0.07	0.85	0.23
Uniform Delay, d1	21.0	24.8	21.8	20.4	24.1	11.3	30.6	25.4	24.7	24.9	33.6	26.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	1.4	0.9	136.8	17.7	0.1	17.0	0.1	0.0	0.1	5.9	0.2
Delay (s)	25.6	26.1	22.7	157.2	41.8	11.4	47.6	25.4	24.8	25.0	39.6	26.4
Level of Service	C	C	C	F	D	B	D	C	C	C	D	C
Approach Delay (s)		25.5			64.4			28.7			37.8	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	701	53	25	2214	21	127	1	45	6	2	11
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3587		1796	1613		1796	1647	
Flt Permitted	0.05	1.00	1.00	0.36	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)	96	3592	1607	672	3587		1415	1613		1370	1647	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	762	58	27	2407	23	138	1	49	7	2	12
RTOR Reduction (vph)	0	0	16	0	0	0	0	42	0	0	4	0
Lane Group Flow (vph)	15	762	42	27	2430	0	138	8	0	7	10	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	78.6	78.6	78.6	78.6	78.6		15.8	15.8		15.8	15.8	
Effective Green, g (s)	78.6	78.6	78.6	78.6	78.6		15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73		0.15	0.15		0.15	0.15	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	70	2605	1165	487	2601		206	235		200	240	
v/s Ratio Prot		0.21			c0.68			0.01			0.01	
v/s Ratio Perm	0.16		0.03	0.04			c0.10			0.01		
v/c Ratio	0.21	0.29	0.04	0.06	0.93		0.67	0.03		0.04	0.04	
Uniform Delay, d1	4.8	5.2	4.2	4.3	12.7		43.8	39.8		39.8	39.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	0.3	0.1	0.2	7.8		8.0	0.1		0.1	0.1	
Delay (s)	11.7	5.5	4.3	4.5	20.5		51.8	39.8		39.8	39.9	
Level of Service	B	A	A	A	C		D	D		D	D	
Approach Delay (s)		5.5			20.3			48.6			39.8	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

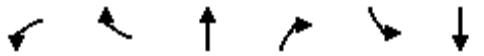
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	168	122	853	319	93	510
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	1607	3592	1607	1796	3592
Flt Permitted	0.95	1.00	1.00	1.00	0.29	1.00
Satd. Flow (perm)	1796	1607	3592	1607	552	3592
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	133	927	347	101	554
RTOR Reduction (vph)	0	112	0	86	0	0
Lane Group Flow (vph)	183	21	927	261	101	554
Turn Type		custom		Perm	Perm	
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Actuated Green, G (s)	14.9	14.9	65.4	65.4	65.4	65.4
Effective Green, g (s)	14.9	14.9	65.4	65.4	65.4	65.4
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.69	0.69
Clearance Time (s)	7.0	7.0	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	253	2478	1109	381	2478
v/s Ratio Prot			c0.26			0.15
v/s Ratio Perm	c0.10	0.01		0.16	0.18	
v/c Ratio	0.65	0.08	0.37	0.24	0.27	0.22
Uniform Delay, d1	37.5	34.1	6.1	5.4	5.6	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.1	0.4	0.5	1.7	0.2
Delay (s)	42.6	34.3	6.6	5.9	7.3	5.6
Level of Service	D	C	A	A	A	A
Approach Delay (s)	39.1		6.4			5.9
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	14.5
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	1180	0	0	740
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1283	0	0	804
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			323			390
pX, platoon unblocked						
vC, conflicting volume	1685	641			1283	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1685	641			1283	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	85	417			537	

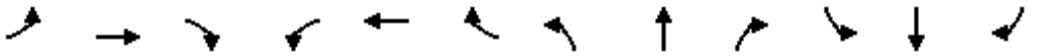
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	0	641	641	0	0	402	402
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.38	0.38	0.00	0.00	0.24	0.24
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A						
Approach Delay (s)	0.0		0.0			0.0		
Approach LOS	A							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		



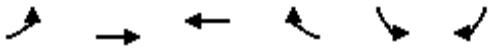
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	1180	0	0	740
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)			5.5			5.5
Lane Util. Factor			0.95			0.95
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3592			3592
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3592			3592
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1283	0	0	804
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1283	0	0	804
Turn Type		custom		Perm	Perm	
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Actuated Green, G (s)			69.5			69.5
Effective Green, g (s)			69.5			69.5
Actuated g/C Ratio			1.00			1.00
Clearance Time (s)			5.5			5.5
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			3592			3592
v/s Ratio Prot			c0.36			0.22
v/s Ratio Perm						
v/c Ratio			0.36			0.22
Uniform Delay, d1			0.0			0.0
Progression Factor			1.00			1.00
Incremental Delay, d2			0.3			0.1
Delay (s)			0.3			0.1
Level of Service			A			A
Approach Delay (s)	0.0		0.3			0.1
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	0.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1399	198	169	713	54	145	829	363	119	540	143
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.27	1.00	1.00	0.06	1.00	1.00	0.27	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	516	3592	1607	120	3592	1607	518	3592	1607	201	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	1521	215	184	775	59	158	901	395	129	587	155
RTOR Reduction (vph)	0	0	34	0	0	21	0	0	99	0	0	70
Lane Group Flow (vph)	332	1521	181	184	775	38	158	901	296	129	587	85
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	71.1	63.1	63.1	71.1	63.1	63.1	45.9	37.7	37.7	45.9	37.7	37.7
Effective Green, g (s)	71.1	63.1	63.1	71.1	63.1	63.1	45.9	37.7	37.7	45.9	37.7	37.7
Actuated g/C Ratio	0.51	0.45	0.45	0.51	0.45	0.45	0.33	0.27	0.27	0.33	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	335	1619	724	157	1619	724	245	967	433	159	967	433
v/s Ratio Prot	0.06	0.42		c0.07	0.22		0.04	c0.25		c0.05	0.16	
v/s Ratio Perm	0.45		0.11	c0.53		0.02	0.17		0.18	0.22		0.05
v/c Ratio	0.99	0.94	0.25	1.17	0.48	0.05	0.64	0.93	0.68	0.81	0.61	0.20
Uniform Delay, d1	32.4	36.6	23.8	39.4	26.9	21.6	36.7	49.9	45.8	37.6	44.7	39.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.6	10.9	0.2	125.5	0.2	0.0	5.7	16.5	8.5	25.9	2.8	1.0
Delay (s)	79.0	47.6	24.0	164.9	27.2	21.7	42.4	66.4	54.3	63.6	47.5	40.5
Level of Service	E	D	C	F	C	C	D	E	D	E	D	D
Approach Delay (s)		50.2			51.7			60.5			48.6	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	53.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



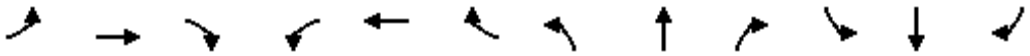
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	34	1836	937	21	74	40
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.27	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	516	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1996	1018	23	80	43
RTOR Reduction (vph)	0	0	0	3	0	40
Lane Group Flow (vph)	37	1996	1018	20	80	3
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	97.8	97.8	97.8	97.8	9.4	9.4
Effective Green, g (s)	97.8	97.8	97.8	97.8	9.4	9.4
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.08	0.08
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	416	2898	2898	1297	139	125
v/s Ratio Prot		c0.56	0.28		c0.04	
v/s Ratio Perm	0.07			0.01		0.00
v/c Ratio	0.09	0.69	0.35	0.02	0.58	0.03
Uniform Delay, d1	2.4	5.1	3.2	2.3	54.0	51.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.4	0.3	0.0	5.7	0.1
Delay (s)	2.9	6.4	3.5	2.3	59.6	51.8
Level of Service	A	A	A	A	E	D
Approach Delay (s)		6.4	3.5		56.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	121.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1810	11	15	962	1	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1967	12	16	1046	1	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				382		
pX, platoon unblocked					0.96	
vC, conflicting volume			1979		2523	984
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1979		2501	984
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		95	89
cM capacity (veh/h)			288		21	248

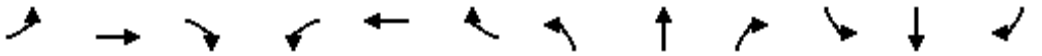
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	984	984	12	16	523	523	29
Volume Left	0	0	0	16	0	0	1
Volume Right	0	0	12	0	0	0	28
cSH	1700	1700	1700	288	1700	1700	178
Volume to Capacity	0.58	0.58	0.01	0.06	0.31	0.31	0.17
Queue Length 95th (m)	0.0	0.0	0.0	1.4	0.0	0.0	4.4
Control Delay (s)	0.0	0.0	0.0	18.2	0.0	0.0	29.2
Lane LOS				C			D
Approach Delay (s)	0.0			0.3			29.2
Approach LOS							D

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1803	22	12	943	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747			1720	
Flt Permitted	0.28	1.00	1.00	0.09	1.00	1.00		0.78			0.86	
Satd. Flow (perm)	522	3592	1607	173	3592	1607		1410			1507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1960	24	13	1025	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	8	0	0	15	0
Lane Group Flow (vph)	7	1960	22	13	1025	8	0	16	0	0	15	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	98.2	98.2	98.2	98.2	98.2	98.2		4.5			4.5	
Effective Green, g (s)	98.2	98.2	98.2	98.2	98.2	98.2		4.5			4.5	
Actuated g/C Ratio	0.86	0.86	0.86	0.86	0.86	0.86		0.04			0.04	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	451	3102	1388	149	3102	1388		56			60	
v/s Ratio Prot		c0.55			0.29							
v/s Ratio Perm	0.01		0.01	0.08		0.01		c0.01			0.01	
v/c Ratio	0.02	0.63	0.02	0.09	0.33	0.01		0.29			0.24	
Uniform Delay, d1	1.1	2.3	1.1	1.1	1.5	1.1		53.1			53.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.1	1.0	0.0	1.2	0.3	0.0		2.9			2.1	
Delay (s)	1.1	3.3	1.1	2.3	1.8	1.1		55.9			55.1	
Level of Service	A	A	A	A	A	A		E			E	
Approach Delay (s)		3.3			1.8			55.9			55.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



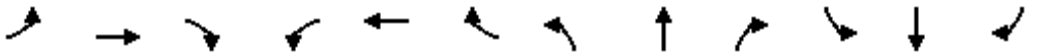
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	1422	169	153	772	174	219	969	352	95	290	41
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.22	1.00	1.00	0.08	1.00	1.00	0.54	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	407	3592	1607	151	3592	1607	1027	3592	1607	190	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	1546	184	166	839	189	238	1053	383	103	315	45
RTOR Reduction (vph)	0	0	62	0	0	70	0	0	107	0	0	31
Lane Group Flow (vph)	201	1546	122	166	839	119	238	1053	276	103	315	14
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	47.8	39.9	39.9
Effective Green, g (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	47.8	39.9	39.9
Actuated g/C Ratio	0.45	0.38	0.38	0.45	0.38	0.38	0.37	0.31	0.31	0.37	0.31	0.31
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	267	1383	619	169	1383	619	427	1106	495	168	1103	494
v/s Ratio Prot	0.05	c0.43		c0.06	0.23		0.03	c0.29		c0.04	0.09	
v/s Ratio Perm	0.29		0.08	0.38		0.07	0.17		0.17	0.19		0.01
v/c Ratio	0.75	1.12	0.20	0.98	0.61	0.19	0.56	0.95	0.56	0.61	0.29	0.03
Uniform Delay, d1	26.0	40.0	26.6	33.6	32.1	26.5	30.6	44.0	37.5	31.9	34.2	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	63.4	0.7	63.6	2.0	0.7	1.6	16.7	1.4	6.5	0.1	0.0
Delay (s)	37.4	103.3	27.3	97.2	34.0	27.2	32.2	60.8	38.9	38.4	34.3	31.5
Level of Service	D	F	C	F	C	C	C	E	D	D	C	C
Approach Delay (s)		89.2			41.7			51.7			35.0	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	129.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1688	143	13	889	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1835	155	14	966	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.88	
vC, conflicting volume			1990		2346	917
vC1, stage 1 conf vol					1835	
vC2, stage 2 conf vol					511	
vCu, unblocked vol			1990		2260	917
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			95		74	92
cM capacity (veh/h)			285		108	274

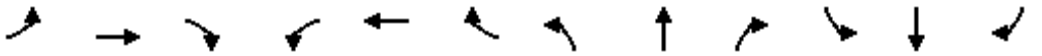
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	917	917	155	14	483	483	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	285	1700	1700	108	274
Volume to Capacity	0.54	0.54	0.09	0.05	0.28	0.28	0.26	0.08
Queue Length 95th (m)	0.0	0.0	0.0	1.2	0.0	0.0	7.3	1.8
Control Delay (s)	0.0	0.0	0.0	18.3	0.0	0.0	49.5	19.2
Lane LOS				C			E	C
Approach Delay (s)	0.0			0.3			36.7	
Approach LOS							E	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		



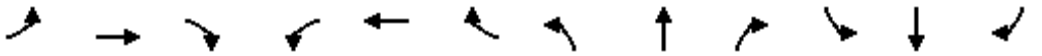
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1582	213	88	659	48	223	343	162	85	243	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.38	1.00	1.00	0.07	1.00	1.00	0.52	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	717	3592	1607	135	3592	1607	986	3592	1607	1002	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1720	232	96	716	52	242	373	176	92	264	22
RTOR Reduction (vph)	0	0	50	0	0	25	0	0	86	0	0	16
Lane Group Flow (vph)	39	1720	182	96	716	27	242	373	90	92	264	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.43	0.43	0.43	0.52	0.52	0.52	0.35	0.35	0.35	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	311	1557	696	168	1886	844	392	1257	562	259	928	415
v/s Ratio Prot		c0.48		c0.03	0.20		c0.04	0.10			0.07	
v/s Ratio Perm	0.05		0.11	0.27		0.02	c0.18		0.06	0.09		0.00
v/c Ratio	0.13	1.10	0.26	0.57	0.38	0.03	0.62	0.30	0.16	0.36	0.28	0.01
Uniform Delay, d1	20.4	34.0	21.7	26.2	16.9	13.8	31.3	28.3	26.8	36.3	35.6	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	57.2	0.9	4.6	0.6	0.1	2.9	0.6	0.6	3.8	0.8	0.1
Delay (s)	21.2	91.2	22.6	30.8	17.5	13.8	34.2	28.9	27.5	40.1	36.4	33.2
Level of Service	C	F	C	C	B	B	C	C	C	D	D	C
Approach Delay (s)		81.8			18.7			30.2			37.1	
Approach LOS		F			B			C			D	

Intersection Summary			
HCM Average Control Delay	53.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1535	96	98	822	45	208	692	400	42	170	13
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.32	1.00	1.00	0.07	1.00	1.00	0.51	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	603	3592	1607	129	3592	1607	972	3592	1607	547	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1668	104	107	893	49	226	752	435	46	185	14
RTOR Reduction (vph)	0	0	35	0	0	20	0	0	94	0	0	11
Lane Group Flow (vph)	66	1668	69	107	893	29	226	752	341	46	185	3
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	53.7	53.7	53.7	65.7	65.7	65.7	32.2	32.2	32.2	21.2	21.2	21.2
Effective Green, g (s)	53.7	53.7	53.7	65.7	65.7	65.7	32.2	32.2	32.2	21.2	21.2	21.2
Actuated g/C Ratio	0.48	0.48	0.48	0.59	0.59	0.59	0.29	0.29	0.29	0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	289	1724	771	180	2109	944	324	1034	462	104	681	304
v/s Ratio Prot		c0.46		c0.04	0.25		0.04	0.21			0.05	
v/s Ratio Perm	0.11		0.04	0.31		0.02	0.16		c0.21	0.08		0.00
v/c Ratio	0.23	0.97	0.09	0.59	0.42	0.03	0.70	0.73	0.74	0.44	0.27	0.01
Uniform Delay, d1	17.0	28.3	15.8	23.9	12.7	9.7	35.3	35.9	36.0	40.1	38.8	36.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	15.2	0.2	5.2	0.6	0.1	6.4	2.6	6.1	3.0	0.2	0.0
Delay (s)	18.8	43.5	16.0	29.1	13.3	9.8	41.7	38.5	42.1	43.1	39.0	36.8
Level of Service	B	D	B	C	B	A	D	D	D	D	D	D
Approach Delay (s)		41.0			14.8			40.1			39.6	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1723	108	36	841	75	63	7	41	74	6	32
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3548		1796	1650		1796	1654	
Flt Permitted	0.28	1.00	1.00	0.09	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	524	3592	1607	161	3548		1379	1650		1366	1654	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	1873	117	39	914	82	68	8	45	80	7	35
RTOR Reduction (vph)	0	0	11	0	4	0	0	16	0	0	32	0
Lane Group Flow (vph)	34	1873	106	39	992	0	68	37	0	80	10	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	78.4	78.4	78.4	78.4	78.4		10.0	10.0		10.0	10.0	
Effective Green, g (s)	78.4	78.4	78.4	78.4	78.4		10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.77		0.10	0.10		0.10	0.10	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	401	2750	1230	123	2716		135	161		133	162	
v/s Ratio Prot		c0.52			0.28			0.02			0.01	
v/s Ratio Perm	0.06		0.07	0.24			0.05			c0.06		
v/c Ratio	0.08	0.68	0.09	0.32	0.37		0.50	0.23		0.60	0.06	
Uniform Delay, d1	3.0	5.9	3.0	3.7	3.9		43.8	42.6		44.3	42.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	1.4	0.1	6.7	0.4		2.9	0.7		7.5	0.2	
Delay (s)	3.4	7.3	3.1	10.4	4.3		46.8	43.4		51.7	42.1	
Level of Service	A	A	A	B	A		D	D		D	D	
Approach Delay (s)		7.0			4.5			45.3			48.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Levels of Service Definition

Levels of Service – Highway Capacity Manual

SIGNALIZED INTERSECTIONS

Level of Service	Stopped Delay per Vehicle (sec)	Expected delay to Minor Street traffic from the Major Street
A	< 5.1	Most vehicles arrive during the green phase and do not stop; traffic progression is extremely favourable.
B	5.1 - 15.0	More vehicles stop than for LOS A; traffic progression is good.
C	15.1 - 25.0	Individual cycle failures may appear and the number of vehicles stopping is significant; traffic progression is fair.
D	25.1 - 40.0	Individual cycle failures are noticeable, many vehicles stop; traffic progression is unfavourable.
E	40.1 - 60.0	Individual cycle failures are frequent; traffic progression is poor, acceptable delay is at its limit.
F	> 60	Many individual cycle failures, arrival flow rate exceeds capacity, delay is unacceptable to most drivers.

UNSIGNALIZED INTERSECTIONS

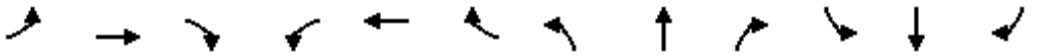
Level of Service	Delay Range	Level of Service	Delay Range
A	<= 10	D	>25 and <=35
B	>10 and <=15	E	>35 and <=50
C	>15 and <=25	F	>50

Source: Highway Capacity Manual, TRB Special Report 209, 1998

Appendix G – Synchro Output
2021 Background Condition

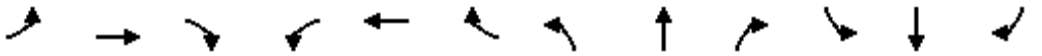
This appendix contains the following outputs in order:

- Scenario A, Background AM;
- Scenario A, Background PM;
- Scenario B, Background AM;
- Scenario B, Background PM.



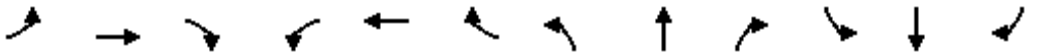
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	351	0	296	0	408	65	194	1150	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.50	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	936	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	382	0	322	0	443	71	211	1250	0
RTOR Reduction (vph)	0	0	0	0	220	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	0	0	382	102	0	0	443	38	211	1250	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				31.8	31.8			53.9	53.9	53.9	53.9	
Effective Green, g (s)				31.8	31.8			53.9	53.9	53.9	53.9	
Actuated g/C Ratio				0.32	0.32			0.54	0.54	0.54	0.54	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				454	510			1932	864	503	1932	
v/s Ratio Prot					0.06			0.12			c0.35	
v/s Ratio Perm				c0.27					0.02	0.23		
v/c Ratio				0.84	0.20			0.23	0.04	0.42	0.65	
Uniform Delay, d1				31.9	24.9			12.2	11.0	13.8	16.4	
Progression Factor				1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2				13.2	0.2			0.3	0.1	2.6	1.7	
Delay (s)				45.1	25.1			12.5	11.1	16.4	18.1	
Level of Service				D	C			B	B	B	B	
Approach Delay (s)		0.0			35.9			12.3			17.8	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



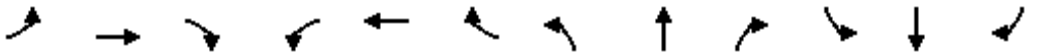
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	574	1	1	1647	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.42	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	785	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	624	1	1	1790	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	624	1	1	1790	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.2	1.2			77.7	77.7	77.7	77.7	
Effective Green, g (s)				1.2	1.2			77.7	77.7	77.7	77.7	
Actuated g/C Ratio				0.01	0.01			0.86	0.86	0.86	0.86	
Clearance Time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				25	21			3105	1389	678	3105	
v/s Ratio Prot					0.00			0.17			c0.50	
v/s Ratio Perm				c0.00					0.00	0.00		
v/c Ratio				0.12	0.00			0.20	0.00	0.00	0.58	
Uniform Delay, d1				43.8	43.8			1.0	0.8	0.8	1.6	
Progression Factor				1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2				2.1	0.0			0.1	0.0	0.0	0.8	
Delay (s)				46.0	43.8			1.1	0.8	0.8	2.4	
Level of Service				D	D			A	A	A	A	
Approach Delay (s)		0.0			44.9			1.1			2.4	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM Average Control Delay	2.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



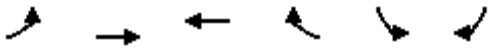
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	574	4	1	1650	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	0.95	1.00		0.95	1.00		0.11	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	1800	1607		1800	1607		206	3592	1607	785	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	624	4	1	1793	3
RTOR Reduction (vph)	0	13	0	0	7	0	0	0	1	0	0	0
Lane Group Flow (vph)	17	8	0	3	0	0	1	624	3	1	1793	3
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	4.2	4.2		4.2	4.2		74.8	74.8	74.8	74.8	74.8	74.8
Effective Green, g (s)	4.2	4.2		4.2	4.2		74.8	74.8	74.8	74.8	74.8	74.8
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.83	0.83	0.83	0.83	0.83	0.83
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	75		84	75		171	2985	1336	652	2985	1336
v/s Ratio Prot		0.00			0.00			0.17			c0.50	
v/s Ratio Perm	c0.01			0.00			0.00		0.00	0.00		0.00
v/c Ratio	0.20	0.10		0.04	0.00		0.01	0.21	0.00	0.00	0.60	0.00
Uniform Delay, d1	41.3	41.1		41.0	40.9		1.3	1.6	1.3	1.3	2.6	1.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.6		0.2	0.0		0.1	0.2	0.0	0.0	0.9	0.0
Delay (s)	42.5	41.7		41.1	40.9		1.4	1.7	1.3	1.3	3.5	1.3
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		42.0			41.0			1.7			3.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



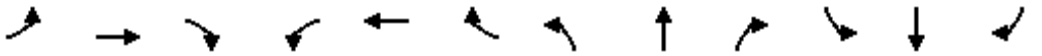
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	629	134	233	1261	44	169	484	144	103	1232	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.10	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	122	3592	1607	628	3592	1607	195	3592	1607	643	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	684	146	253	1371	48	184	526	157	112	1339	522
RTOR Reduction (vph)	0	0	52	0	0	10	0	0	79	0	0	97
Lane Group Flow (vph)	174	684	94	253	1371	38	184	526	78	112	1339	425
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Effective Green, g (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Actuated g/C Ratio	0.52	0.44	0.44	0.48	0.42	0.42	0.34	0.28	0.28	0.33	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	1593	713	368	1516	678	175	995	445	276	962	430
v/s Ratio Prot	c0.07	0.19		0.04	0.38		c0.07	0.15		0.02	c0.37	
v/s Ratio Perm	c0.40		0.06	0.29		0.02	0.29		0.05	0.11		0.26
v/c Ratio	0.89	0.43	0.13	0.69	0.90	0.06	1.05	0.53	0.18	0.41	1.39	0.99
Uniform Delay, d1	39.5	26.8	23.0	25.6	37.8	23.9	39.4	42.9	38.4	34.3	51.2	51.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.1	0.2	0.1	5.3	8.0	0.0	82.3	2.0	0.9	1.0	182.8	40.4
Delay (s)	75.6	27.0	23.1	30.9	45.8	24.0	121.7	44.9	39.3	35.3	234.0	91.4
Level of Service	E	C	C	C	D	C	F	D	D	D	F	F
Approach Delay (s)		34.8			42.9			60.2			185.0	
Approach LOS		C			D			E			F	

Intersection Summary			
HCM Average Control Delay	95.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



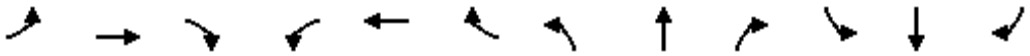
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	849	1987	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.06	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	106	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	923	2160	17	62	66
RTOR Reduction (vph)	0	0	0	1	0	16
Lane Group Flow (vph)	52	923	2160	16	62	50
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	99.0	99.0	99.0	99.0	10.9	10.9
Effective Green, g (s)	99.0	99.0	99.0	99.0	10.9	10.9
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.09	0.09
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	85	2870	2870	1284	158	141
v/s Ratio Prot		0.26	c0.60		c0.03	
v/s Ratio Perm	0.49			0.01		0.03
v/c Ratio	0.61	0.32	0.75	0.01	0.39	0.36
Uniform Delay, d1	4.9	3.4	6.3	2.5	53.4	53.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.7	0.3	1.9	0.0	1.6	1.6
Delay (s)	33.6	3.7	8.2	2.5	55.0	54.8
Level of Service	C	A	A	A	D	D
Approach Delay (s)		5.3	8.1		54.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	123.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



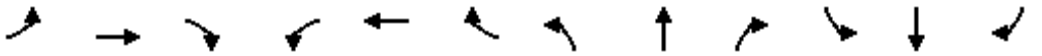
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	853	4	11	2021	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.28	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	537	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	927	4	12	2197	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	927	3	12	2197	0	9	6	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		60.4	60.4	60.4	60.4		16.5	16.5				
Effective Green, g (s)		60.4	60.4	60.4	60.4		16.5	16.5				
Actuated g/C Ratio		0.69	0.69	0.69	0.69		0.19	0.19				
Clearance Time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2468	1104	369	2468		269	302				
v/s Ratio Prot		0.26			c0.61			0.00				
v/s Ratio Perm			0.00	0.02			c0.01					
v/c Ratio		0.38	0.00	0.03	0.89		0.03	0.02				
Uniform Delay, d1		5.8	4.3	4.4	11.1		29.2	29.1				
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00				
Incremental Delay, d2		0.1	0.0	0.0	4.5		0.2	0.1				
Delay (s)		5.9	4.3	4.4	15.5		29.4	29.2				
Level of Service		A	A	A	B		C	C				
Approach Delay (s)		5.9			15.5			29.3			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	847	17	7	2019	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00		0.75		0.72	1.00	
Satd. Flow (perm)	100	3592	1607	576	3592	1607		1394		1358	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	921	18	8	2195	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	4	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	921	14	8	2195	3	0	53	0	2	1	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	92.7	92.7	92.7	92.7	92.7	92.7		8.8		8.8	8.8	
Effective Green, g (s)	92.7	92.7	92.7	92.7	92.7	92.7		8.8		8.8	8.8	
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80	0.80		0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	80	2871	1284	460	2871	1284		106		103	122	
v/s Ratio Prot		0.26			c0.61						0.00	
v/s Ratio Perm	0.12		0.01	0.01		0.00		c0.04		0.00		
v/c Ratio	0.15	0.32	0.01	0.02	0.76	0.00		0.50		0.02	0.00	
Uniform Delay, d1	2.7	3.1	2.4	2.4	6.0	2.3		51.5		49.6	49.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	3.9	0.3	0.0	0.1	2.0	0.0		3.6		0.1	0.0	
Delay (s)	6.6	3.4	2.4	2.4	8.0	2.3		55.1		49.7	49.6	
Level of Service	A	A	A	A	A	A		E		D	D	
Approach Delay (s)		3.5			8.0			55.1			49.6	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



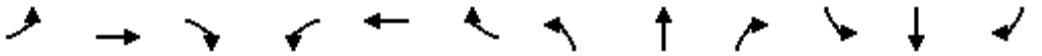
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	650	235	391	1537	117	132	308	112	197	1279	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.26	1.00	1.00	0.12	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	156	3592	1607	486	3592	1607	220	3592	1607	867	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	707	255	425	1671	127	143	335	122	214	1390	286
RTOR Reduction (vph)	0	0	82	0	0	24	0	0	90	0	0	12
Lane Group Flow (vph)	74	707	174	425	1671	103	143	335	32	214	1390	274
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	48.5	48.5	48.5	64.5	64.5	64.5	39.9	34.4	34.4	49.5	40.0	40.0
Effective Green, g (s)	48.5	48.5	48.5	64.5	64.5	64.5	39.9	34.4	34.4	49.5	40.0	40.0
Actuated g/C Ratio	0.37	0.37	0.37	0.50	0.50	0.50	0.31	0.26	0.26	0.38	0.31	0.31
Clearance Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1340	600	362	1782	797	134	950	425	409	1105	494
v/s Ratio Prot		0.20		c0.11	0.47		c0.05	0.09		0.04	c0.39	
v/s Ratio Perm	c0.47		0.11	0.47		0.06	0.28		0.02	0.15		0.17
v/c Ratio	1.28	0.53	0.29	1.17	0.94	0.13	1.07	0.35	0.08	0.52	1.26	0.55
Uniform Delay, d1	40.8	31.8	28.6	28.6	30.9	17.6	43.1	38.8	35.9	28.5	45.0	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	209.3	1.5	1.2	103.7	10.9	0.3	96.8	0.2	0.1	1.2	123.5	1.3
Delay (s)	250.0	33.3	29.9	132.3	41.8	18.0	139.9	39.0	35.9	29.7	168.5	38.9
Level of Service	F	C	C	F	D	B	F	D	D	C	F	D
Approach Delay (s)		47.9			57.7			62.4			133.2	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	81.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	133.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	912	54	23	2227	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	991	59	25	2421	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.54	
vC, conflicting volume			1050		2252	496
vC1, stage 1 conf vol					991	
vC2, stage 2 conf vol					1260	
vCu, unblocked vol			1050		1622	496
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		44	94
cM capacity (veh/h)			659		268	520

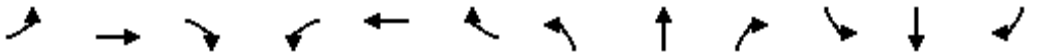
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	496	496	59	25	1210	1210	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	659	1700	1700	268	520
Volume to Capacity	0.29	0.29	0.03	0.04	0.71	0.71	0.56	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	23.9	1.4
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	34.2	12.3
Lane LOS				B			D	B
Approach Delay (s)	0.0			0.1			30.6	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		



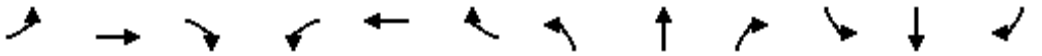
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	731	224	178	1788	117	269	314	99	79	908	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.55	1.00	1.00
Satd. Flow (perm)	170	3592	1607	399	3592	1607	216	3592	1607	1034	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	795	243	193	1943	127	292	341	108	86	987	221
RTOR Reduction (vph)	0	0	114	0	0	65	0	0	63	0	0	17
Lane Group Flow (vph)	37	795	129	193	1943	62	292	341	45	86	987	204
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Effective Green, g (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Actuated g/C Ratio	0.37	0.37	0.37	0.46	0.46	0.46	0.41	0.41	0.41	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	1332	596	266	1661	743	280	1482	663	267	928	415
v/s Ratio Prot		0.22		0.04	c0.54		c0.13	0.09			0.27	
v/s Ratio Perm	0.22		0.08	0.29		0.04	c0.30		0.03	0.08		0.13
v/c Ratio	0.59	0.60	0.22	0.73	1.17	0.08	1.04	0.23	0.07	0.32	1.06	0.49
Uniform Delay, d1	30.4	30.5	25.8	23.1	32.2	18.0	34.8	22.9	21.3	36.0	44.5	37.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.3	2.0	0.8	9.4	83.3	0.2	65.4	0.4	0.2	3.2	48.0	4.1
Delay (s)	64.7	32.5	26.7	32.6	115.5	18.3	100.2	23.2	21.5	39.2	92.5	41.9
Level of Service	E	C	C	C	F	B	F	C	C	D	F	D
Approach Delay (s)		32.3			103.0			53.3			80.3	
Approach LOS		C			F			D			F	

Intersection Summary			
HCM Average Control Delay	76.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



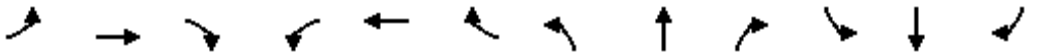
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	733	156	460	1946	46	41	254	85	59	1250	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.10	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	180	3592	1607	399	3592	1607	199	3592	1607	1100	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	797	170	500	2115	50	45	276	92	64	1359	288
RTOR Reduction (vph)	0	0	7	0	0	18	0	0	60	0	0	3
Lane Group Flow (vph)	67	797	163	500	2115	32	45	276	32	64	1359	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	42.0	42.0	42.0	58.0	58.0	58.0	38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	42.0	42.0	42.0	58.0	58.0	58.0	38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.38	0.38	0.38	0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	69	1371	614	350	1894	847	69	1241	555	380	1241	555
v/s Ratio Prot		0.22		c0.14	0.59			0.08			c0.38	
v/s Ratio Perm	0.37		0.10	c0.61		0.02	0.23		0.02	0.06		0.18
v/c Ratio	0.97	0.58	0.26	1.43	1.12	0.04	0.65	0.22	0.06	0.17	1.10	0.51
Uniform Delay, d1	33.4	27.0	23.4	21.2	26.0	12.5	30.4	25.5	24.0	25.0	36.0	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	100.4	1.8	1.1	208.7	60.4	0.1	20.0	0.1	0.0	0.2	55.6	0.8
Delay (s)	133.8	28.8	24.4	229.9	86.4	12.6	50.4	25.6	24.1	25.2	91.6	29.5
Level of Service	F	C	C	F	F	B	D	C	C	C	F	C
Approach Delay (s)		34.9			111.9			28.0			78.7	
Approach LOS		C			F			C			E	

Intersection Summary			
HCM Average Control Delay	82.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	142.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



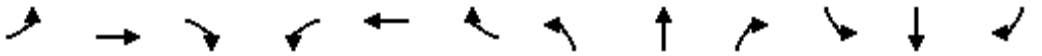
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	742	53	25	2280	79	127	11	45	176	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.33	1.00	1.00	0.73	1.00		0.72	1.00	1.00
Satd. Flow (perm)	101	3592	1607	624	3592	1607	1384	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	807	58	27	2478	86	138	12	49	191	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	40	0	0	0	3
Lane Group Flow (vph)	51	807	41	27	2478	78	138	21	0	191	38	119
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	75.2	75.2	75.2	75.2	75.2	75.2	20.7	20.7		20.7	20.7	20.7
Effective Green, g (s)	75.2	75.2	75.2	75.2	75.2	75.2	20.7	20.7		20.7	20.7	20.7
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	69	2458	1100	427	2458	1100	261	313		255	356	303
v/s Ratio Prot		0.22			c0.69			0.01			0.02	
v/s Ratio Perm	0.51		0.03	0.04		0.05	0.10			c0.14		0.07
v/c Ratio	0.74	0.33	0.04	0.06	1.01	0.07	0.53	0.07		0.75	0.11	0.39
Uniform Delay, d1	11.1	7.1	5.6	5.7	17.4	5.8	40.2	36.7		42.1	36.9	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	51.4	0.4	0.1	0.3	20.1	0.1	1.9	0.1		11.4	0.1	0.8
Delay (s)	62.5	7.4	5.7	6.0	37.5	5.9	42.1	36.8		53.5	37.1	39.9
Level of Service	E	A	A	A	D	A	D	D		D	D	D
Approach Delay (s)		10.4			36.1			40.5			47.0	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



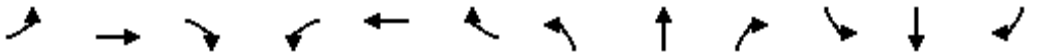
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	168	0	136	0	1171	319	100	725	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.18	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	339	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	183	0	148	0	1273	347	109	788	0
RTOR Reduction (vph)	0	0	0	0	49	0	0	0	67	0	0	0
Lane Group Flow (vph)	0	0	0	183	99	0	0	1273	280	109	788	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				17.7	17.7			65.1	65.1	65.1	65.1	
Effective Green, g (s)				17.7	17.7			65.1	65.1	65.1	65.1	
Actuated g/C Ratio				0.18	0.18			0.67	0.67	0.67	0.67	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				260	292			2403	1075	227	2403	
v/s Ratio Prot					0.06			c0.35			0.22	
v/s Ratio Perm				c0.13					0.17	0.32		
v/c Ratio				0.70	0.34			0.53	0.26	0.48	0.33	
Uniform Delay, d1				37.3	34.7			8.3	6.5	7.9	6.8	
Progression Factor				1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2				8.4	0.7			0.8	0.6	7.1	0.4	
Delay (s)				45.7	35.4			9.1	7.0	15.0	7.2	
Level of Service				D	D			A	A	B	A	
Approach Delay (s)		0.0			41.1			8.7			8.1	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



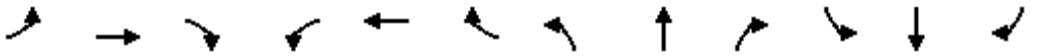
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	1490	6	6	937	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.14	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	266	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	1620	7	7	1018	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	1620	7	7	1018	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.2	1.2			81.3	81.3	81.3	81.3	
Effective Green, g (s)				1.2	1.2			81.3	81.3	81.3	81.3	
Actuated g/C Ratio				0.01	0.01			0.84	0.84	0.84	0.84	
Clearance Time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				24	20			3026	1354	224	3026	
v/s Ratio Prot					0.00			c0.45			0.28	
v/s Ratio Perm				c0.00					0.00	0.03		
v/c Ratio				0.12	0.00			0.54	0.00	0.03	0.34	
Uniform Delay, d1				47.1	47.1			2.2	1.2	1.2	1.7	
Progression Factor				1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2				2.3	0.0			0.7	0.0	0.3	0.3	
Delay (s)				49.5	47.1			2.9	1.2	1.5	2.0	
Level of Service				D	D			A	A	A	A	
Approach Delay (s)		0.0			48.3			2.9			2.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



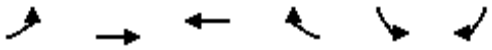
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1495	35	12	940	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.28	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		527	3592	1607	256	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1625	38	13	1022	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	2	0	0	2
Lane Group Flow (vph)	9	0	0	18	0	0	16	1625	36	13	1022	15
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	2.8	2.8		2.8	2.8		62.5	62.5	62.5	62.5	62.5	62.5
Effective Green, g (s)	2.8	2.8		2.8	2.8		62.5	62.5	62.5	62.5	62.5	62.5
Actuated g/C Ratio	0.04	0.04		0.04	0.04		0.82	0.82	0.82	0.82	0.82	0.82
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	69	59		69	59		432	2942	1316	210	2942	1316
v/s Ratio Prot		0.00			0.00			c0.45			0.28	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.05		0.01
v/c Ratio	0.13	0.01		0.26	0.00		0.04	0.55	0.03	0.06	0.35	0.01
Uniform Delay, d1	35.6	35.4		35.7	35.4		1.3	2.3	1.3	1.3	1.7	1.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0		2.0	0.0		0.2	0.8	0.0	0.6	0.3	0.0
Delay (s)	36.4	35.5		37.8	35.4		1.4	3.0	1.3	1.9	2.1	1.3
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		35.9			37.1			3.0			2.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



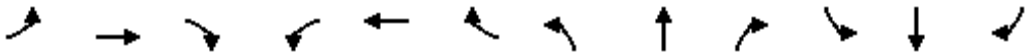
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1470	198	169	809	54	145	1173	363	119	753	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.23	1.00	1.00	0.06	1.00	1.00	0.12	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	428	3592	1607	119	3592	1607	221	3592	1607	202	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1598	215	184	879	59	158	1275	395	129	818	160
RTOR Reduction (vph)	0	0	33	0	0	19	0	0	83	0	0	52
Lane Group Flow (vph)	338	1598	182	184	879	40	158	1275	312	129	818	108
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	71.5	63.5	63.5	71.5	63.5	63.5	45.5	37.5	37.5	45.5	37.5	37.5
Effective Green, g (s)	71.5	63.5	63.5	71.5	63.5	63.5	45.5	37.5	37.5	45.5	37.5	37.5
Actuated g/C Ratio	0.51	0.45	0.45	0.51	0.45	0.45	0.32	0.27	0.27	0.32	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1629	729	157	1629	729	162	962	430	157	962	430
v/s Ratio Prot	0.07	0.44		c0.07	0.24		c0.06	c0.35		0.05	0.23	
v/s Ratio Perm	0.52		0.11	c0.53		0.03	0.26		0.19	0.22		0.07
v/c Ratio	1.14	0.98	0.25	1.17	0.54	0.06	0.98	1.33	0.73	0.82	0.85	0.25
Uniform Delay, d1	32.1	37.7	23.6	40.4	27.7	21.4	40.7	51.2	46.6	38.7	48.6	40.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.8	17.9	0.2	125.5	0.3	0.0	62.8	153.7	10.3	27.9	9.3	1.4
Delay (s)	126.9	55.5	23.8	165.9	28.0	21.5	103.5	204.9	56.8	66.6	57.9	41.6
Level of Service	F	E	C	F	C	C	F	F	E	E	E	D
Approach Delay (s)		63.6			50.3			164.2			56.6	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	89.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



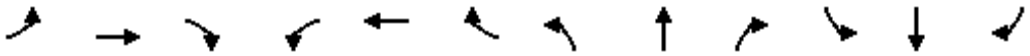
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1933	1016	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	461	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2101	1104	34	84	51
RTOR Reduction (vph)	0	0	0	5	0	46
Lane Group Flow (vph)	53	2101	1104	29	84	5
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	95.0	95.0	95.0	95.0	11.7	11.7
Effective Green, g (s)	95.0	95.0	95.0	95.0	11.7	11.7
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.10	0.10
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	2827	2827	1265	174	156
v/s Ratio Prot		c0.58	0.31		c0.05	
v/s Ratio Perm	0.11			0.02		0.00
v/c Ratio	0.15	0.74	0.39	0.02	0.48	0.03
Uniform Delay, d1	3.1	6.6	4.0	2.8	51.6	49.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.8	0.4	0.0	2.1	0.1
Delay (s)	3.9	8.4	4.4	2.8	53.7	49.5
Level of Service	A	A	A	A	D	D
Approach Delay (s)		8.3	4.3		52.1	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



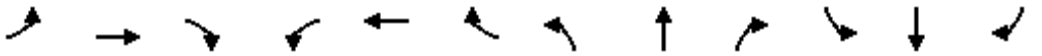
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1907	11	15	1041	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.06	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	109	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2073	12	16	1132	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	2073	10	16	1132	0	1	13	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		69.1	69.1	69.1	69.1		21.2	21.2				
Effective Green, g (s)		69.1	69.1	69.1	69.1		21.2	21.2				
Actuated g/C Ratio		0.67	0.67	0.67	0.67		0.21	0.21				
Clearance Time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2414	1080	73	2414		295	331				
v/s Ratio Prot		c0.58			0.32			c0.01				
v/s Ratio Perm			0.01	0.15			0.00					
v/c Ratio		0.86	0.01	0.22	0.47		0.00	0.04				
Uniform Delay, d1		13.1	5.6	6.5	8.1		32.4	32.6				
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00				
Incremental Delay, d2		3.3	0.0	1.5	0.1		0.0	0.2				
Delay (s)		16.3	5.6	8.0	8.2		32.4	32.9				
Level of Service		B	A	A	A		C	C				
Approach Delay (s)		16.3			8.2			32.9			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	12.5
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1900	22	12	1022	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747		1796	1638	
Flt Permitted	0.25	1.00	1.00	0.07	1.00	1.00		0.79		0.74	1.00	
Satd. Flow (perm)	471	3592	1607	137	3592	1607		1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2065	24	13	1111	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	8	0	0	15	0
Lane Group Flow (vph)	7	2065	22	13	1111	8	0	16	0	12	3	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	94.3	94.3	94.3	94.3	94.3	94.3		5.8		5.8	5.8	
Effective Green, g (s)	94.3	94.3	94.3	94.3	94.3	94.3		5.8		5.8	5.8	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.82	0.82		0.05		0.05	0.05	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	388	2956	1322	113	2956	1322		72		71	83	
v/s Ratio Prot		c0.57			0.31						0.00	
v/s Ratio Perm	0.01		0.01	0.09		0.01		c0.01		0.01		
v/c Ratio	0.02	0.70	0.02	0.12	0.38	0.01		0.23		0.17	0.03	
Uniform Delay, d1	1.8	4.2	1.8	2.0	2.6	1.8		52.2		52.1	51.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.4	0.0	2.1	0.4	0.0		1.6		1.1	0.2	
Delay (s)	1.9	5.6	1.8	4.0	3.0	1.8		53.9		53.2	51.9	
Level of Service	A	A	A	A	A	A		D		D	D	
Approach Delay (s)		5.6			3.0			53.9			52.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	114.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



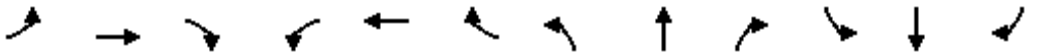
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1491	169	153	811	214	219	1204	352	123	437	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00	0.40	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	368	3592	1607	151	3592	1607	760	3592	1607	189	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1621	184	166	882	233	238	1309	383	134	475	89
RTOR Reduction (vph)	0	0	60	0	0	82	0	0	87	0	0	46
Lane Group Flow (vph)	272	1621	124	166	882	151	238	1309	296	134	475	43
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Effective Green, g (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Actuated g/C Ratio	0.45	0.38	0.38	0.45	0.38	0.38	0.37	0.31	0.31	0.37	0.31	0.31
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	1382	618	169	1382	618	344	1105	494	169	1105	494
v/s Ratio Prot	c0.07	c0.45		0.06	0.25		0.04	c0.36		c0.05	0.13	
v/s Ratio Perm	0.42		0.08	0.38		0.09	0.21		0.18	0.24		0.03
v/c Ratio	1.08	1.17	0.20	0.98	0.64	0.24	0.69	1.18	0.60	0.79	0.43	0.09
Uniform Delay, d1	32.8	40.0	26.7	33.6	32.6	27.2	32.7	45.0	38.2	33.3	35.9	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	79.4	85.8	0.7	63.6	2.3	0.9	5.9	92.5	2.1	22.0	0.3	0.1
Delay (s)	112.2	125.8	27.4	97.2	34.9	28.1	38.6	137.5	40.3	55.3	36.2	32.1
Level of Service	F	F	C	F	C	C	D	F	D	E	D	C
Approach Delay (s)		115.3			41.7			106.0			39.3	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	87.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1839	143	13	1100	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1999	155	14	1196	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.83	
vC, conflicting volume			2154		2625	999
vC1, stage 1 conf vol					1999	
vC2, stage 2 conf vol					626	
vCu, unblocked vol			2154		2550	999
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		68	91
cM capacity (veh/h)			246		88	242

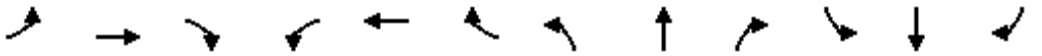
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	999	999	155	14	598	598	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	246	1700	1700	88	242
Volume to Capacity	0.59	0.59	0.09	0.06	0.35	0.35	0.32	0.09
Queue Length 95th (m)	0.0	0.0	0.0	1.4	0.0	0.0	9.3	2.1
Control Delay (s)	0.0	0.0	0.0	20.5	0.0	0.0	64.2	21.3
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.2			46.1	
Approach LOS							E	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		



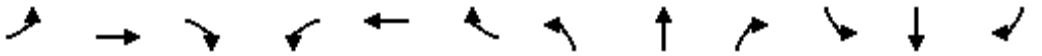
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1727	239	88	859	70	259	582	162	99	407	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.29	1.00	1.00	0.07	1.00	1.00	0.36	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	546	3592	1607	135	3592	1607	677	3592	1607	778	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1877	260	96	934	76	282	633	176	108	442	22
RTOR Reduction (vph)	0	0	52	0	0	36	0	0	86	0	0	16
Lane Group Flow (vph)	39	1877	208	96	934	40	282	633	90	108	442	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.43	0.43	0.43	0.52	0.52	0.52	0.35	0.35	0.35	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	237	1557	696	168	1886	844	302	1257	562	201	928	415
v/s Ratio Prot		c0.52		0.03	c0.26		c0.05	0.18			0.12	
v/s Ratio Perm	0.07		0.13	0.27		0.02	c0.27		0.06	0.14		0.00
v/c Ratio	0.16	1.21	0.30	0.57	0.50	0.05	0.93	0.50	0.16	0.54	0.48	0.01
Uniform Delay, d1	20.7	34.0	22.1	26.2	18.3	13.9	37.0	30.8	26.9	38.3	37.6	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	98.8	1.1	4.6	0.9	0.1	34.6	1.4	0.6	9.9	1.8	0.1
Delay (s)	22.2	132.8	23.2	30.8	19.2	14.0	71.5	32.2	27.5	48.3	39.4	33.2
Level of Service	C	F	C	C	B	B	E	C	C	D	D	C
Approach Delay (s)		117.8			19.9			41.6			40.8	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	70.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



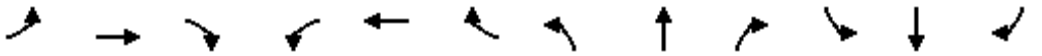
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1730	96	105	940	76	208	1018	414	62	379	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.26	1.00	1.00	0.07	1.00	1.00	0.35	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	490	3592	1607	129	3592	1607	670	3592	1607	261	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1880	104	114	1022	83	226	1107	450	67	412	118
RTOR Reduction (vph)	0	0	33	0	0	5	0	0	86	0	0	75
Lane Group Flow (vph)	224	1880	71	114	1022	78	226	1107	364	67	412	43
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	53.5	53.5	53.5	65.5	65.5	65.5	40.0	40.0	40.0	29.0	29.0	29.0
Effective Green, g (s)	53.5	53.5	53.5	65.5	65.5	65.5	40.0	40.0	40.0	29.0	29.0	29.0
Actuated g/C Ratio	0.45	0.45	0.45	0.55	0.55	0.55	0.33	0.33	0.33	0.24	0.24	0.24
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	219	1608	719	168	1969	881	281	1202	538	63	872	390
v/s Ratio Prot		c0.52		0.04	c0.28		0.04	c0.31			0.11	
v/s Ratio Perm	0.46		0.04	0.33		0.05	0.23		0.23	c0.26		0.03
v/c Ratio	1.02	1.17	0.10	0.68	0.52	0.09	0.80	0.92	0.68	1.06	0.47	0.11
Uniform Delay, d1	33.0	33.0	19.1	26.3	17.1	12.8	36.1	38.2	34.2	45.2	38.7	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	66.9	83.2	0.3	10.4	1.0	0.2	15.3	11.5	3.4	132.1	0.4	0.1
Delay (s)	99.9	116.2	19.4	36.6	18.0	13.0	51.4	49.7	37.6	177.3	39.1	35.3
Level of Service	F	F	B	D	B	B	D	D	D	F	D	D
Approach Delay (s)		110.0			19.4			46.9			53.9	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	28.0
Intersection Capacity Utilization	109.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



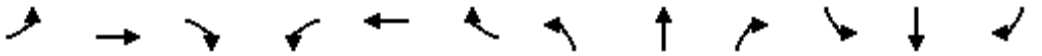
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1794	108	36	897	239	63	40	41	181	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1668	
Flt Permitted	0.27	1.00	1.00	0.05	1.00	1.00	0.67	1.00		0.70	1.00	
Satd. Flow (perm)	503	3592	1607	101	3592	1607	1272	1746		1323	1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1950	117	39	975	260	68	43	45	197	28	103
RTOR Reduction (vph)	0	0	14	0	0	64	0	12	0	0	83	0
Lane Group Flow (vph)	142	1950	103	39	975	196	68	76	0	197	48	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.2	75.2	75.2	75.2	75.2	75.2	21.4	21.4		21.4	21.4	
Effective Green, g (s)	75.2	75.2	75.2	75.2	75.2	75.2	21.4	21.4		21.4	21.4	
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.19	0.19		0.19	0.19	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	342	2442	1093	69	2442	1093	246	338		256	323	
v/s Ratio Prot		c0.54			0.27			0.04			0.03	
v/s Ratio Perm	0.28		0.06	0.39		0.12	0.05			c0.15		
v/c Ratio	0.42	0.80	0.09	0.57	0.40	0.18	0.28	0.22		0.77	0.15	
Uniform Delay, d1	7.9	12.4	6.1	9.2	7.8	6.5	38.0	37.6		42.3	37.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	2.8	0.2	29.5	0.5	0.4	0.6	0.3		13.0	0.2	
Delay (s)	11.6	15.2	6.2	38.7	8.3	6.8	38.6	37.9		55.3	37.2	
Level of Service	B	B	A	D	A	A	D	D		E	D	
Approach Delay (s)		14.5			8.9			38.2			48.1	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



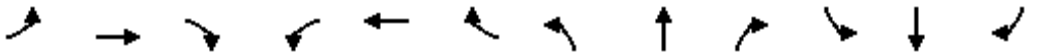
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	351	0	296	0	408	65	194	1150	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.49	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	925	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	382	0	322	0	443	71	211	1250	0
RTOR Reduction (vph)	0	0	0	0	218	0	0	0	31	0	0	0
Lane Group Flow (vph)	0	0	0	382	104	0	0	443	40	211	1250	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				42.0	42.0			73.5	73.5	73.5	73.5	
Effective Green, g (s)				42.0	42.0			73.5	73.5	73.5	73.5	
Actuated g/C Ratio				0.32	0.32			0.57	0.57	0.57	0.57	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				463	519			2031	909	523	2031	
v/s Ratio Prot					0.06			0.12			c0.35	
v/s Ratio Perm				c0.27					0.02	0.23		
v/c Ratio				0.83	0.20			0.22	0.04	0.40	0.62	
Uniform Delay, d1				40.6	31.8			14.0	12.6	15.9	18.8	
Progression Factor				1.00	1.00			0.93	0.69	1.00	1.00	
Incremental Delay, d2				11.4	0.2			0.2	0.1	2.3	1.4	
Delay (s)				52.0	32.0			13.3	8.8	18.2	20.2	
Level of Service				D	C			B	A	B	C	
Approach Delay (s)		0.0			42.9			12.6			19.9	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



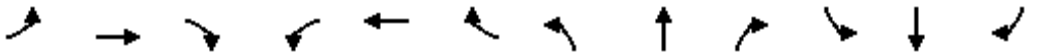
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	574	1	1	1647	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.42	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	785	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	624	1	1	1790	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	624	1	1	1790	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Effective Green, g (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Actuated g/C Ratio				0.02	0.02			0.81	0.81	0.81	0.81	
Clearance Time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2912	1303	636	2912	
v/s Ratio Prot					0.00			0.17			c0.50	
v/s Ratio Perm				c0.00					0.00	0.00		
v/c Ratio				0.08	0.00			0.21	0.00	0.00	0.61	
Uniform Delay, d1				31.3	31.2			1.4	1.2	1.2	2.3	
Progression Factor				1.00	1.00			0.58	0.70	0.89	0.89	
Incremental Delay, d2				0.9	0.0			0.2	0.0	0.0	0.8	
Delay (s)				32.2	31.2			1.0	0.8	1.0	2.9	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			1.0			2.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



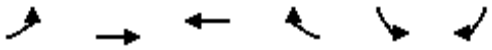
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	574	4	1	1650	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.10	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		196	3592	1607	785	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	624	4	1	1793	3
RTOR Reduction (vph)	0	16	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	5	0	3	0	0	1	624	3	1	1793	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		154	2818	1261	616	2818	1261
v/s Ratio Prot		0.00			0.00			0.17			c0.50	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.06		0.03	0.00		0.01	0.22	0.00	0.00	0.64	0.00
Uniform Delay, d1	29.8	29.7		29.6	29.6		1.5	1.8	1.5	1.5	3.0	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.31	1.63	1.53
Incremental Delay, d2	1.1	0.4		0.2	0.0		0.1	0.2	0.0	0.0	1.0	0.0
Delay (s)	30.9	30.0		29.8	29.6		1.6	2.0	1.5	2.0	5.9	2.3
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.4			29.7			2.0			5.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



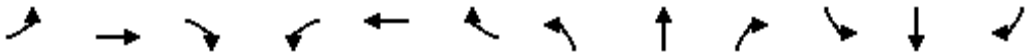
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	629	134	233	1261	44	169	484	144	103	1232	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.10	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	122	3592	1607	628	3592	1607	195	3592	1607	643	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	684	146	253	1371	48	184	526	157	112	1339	522
RTOR Reduction (vph)	0	0	52	0	0	10	0	0	79	0	0	97
Lane Group Flow (vph)	174	684	94	253	1371	38	184	526	78	112	1339	425
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Effective Green, g (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Actuated g/C Ratio	0.52	0.44	0.44	0.48	0.42	0.42	0.34	0.28	0.28	0.33	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	1593	713	368	1516	678	175	995	445	276	962	430
v/s Ratio Prot	c0.07	0.19		0.04	0.38		c0.07	0.15		0.02	c0.37	
v/s Ratio Perm	c0.40		0.06	0.29		0.02	0.29		0.05	0.11		0.26
v/c Ratio	0.89	0.43	0.13	0.69	0.90	0.06	1.05	0.53	0.18	0.41	1.39	0.99
Uniform Delay, d1	39.5	26.8	23.0	25.6	37.8	23.9	39.4	42.9	38.4	34.3	51.2	51.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.1	0.2	0.1	5.3	8.0	0.0	82.3	2.0	0.9	1.0	182.8	40.4
Delay (s)	75.6	27.0	23.1	30.9	45.8	24.0	121.7	44.9	39.3	35.3	234.0	91.4
Level of Service	E	C	C	C	D	C	F	D	D	D	F	F
Approach Delay (s)		34.8			42.9			60.2			185.0	
Approach LOS		C			D			E			F	

Intersection Summary			
HCM Average Control Delay	95.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



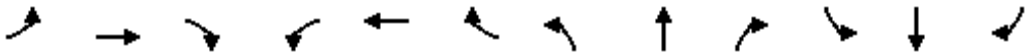
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	849	1987	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	82	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	923	2160	17	62	66
RTOR Reduction (vph)	0	0	0	1	0	61
Lane Group Flow (vph)	52	923	2160	16	62	5
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	107.0	107.0	98.0	98.0	9.0	9.0
Effective Green, g (s)	107.0	107.0	98.0	98.0	9.0	9.0
Actuated g/C Ratio	0.82	0.82	0.75	0.75	0.07	0.07
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	2956	2708	1211	124	111
v/s Ratio Prot	0.01	c0.26	c0.60		c0.03	
v/s Ratio Perm	0.31			0.01		0.00
v/c Ratio	0.39	0.31	0.80	0.01	0.50	0.04
Uniform Delay, d1	17.1	2.7	9.9	4.0	58.3	56.5
Progression Factor	3.87	0.04	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.3	2.5	0.0	3.1	0.2
Delay (s)	68.2	0.4	12.4	4.0	61.5	56.6
Level of Service	E	A	B	A	E	E
Approach Delay (s)		4.0	12.4		59.0	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



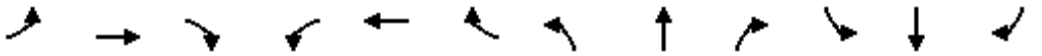
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	853	4	11	2021	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.27	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	501	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	927	4	12	2197	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	927	2	12	2197	0	9	9	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Effective Green, g (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Actuated g/C Ratio		0.56	0.56	0.56	0.56		0.27	0.27				
Clearance Time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2017	902	281	2017		386	433				
v/s Ratio Prot		0.26			c0.61			0.01				
v/s Ratio Perm			0.00	0.02			c0.01					
v/c Ratio		0.46	0.00	0.04	1.09		0.02	0.02				
Uniform Delay, d1		8.4	6.3	6.4	14.2		17.5	17.4				
Progression Factor		0.49	0.61	0.80	1.29		1.00	1.00				
Incremental Delay, d2		0.2	0.0	0.0	46.2		0.1	0.1				
Delay (s)		4.3	3.8	5.1	64.6		17.6	17.5				
Level of Service		A	A	A	E		B	B				
Approach Delay (s)		4.3			64.3			17.5			0.0	
Approach LOS		A			E			B			A	

Intersection Summary			
HCM Average Control Delay	46.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	847	17	7	2019	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.04	1.00	1.00	0.31	1.00	1.00		0.75		0.80	1.00	
Satd. Flow (perm)	81	3592	1607	586	3592	1607		1394		1508	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	921	18	8	2195	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	921	15	8	2195	3	0	53	0	2	1	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Effective Green, g (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Actuated g/C Ratio	0.82	0.82	0.82	0.77	0.77	0.77		0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	96	2932	1312	450	2758	1234		101		109	116	
v/s Ratio Prot	0.00	c0.26			c0.61						0.00	
v/s Ratio Perm	0.10		0.01	0.01		0.00		c0.04		0.00		
v/c Ratio	0.12	0.31	0.01	0.02	0.80	0.00		0.52		0.02	0.00	
Uniform Delay, d1	13.1	3.0	2.2	3.6	9.0	3.5		58.1		56.0	56.0	
Progression Factor	1.12	0.25	0.02	0.13	0.74	0.15		1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.2	0.0	0.0	0.2	0.0		4.5		0.1	0.0	
Delay (s)	15.0	0.9	0.1	0.5	6.9	0.5		62.6		56.1	56.0	
Level of Service	B	A	A	A	A	A		E		E	E	
Approach Delay (s)		1.1			6.8			62.6			56.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



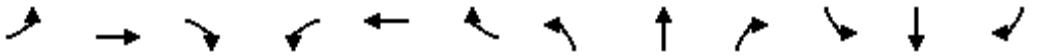
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	650	235	391	1537	117	132	308	112	197	1279	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.12	1.00	1.00	0.10	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	265	3592	1607	233	3592	1607	197	3592	1607	893	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	707	255	425	1671	127	143	335	122	214	1390	286
RTOR Reduction (vph)	0	0	98	0	0	23	0	0	86	0	0	51
Lane Group Flow (vph)	74	707	157	425	1671	104	143	335	36	214	1390	235
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22	0.22	0.46	0.39	0.39	0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	787	352	431	1412	632	134	1058	473	459	1243	556
v/s Ratio Prot	0.02	0.20		c0.20	c0.47		c0.05	0.09		0.04	c0.39	
v/s Ratio Perm	0.14		0.10	0.25		0.06	0.31		0.02	0.15		0.15
v/c Ratio	0.62	0.90	0.45	0.99	1.18	0.16	1.07	0.32	0.08	0.47	1.12	0.42
Uniform Delay, d1	40.2	49.3	43.9	39.1	39.5	25.6	40.9	35.7	33.1	25.1	42.5	32.6
Progression Factor	1.00	1.00	1.00	1.09	1.17	1.17	1.00	1.00	1.00	0.76	0.74	0.61
Incremental Delay, d2	9.7	15.2	4.1	31.3	87.6	0.4	96.8	0.2	0.1	0.7	63.4	0.5
Delay (s)	49.9	64.5	48.0	73.9	133.8	30.4	137.7	35.8	33.2	19.7	94.7	20.4
Level of Service	D	E	D	E	F	C	F	D	C	B	F	C
Approach Delay (s)		59.4			116.4			59.6			75.0	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM Average Control Delay	86.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	912	54	23	2227	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	991	59	25	2421	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.54	
vC, conflicting volume			1050		2252	496
vC1, stage 1 conf vol					991	
vC2, stage 2 conf vol					1260	
vCu, unblocked vol			1050		1622	496
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		44	94
cM capacity (veh/h)			659		268	520

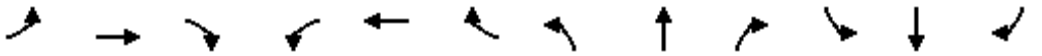
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	496	496	59	25	1210	1210	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	659	1700	1700	268	520
Volume to Capacity	0.29	0.29	0.03	0.04	0.71	0.71	0.56	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	23.9	1.4
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	34.2	12.3
Lane LOS				B			D	B
Approach Delay (s)	0.0			0.1			30.6	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		



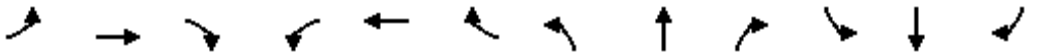
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	731	224	178	1788	117	269	314	99	79	908	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.55	1.00	1.00
Satd. Flow (perm)	170	3592	1607	399	3592	1607	216	3592	1607	1034	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	795	243	193	1943	127	292	341	108	86	987	221
RTOR Reduction (vph)	0	0	114	0	0	65	0	0	63	0	0	17
Lane Group Flow (vph)	37	795	129	193	1943	62	292	341	45	86	987	204
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Effective Green, g (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Actuated g/C Ratio	0.37	0.37	0.37	0.46	0.46	0.46	0.41	0.41	0.41	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	1332	596	266	1661	743	280	1482	663	267	928	415
v/s Ratio Prot		0.22		0.04	c0.54		c0.13	0.09			0.27	
v/s Ratio Perm	0.22		0.08	0.29		0.04	c0.30		0.03	0.08		0.13
v/c Ratio	0.59	0.60	0.22	0.73	1.17	0.08	1.04	0.23	0.07	0.32	1.06	0.49
Uniform Delay, d1	30.4	30.5	25.8	23.1	32.2	18.0	34.8	22.9	21.3	36.0	44.5	37.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.3	2.0	0.8	9.4	83.3	0.2	65.4	0.4	0.2	3.2	48.0	4.1
Delay (s)	64.7	32.5	26.7	32.6	115.5	18.3	100.2	23.2	21.5	39.2	92.5	41.9
Level of Service	E	C	C	C	F	B	F	C	C	D	F	D
Approach Delay (s)		32.3			103.0			53.3			80.3	
Approach LOS		C			F			D			F	

Intersection Summary			
HCM Average Control Delay	76.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



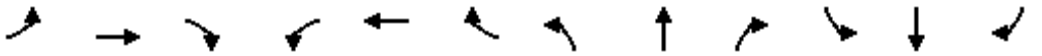
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	733	156	460	1946	46	41	254	85	59	1250	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.14	1.00	1.00	0.09	1.00	1.00	0.57	1.00	1.00
Satd. Flow (perm)	204	3592	1607	256	3592	1607	176	3592	1607	1084	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	797	170	500	2115	50	45	276	92	64	1359	288
RTOR Reduction (vph)	0	0	39	0	0	16	0	0	62	0	0	4
Lane Group Flow (vph)	67	797	131	500	2115	34	45	276	30	64	1359	284
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	37.1	37.1	37.1	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	37.1	37.1	37.1	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.29	0.29	0.29	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1025	459	522	2017	902	58	1188	532	359	1188	532
v/s Ratio Prot		0.22		0.24	c0.59			0.08			c0.38	
v/s Ratio Perm	c0.33		0.08	0.30		0.02	0.26		0.02	0.06		0.18
v/c Ratio	1.16	0.78	0.28	0.96	1.05	0.04	0.78	0.23	0.06	0.18	1.14	0.53
Uniform Delay, d1	46.5	42.7	36.1	35.3	28.5	12.8	39.2	31.5	29.7	30.9	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.91	1.59	1.74	0.93	0.65	0.46	1.00	1.00	1.00
Incremental Delay, d2	166.6	5.8	1.6	5.1	23.5	0.0	46.7	0.1	0.0	0.2	75.2	1.0
Delay (s)	213.1	48.5	37.7	37.1	68.8	22.2	82.9	20.7	13.7	31.2	118.7	36.4
Level of Service	F	D	D	D	E	C	F	C	B	C	F	D
Approach Delay (s)		57.4			62.0			25.9			101.5	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM Average Control Delay	70.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	142.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



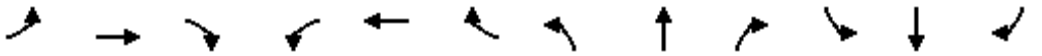
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	742	53	25	2280	79	127	11	45	176	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.31	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	588	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	807	58	27	2478	86	138	12	49	191	38	122
RTOR Reduction (vph)	0	0	18	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	51	807	40	27	2478	78	138	25	0	191	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Effective Green, g (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2219	993	363	2219	993	369	457		228	319	271
v/s Ratio Prot		0.22			c0.69		c0.03	0.02			0.02	
v/s Ratio Perm	0.54		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.88	0.36	0.04	0.07	1.12	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	20.8	12.3	9.7	10.0	24.9	10.0	37.1	34.7		52.3	45.9	47.0
Progression Factor	1.46	0.31	0.05	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	71.2	0.3	0.1	0.4	59.4	0.2	0.6	0.1		22.6	0.2	0.5
Delay (s)	101.5	4.2	0.6	10.4	84.2	10.1	37.8	34.8		75.0	46.0	47.5
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.4			81.0			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	61.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



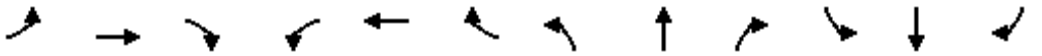
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	168	0	136	0	1171	319	100	725	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.19	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	350	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	183	0	148	0	1273	347	109	788	0
RTOR Reduction (vph)	0	0	0	0	67	0	0	0	57	0	0	0
Lane Group Flow (vph)	0	0	0	183	81	0	0	1273	290	109	788	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				22.0	22.0			93.5	93.5	93.5	93.5	
Effective Green, g (s)				22.0	22.0			93.5	93.5	93.5	93.5	
Actuated g/C Ratio				0.17	0.17			0.72	0.72	0.72	0.72	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				242	272			2583	1156	252	2583	
v/s Ratio Prot					0.05			c0.35			0.22	
v/s Ratio Perm				c0.13					0.18	0.31		
v/c Ratio				0.76	0.30			0.49	0.25	0.43	0.31	
Uniform Delay, d1				51.4	47.2			7.9	6.3	7.4	6.6	
Progression Factor				1.00	1.00			0.17	0.08	0.54	0.41	
Incremental Delay, d2				12.6	0.6			0.6	0.5	5.0	0.3	
Delay (s)				64.1	47.8			2.0	1.0	9.0	3.0	
Level of Service				E	D			A	A	A	A	
Approach Delay (s)		0.0			56.8			1.8			3.7	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



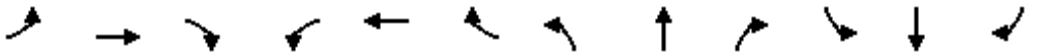
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	1490	6	6	937	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.13	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	251	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	1620	7	7	1018	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	1620	6	7	1018	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Effective Green, g (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Actuated g/C Ratio				0.02	0.02			0.76	0.76	0.76	0.76	
Clearance Time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2746	1229	192	2746	
v/s Ratio Prot					0.00			c0.45			0.28	
v/s Ratio Perm				c0.00					0.00	0.03		
v/c Ratio				0.08	0.00			0.59	0.00	0.04	0.37	
Uniform Delay, d1				31.3	31.2			3.3	1.8	1.9	2.5	
Progression Factor				1.00	1.00			0.07	0.02	0.76	0.68	
Incremental Delay, d2				0.9	0.0			0.8	0.0	0.3	0.4	
Delay (s)				32.2	31.2			1.1	0.0	1.8	2.1	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			1.1			2.1	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	1.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



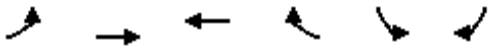
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1495	35	12	940	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.28	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		525	3592	1607	248	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1625	38	13	1022	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1625	32	13	1022	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		412	2818	1261	195	2818	1261
v/s Ratio Prot		0.00			0.00			c0.45			0.28	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.05		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.58	0.03	0.07	0.36	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	2.8	1.5	1.6	2.1	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.22	1.90	1.48	1.12	1.37	1.33
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.1	0.3	0.0	0.6	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		1.9	5.5	2.3	2.4	3.2	2.0
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			5.4			3.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



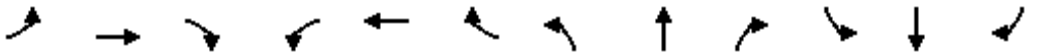
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1470	198	169	809	54	145	1173	363	119	753	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.13	1.00	1.00	0.17	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	273	3592	1607	242	3592	1607	325	3592	1607	174	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1598	215	184	879	59	158	1275	395	129	818	160
RTOR Reduction (vph)	0	0	35	0	0	20	0	0	73	0	0	53
Lane Group Flow (vph)	338	1598	180	184	879	39	158	1275	322	129	818	107
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.5	43.5	43.5
Effective Green, g (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.5	43.5	43.5
Actuated g/C Ratio	0.33	0.33	0.33	0.30	0.27	0.27	0.46	0.37	0.37	0.39	0.33	0.33
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	1202	538	169	986	441	285	1340	600	155	1202	538
v/s Ratio Prot	0.15	c0.44		c0.07	0.24		0.05	c0.35		c0.04	0.23	
v/s Ratio Perm	0.26		0.11	0.26		0.02	0.20		0.20	0.28		0.07
v/c Ratio	1.22	1.33	0.33	1.09	0.89	0.09	0.55	0.95	0.54	0.83	0.68	0.20
Uniform Delay, d1	36.8	43.2	32.4	56.1	45.3	35.0	23.8	39.6	31.9	31.9	37.3	30.8
Progression Factor	1.01	0.71	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.31	0.69	0.54
Incremental Delay, d2	121.5	152.3	0.3	94.9	10.2	0.1	2.3	15.4	3.4	29.3	3.0	0.8
Delay (s)	158.6	182.8	20.3	151.1	55.5	35.1	26.1	55.0	35.3	71.0	28.7	17.3
Level of Service	F	F	C	F	E	D	C	E	D	E	C	B
Approach Delay (s)		162.8			70.1			48.3			32.0	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM Average Control Delay	89.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



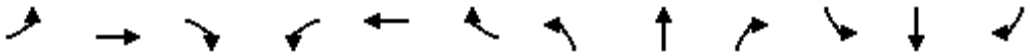
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1933	1016	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	463	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2101	1104	34	84	51
RTOR Reduction (vph)	0	0	0	5	0	46
Lane Group Flow (vph)	53	2101	1104	29	84	5
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	103.9	103.9	103.9	103.9	12.1	12.1
Effective Green, g (s)	103.9	103.9	103.9	103.9	12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.09	0.09
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	370	2871	2871	1284	167	150
v/s Ratio Prot		c0.58	0.31		c0.05	
v/s Ratio Perm	0.11			0.02		0.00
v/c Ratio	0.14	0.73	0.38	0.02	0.50	0.03
Uniform Delay, d1	3.0	6.3	3.8	2.7	56.1	53.6
Progression Factor	0.93	2.25	0.52	0.48	1.00	1.00
Incremental Delay, d2	0.6	1.1	0.3	0.0	2.4	0.1
Delay (s)	3.3	15.4	2.2	1.3	58.5	53.7
Level of Service	A	B	A	A	E	D
Approach Delay (s)		15.1	2.2		56.7	
Approach LOS		B	A		E	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



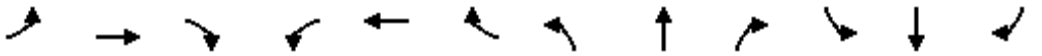
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1907	11	15	1041	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.06	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	109	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2073	12	16	1132	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	2073	10	16	1132	0	1	4	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		100.2	100.2	100.2	100.2		17.3	17.3				
Effective Green, g (s)		100.2	100.2	100.2	100.2		17.3	17.3				
Actuated g/C Ratio		0.77	0.77	0.77	0.77		0.13	0.13				
Clearance Time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2769	1239	84	2769		191	214				
v/s Ratio Prot		c0.58			0.32			c0.00				
v/s Ratio Perm			0.01	0.15			0.00					
v/c Ratio		0.75	0.01	0.19	0.41		0.01	0.02				
Uniform Delay, d1		8.1	3.4	4.0	5.0		48.9	49.0				
Progression Factor		1.15	0.56	0.15	0.14		1.00	1.00				
Incremental Delay, d2		0.9	0.0	1.0	0.1		0.0	0.1				
Delay (s)		10.1	1.9	1.6	0.8		48.9	49.1				
Level of Service		B	A	A	A		D	D				
Approach Delay (s)		10.1			0.8			49.1			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1900	22	12	1022	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747		1796	1638	
Flt Permitted	0.23	1.00	1.00	0.08	1.00	1.00		0.79		0.74	1.00	
Satd. Flow (perm)	433	3592	1607	152	3592	1607		1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2065	24	13	1111	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	8	0	0	15	0
Lane Group Flow (vph)	7	2065	22	13	1111	8	0	16	0	12	3	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0		6.0	6.0	
Effective Green, g (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0		6.0	6.0	
Actuated g/C Ratio	0.84	0.84	0.84	0.79	0.79	0.79		0.05		0.05	0.05	
Clearance Time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	377	3026	1354	120	2840	1271		66		65	76	
v/s Ratio Prot	0.00	c0.57			0.31						0.00	
v/s Ratio Perm	0.02		0.01	0.09		0.01		c0.01		0.01		
v/c Ratio	0.02	0.68	0.02	0.11	0.39	0.01		0.25		0.18	0.04	
Uniform Delay, d1	2.1	3.8	1.6	3.1	4.1	2.9		59.8		59.6	59.2	
Progression Factor	1.00	1.00	1.00	0.22	0.18	0.13		1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.3	0.0	1.7	0.4	0.0		2.0		1.4	0.2	
Delay (s)	2.2	5.1	1.7	2.4	1.1	0.4		61.8		61.0	59.4	
Level of Service	A	A	A	A	A	A		E		E	E	
Approach Delay (s)		5.0			1.1			61.8			60.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



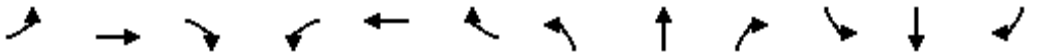
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1491	169	153	811	214	219	1204	352	123	437	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00	0.40	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	368	3592	1607	151	3592	1607	760	3592	1607	189	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1621	184	166	882	233	238	1309	383	134	475	89
RTOR Reduction (vph)	0	0	60	0	0	82	0	0	87	0	0	46
Lane Group Flow (vph)	272	1621	124	166	882	151	238	1309	296	134	475	43
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Effective Green, g (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Actuated g/C Ratio	0.45	0.38	0.38	0.45	0.38	0.38	0.37	0.31	0.31	0.37	0.31	0.31
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	1382	618	169	1382	618	344	1105	494	169	1105	494
v/s Ratio Prot	c0.07	c0.45		0.06	0.25		0.04	c0.36		c0.05	0.13	
v/s Ratio Perm	0.42		0.08	0.38		0.09	0.21		0.18	0.24		0.03
v/c Ratio	1.08	1.17	0.20	0.98	0.64	0.24	0.69	1.18	0.60	0.79	0.43	0.09
Uniform Delay, d1	32.8	40.0	26.7	33.6	32.6	27.2	32.7	45.0	38.2	33.3	35.9	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	79.4	85.8	0.7	63.6	2.3	0.9	5.9	92.5	2.1	22.0	0.3	0.1
Delay (s)	112.2	125.8	27.4	97.2	34.9	28.1	38.6	137.5	40.3	55.3	36.2	32.1
Level of Service	F	F	C	F	C	C	D	F	D	E	D	C
Approach Delay (s)		115.3			41.7			106.0			39.3	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	87.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1839	143	13	1100	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1999	155	14	1196	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.85	
vC, conflicting volume			2154		2625	999
vC1, stage 1 conf vol					1999	
vC2, stage 2 conf vol					626	
vCu, unblocked vol			2154		2557	999
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		68	91
cM capacity (veh/h)			246		88	242

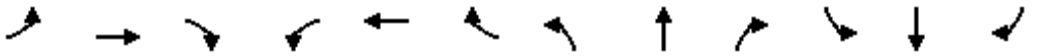
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	999	999	155	14	598	598	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	246	1700	1700	88	242
Volume to Capacity	0.59	0.59	0.09	0.06	0.35	0.35	0.32	0.09
Queue Length 95th (m)	0.0	0.0	0.0	1.4	0.0	0.0	9.3	2.1
Control Delay (s)	0.0	0.0	0.0	20.5	0.0	0.0	64.2	21.3
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.2			46.1	
Approach LOS							E	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		



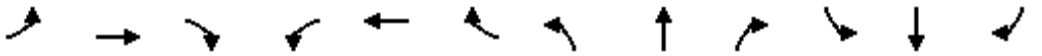
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1727	239	88	859	70	259	582	162	99	407	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.29	1.00	1.00	0.06	1.00	1.00	0.34	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	551	3592	1607	115	3592	1607	638	3592	1607	741	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1877	260	96	934	76	282	633	176	108	442	22
RTOR Reduction (vph)	0	0	48	0	0	33	0	0	78	0	0	17
Lane Group Flow (vph)	39	1877	212	96	934	43	282	633	98	108	442	5
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	263	1713	766	155	2017	902	268	1160	519	177	857	383
v/s Ratio Prot		c0.52		c0.03	0.26		c0.06	0.18			0.12	
v/s Ratio Perm	0.07		0.13	0.32		0.03	c0.28		0.06	0.15		0.00
v/c Ratio	0.15	1.10	0.28	0.62	0.46	0.05	1.05	0.55	0.19	0.61	0.52	0.01
Uniform Delay, d1	19.1	34.0	20.5	28.8	16.9	12.8	43.5	36.2	31.7	44.1	43.0	37.8
Progression Factor	0.82	0.93	0.80	1.00	1.00	1.00	0.73	0.79	0.83	1.00	1.00	1.00
Incremental Delay, d2	0.9	50.5	0.6	7.2	0.8	0.1	66.3	1.7	0.7	14.7	2.2	0.1
Delay (s)	16.6	82.2	17.1	36.0	17.7	12.9	98.0	30.3	27.2	58.8	45.2	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		73.2			18.9			47.3			47.5	
Approach LOS		E			B			D			D	

Intersection Summary			
HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1730	96	105	940	76	208	1018	414	62	379	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.07	1.00	1.00	0.36	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	256	3592	1607	142	3592	1607	677	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1880	104	114	1022	83	226	1107	450	67	412	118
RTOR Reduction (vph)	0	0	31	0	0	49	0	0	87	0	0	90
Lane Group Flow (vph)	224	1880	73	114	1022	34	226	1107	363	67	412	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	61.2	53.4	53.4	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	61.2	53.4	53.4	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1627	728	166	1475	660	322	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.52		0.04	0.28		c0.05	c0.31		0.02	0.11	
v/s Ratio Perm	0.33		0.05	0.28		0.02	0.19		0.23	0.14		0.02
v/c Ratio	0.75	1.16	0.10	0.69	0.69	0.05	0.70	1.09	0.80	0.56	0.48	0.07
Uniform Delay, d1	21.3	35.5	20.4	29.4	31.5	23.1	33.9	46.5	43.1	38.5	42.3	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.61	0.22	0.91	0.93	0.89	1.00	1.00	1.00
Incremental Delay, d2	10.4	77.4	0.3	10.7	2.6	0.1	5.8	52.4	8.0	6.0	0.4	0.1
Delay (s)	31.7	113.0	20.7	53.7	21.8	5.1	36.7	95.7	46.5	44.5	42.7	38.2
Level of Service	C	F	C	D	C	A	D	F	D	D	D	D
Approach Delay (s)		100.4			23.6			75.8			42.0	
Approach LOS		F			C			E			D	

Intersection Summary			
HCM Average Control Delay	70.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



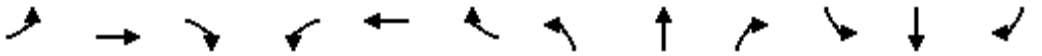
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1794	108	36	897	239	63	40	41	181	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.27	1.00	1.00	0.06	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	505	3592	1607	108	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1950	117	39	975	260	68	43	45	197	28	103
RTOR Reduction (vph)	0	0	13	0	0	72	0	14	0	0	0	84
Lane Group Flow (vph)	142	1950	104	39	975	188	68	74	0	197	28	19
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Effective Green, g (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	356	2531	1132	76	2531	1132	262	328		248	355	302
v/s Ratio Prot		c0.54			0.27			0.04			0.01	
v/s Ratio Perm	0.28		0.06	0.36		0.12	0.05			c0.15		0.01
v/c Ratio	0.40	0.77	0.09	0.51	0.39	0.17	0.26	0.23		0.79	0.08	0.06
Uniform Delay, d1	7.9	12.4	6.1	8.9	7.8	6.4	45.1	44.8		50.4	43.5	43.4
Progression Factor	1.47	1.39	1.88	0.93	0.65	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.0	19.5	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	11.9	17.4	11.4	27.8	5.4	0.6	45.6	45.1		66.3	43.6	43.5
Level of Service	B	B	B	C	A	A	D	D		E	D	D
Approach Delay (s)		16.8			5.1			45.3			57.2	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix H – Synchro Output
2024 Background Condition

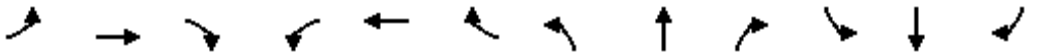
This appendix contains the following outputs in order:

- Scenario C, Background AM;
- Scenario C, Background PM;
- Scenario D, Background AM;
- Scenario D, Background PM.



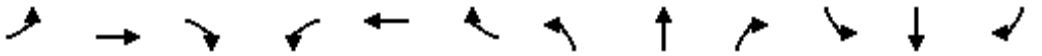
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	362	0	305	0	428	65	194	1207	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.47	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	898	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	393	0	332	0	465	71	211	1312	0
RTOR Reduction (vph)	0	0	0	0	205	0	0	0	31	0	0	0
Lane Group Flow (vph)	0	0	0	393	127	0	0	465	40	211	1312	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				42.8	42.8			72.7	72.7	72.7	72.7	
Effective Green, g (s)				42.8	42.8			72.7	72.7	72.7	72.7	
Actuated g/C Ratio				0.33	0.33			0.56	0.56	0.56	0.56	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				471	529			2009	899	502	2009	
v/s Ratio Prot					0.08			0.13			c0.37	
v/s Ratio Perm				c0.27					0.02	0.24		
v/c Ratio				0.83	0.24			0.23	0.04	0.42	0.65	
Uniform Delay, d1				40.3	31.8			14.5	12.9	16.5	19.9	
Progression Factor				1.00	1.00			0.93	1.29	0.31	0.35	
Incremental Delay, d2				12.1	0.2			0.3	0.1	1.0	0.7	
Delay (s)				52.4	32.0			13.7	16.8	6.2	7.6	
Level of Service				D	C			B	B	A	A	
Approach Delay (s)		0.0			43.1			14.1			7.4	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



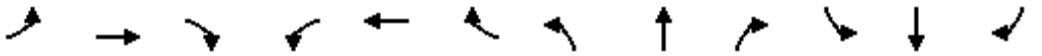
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	606	1	1	1738	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.40	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	759	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	659	1	1	1889	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	659	1	1	1889	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Effective Green, g (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Actuated g/C Ratio				0.02	0.02			0.81	0.81	0.81	0.81	
Clearance Time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2912	1303	615	2912	
v/s Ratio Prot					0.00			0.18			c0.53	
v/s Ratio Perm				c0.00					0.00	0.00		
v/c Ratio				0.08	0.00			0.23	0.00	0.00	0.65	
Uniform Delay, d1				31.3	31.2			1.4	1.2	1.2	2.5	
Progression Factor				1.00	1.00			0.31	0.31	1.05	1.07	
Incremental Delay, d2				0.9	0.0			0.2	0.0	0.0	0.9	
Delay (s)				32.2	31.2			0.6	0.4	1.2	3.5	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			0.6			3.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



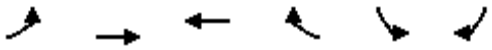
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	606	4	1	1741	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.09	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		168	3592	1607	759	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	659	4	1	1892	3
RTOR Reduction (vph)	0	12	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	9	0	3	0	0	1	659	3	1	1892	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		132	2818	1261	596	2818	1261
v/s Ratio Prot		0.01			0.00			0.18			c0.53	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.12		0.03	0.00		0.01	0.23	0.00	0.00	0.67	0.00
Uniform Delay, d1	29.8	29.7		29.6	29.6		1.5	1.8	1.5	1.5	3.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.42	0.79	0.35	1.38	1.68	1.53
Incremental Delay, d2	1.1	0.7		0.2	0.0		0.1	0.2	0.0	0.0	1.1	0.0
Delay (s)	30.9	30.4		29.8	29.6		0.7	1.6	0.5	2.1	6.4	2.3
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.7			29.7			1.6			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



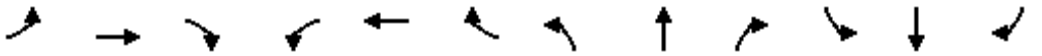
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	646	134	233	1298	44	169	510	144	103	1294	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.14	1.00	1.00	0.07	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	248	3592	1607	259	3592	1607	136	3592	1607	792	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	702	146	253	1411	48	184	554	157	112	1407	522
RTOR Reduction (vph)	0	0	54	0	0	10	0	0	81	0	0	107
Lane Group Flow (vph)	174	702	92	253	1411	38	184	554	76	112	1407	415
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.4	55.5	55.5	58.6	51.6	51.6
Effective Green, g (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.4	55.5	55.5	58.6	51.6	51.6
Actuated g/C Ratio	0.30	0.23	0.23	0.37	0.28	0.28	0.51	0.43	0.43	0.45	0.40	0.40
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	843	377	262	1009	451	209	1534	686	411	1426	638
v/s Ratio Prot	0.06	0.20		c0.10	c0.39		c0.07	0.15		0.01	c0.39	
v/s Ratio Perm	0.24		0.06	0.26		0.02	0.38		0.05	0.11		0.26
v/c Ratio	1.03	0.83	0.24	0.97	1.40	0.08	0.88	0.36	0.11	0.27	0.99	0.65
Uniform Delay, d1	41.7	47.3	40.4	32.6	46.8	34.4	36.4	25.2	22.4	21.0	38.9	31.9
Progression Factor	1.74	1.40	1.87	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.12	1.21
Incremental Delay, d2	76.1	6.9	0.3	45.7	185.3	0.1	32.1	0.7	0.3	0.3	18.9	4.3
Delay (s)	148.7	73.0	75.7	78.3	232.1	34.5	68.5	25.9	22.7	22.4	62.4	42.9
Level of Service	F	E	E	E	F	C	E	C	C	C	E	D
Approach Delay (s)		86.3			203.8			34.1			55.2	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	102.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



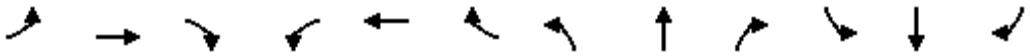
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	873	2045	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	74	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	949	2223	17	62	66
RTOR Reduction (vph)	0	0	0	1	0	61
Lane Group Flow (vph)	52	949	2223	16	62	5
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	107.0	107.0	98.0	98.0	9.0	9.0
Effective Green, g (s)	107.0	107.0	98.0	98.0	9.0	9.0
Actuated g/C Ratio	0.82	0.82	0.75	0.75	0.07	0.07
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	2956	2708	1211	124	111
v/s Ratio Prot	0.02	c0.26	c0.62		c0.03	
v/s Ratio Perm	0.32			0.01		0.00
v/c Ratio	0.41	0.32	0.82	0.01	0.50	0.04
Uniform Delay, d1	19.9	2.8	10.3	4.0	58.3	56.5
Progression Factor	3.52	0.04	1.93	0.89	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.3	0.0	3.1	0.2
Delay (s)	72.1	0.4	20.2	3.6	61.5	56.6
Level of Service	E	A	C	A	E	E
Approach Delay (s)		4.1	20.1		59.0	
Approach LOS		A	C		E	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



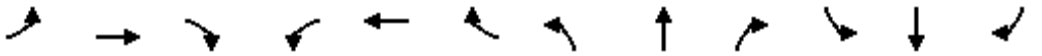
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	877	4	11	2081	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.25	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	482	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	953	4	12	2262	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	953	2	12	2262	0	9	9	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Effective Green, g (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Actuated g/C Ratio		0.56	0.56	0.56	0.56		0.27	0.27				
Clearance Time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2017	902	271	2017		386	433				
v/s Ratio Prot		0.27			c0.63			0.01				
v/s Ratio Perm			0.00	0.02			c0.01					
v/c Ratio		0.47	0.00	0.04	1.12		0.02	0.02				
Uniform Delay, d1		8.5	6.3	6.4	14.2		17.5	17.4				
Progression Factor		0.50	0.67	0.85	1.64		1.00	1.00				
Incremental Delay, d2		0.2	0.0	0.0	59.3		0.1	0.1				
Delay (s)		4.5	4.2	5.5	82.7		17.6	17.5				
Level of Service		A	A	A	F		B	B				
Approach Delay (s)		4.5			82.2			17.5			0.0	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM Average Control Delay	58.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	871	17	7	2078	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.04	1.00	1.00	0.30	1.00	1.00		0.75		0.80	1.00	
Satd. Flow (perm)	73	3592	1607	571	3592	1607		1394		1508	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	947	18	8	2259	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	947	15	8	2259	3	0	53	0	2	1	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Effective Green, g (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Actuated g/C Ratio	0.82	0.82	0.82	0.77	0.77	0.77		0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	90	2932	1312	438	2758	1234		101		109	116	
v/s Ratio Prot	0.00	c0.26			c0.63						0.00	
v/s Ratio Perm	0.11		0.01	0.01		0.00		c0.04		0.00		
v/c Ratio	0.13	0.32	0.01	0.02	0.82	0.00		0.52		0.02	0.00	
Uniform Delay, d1	15.2	3.0	2.2	3.6	9.4	3.5		58.1		56.0	56.0	
Progression Factor	1.47	0.28	0.01	0.13	0.79	0.15		1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.2	0.0	0.0	0.3	0.0		4.5		0.1	0.0	
Delay (s)	22.7	1.0	0.0	0.5	7.7	0.5		62.6		56.1	56.0	
Level of Service	C	A	A	A	A	A		E		E	E	
Approach Delay (s)		1.3			7.7			62.6			56.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



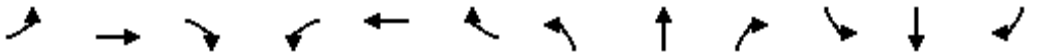
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	669	235	391	1582	117	132	324	112	197	1349	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.12	1.00	1.00	0.10	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	265	3592	1607	233	3592	1607	197	3592	1607	865	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	727	255	425	1720	127	143	352	122	214	1466	286
RTOR Reduction (vph)	0	0	97	0	0	22	0	0	86	0	0	48
Lane Group Flow (vph)	74	727	158	425	1720	105	143	352	36	214	1466	238
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22	0.22	0.46	0.39	0.39	0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	787	352	431	1412	632	134	1058	473	450	1243	556
v/s Ratio Prot	0.02	0.20		c0.20	c0.48		c0.05	0.10		0.04	c0.41	
v/s Ratio Perm	0.14		0.10	0.25		0.07	0.31		0.02	0.15		0.15
v/c Ratio	0.62	0.92	0.45	0.99	1.22	0.17	1.07	0.33	0.08	0.48	1.18	0.43
Uniform Delay, d1	40.2	49.7	44.0	39.2	39.5	25.6	40.9	35.9	33.1	25.1	42.5	32.6
Progression Factor	1.00	1.00	1.00	1.08	1.13	1.14	1.00	1.00	1.00	0.77	0.73	0.62
Incremental Delay, d2	9.7	18.1	4.1	30.5	102.4	0.4	96.8	0.2	0.1	0.7	88.3	0.5
Delay (s)	49.9	67.8	48.1	72.7	147.0	29.5	137.7	36.0	33.2	20.0	119.3	20.9
Level of Service	D	E	D	E	F	C	F	D	C	B	F	C
Approach Delay (s)		61.8			126.5			59.0			94.2	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	97.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	933	54	23	2292	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1014	59	25	2491	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1073		2310	507
vC1, stage 1 conf vol					1014	
vC2, stage 2 conf vol					1296	
vCu, unblocked vol			1073		1623	507
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		42	94
cM capacity (veh/h)			646		257	511

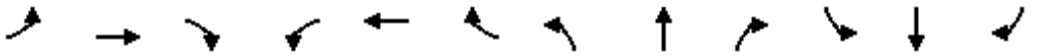
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	507	507	59	25	1246	1246	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	646	1700	1700	257	511
Volume to Capacity	0.30	0.30	0.03	0.04	0.73	0.73	0.58	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	25.6	1.4
Control Delay (s)	0.0	0.0	0.0	10.8	0.0	0.0	37.0	12.5
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			33.0	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		



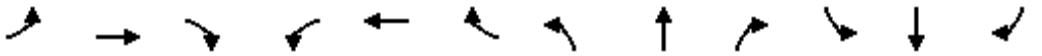
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	747	224	178	1840	117	269	329	99	79	952	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.22	1.00	1.00	0.11	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	144	3592	1607	414	3592	1607	207	3592	1607	1017	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	812	243	193	2000	127	292	358	108	86	1035	221
RTOR Reduction (vph)	0	0	103	0	0	58	0	0	67	0	0	11
Lane Group Flow (vph)	37	812	140	193	2000	69	292	358	41	86	1035	211
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	304	1810	810	238	1368	612	254	898	402
v/s Ratio Prot		0.23		0.04	c0.56		c0.12	0.10			0.29	
v/s Ratio Perm	0.26		0.09	0.28		0.04	c0.34		0.03	0.08		0.13
v/c Ratio	0.64	0.56	0.22	0.63	1.10	0.09	1.23	0.26	0.07	0.34	1.15	0.52
Uniform Delay, d1	31.1	29.8	25.3	20.3	32.2	16.7	36.8	27.7	25.6	39.9	48.8	42.1
Progression Factor	0.95	0.95	1.39	1.00	1.00	1.00	1.29	1.06	1.74	1.00	1.00	1.00
Incremental Delay, d2	40.9	1.5	0.7	4.3	56.1	0.2	132.6	0.5	0.2	3.6	81.4	4.8
Delay (s)	70.5	29.8	35.9	24.5	88.3	16.9	180.0	29.8	44.8	43.5	130.2	46.9
Level of Service	E	C	D	C	F	B	F	C	D	D	F	D
Approach Delay (s)		32.5			79.1			89.8			110.9	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	79.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



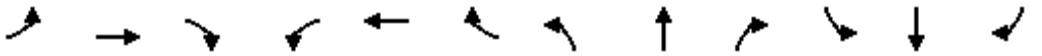
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	754	156	460	2000	46	41	263	85	59	1312	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.12	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	205	3592	1607	229	3592	1607	176	3592	1607	1066	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	820	170	500	2174	50	45	286	92	64	1426	288
RTOR Reduction (vph)	0	0	37	0	0	15	0	0	62	0	0	3
Lane Group Flow (vph)	67	820	133	500	2174	35	45	286	30	64	1426	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.8	36.8	36.8	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.8	36.8	36.8	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1017	455	517	2017	902	58	1188	532	353	1188	532
v/s Ratio Prot		0.23		0.24	c0.61			0.08			c0.40	
v/s Ratio Perm	c0.33		0.08	0.30		0.02	0.26		0.02	0.06		0.18
v/c Ratio	1.16	0.81	0.29	0.97	1.08	0.04	0.78	0.24	0.06	0.18	1.20	0.54
Uniform Delay, d1	46.6	43.3	36.4	36.9	28.5	12.8	39.2	31.6	29.7	31.0	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.85	1.58	1.73	0.93	0.63	0.42	1.00	1.00	1.00
Incremental Delay, d2	166.6	6.8	1.6	6.1	36.1	0.0	46.7	0.1	0.0	0.2	98.5	1.0
Delay (s)	213.2	50.1	38.0	37.5	81.2	22.1	83.0	20.2	12.6	31.2	142.0	36.4
Level of Service	F	D	D	D	F	C	F	C	B	C	F	D
Approach Delay (s)		58.5			72.1			25.2			120.9	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM Average Control Delay	80.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	144.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



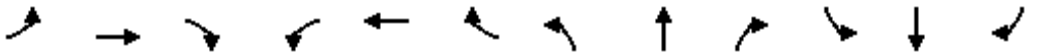
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	764	53	25	2347	79	127	11	45	176	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	570	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	830	58	27	2551	86	138	12	49	191	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	51	830	41	27	2551	78	138	25	0	191	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Effective Green, g (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2219	993	352	2219	993	369	457		228	319	271
v/s Ratio Prot		0.23			c0.71		c0.03	0.02			0.02	
v/s Ratio Perm	0.54		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.88	0.37	0.04	0.08	1.15	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	20.8	12.4	9.7	10.0	24.9	10.0	37.1	34.7		52.3	45.9	47.0
Progression Factor	1.45	0.30	0.05	1.54	1.37	1.72	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	69.3	0.3	0.1	0.1	68.8	0.0	0.6	0.1		22.6	0.2	0.5
Delay (s)	99.4	4.1	0.5	15.5	102.8	17.2	37.8	34.8		75.0	46.0	47.5
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.0			99.1			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	72.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



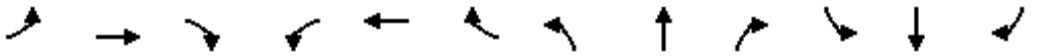
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	173	0	140	0	1229	319	100	759	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.17	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	320	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	188	0	152	0	1336	347	109	825	0
RTOR Reduction (vph)	0	0	0	0	58	0	0	0	55	0	0	0
Lane Group Flow (vph)	0	0	0	188	94	0	0	1336	292	109	825	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				22.4	22.4			93.1	93.1	93.1	93.1	
Effective Green, g (s)				22.4	22.4			93.1	93.1	93.1	93.1	
Actuated g/C Ratio				0.17	0.17			0.72	0.72	0.72	0.72	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				247	277			2572	1151	229	2572	
v/s Ratio Prot					0.06			c0.37			0.23	
v/s Ratio Perm				c0.13					0.18	0.34		
v/c Ratio				0.76	0.34			0.52	0.25	0.48	0.32	
Uniform Delay, d1				51.3	47.3			8.3	6.4	7.9	6.8	
Progression Factor				1.00	1.00			0.22	0.17	0.56	0.42	
Incremental Delay, d2				12.9	0.7			0.7	0.5	6.4	0.3	
Delay (s)				64.2	48.0			2.5	1.5	10.9	3.2	
Level of Service				E	D			A	A	B	A	
Approach Delay (s)		0.0			57.0			2.3			4.1	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



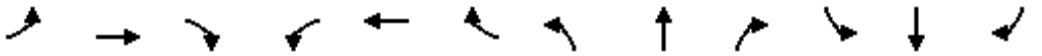
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	1569	6	6	987	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.12	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	222	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	1705	7	7	1073	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	1705	6	7	1073	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Effective Green, g (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Actuated g/C Ratio				0.02	0.02			0.76	0.76	0.76	0.76	
Clearance Time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2746	1229	170	2746	
v/s Ratio Prot					0.00			c0.47			0.30	
v/s Ratio Perm				c0.00					0.00	0.03		
v/c Ratio				0.08	0.00			0.62	0.00	0.04	0.39	
Uniform Delay, d1				31.3	31.2			3.4	1.8	1.9	2.6	
Progression Factor				1.00	1.00			0.08	0.02	0.85	0.73	
Incremental Delay, d2				0.9	0.0			0.9	0.0	0.4	0.4	
Delay (s)				32.2	31.2			1.2	0.0	2.0	2.3	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			1.2			2.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	1.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



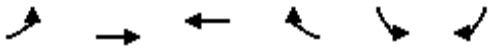
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1575	35	12	990	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.26	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		493	3592	1607	220	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1712	38	13	1076	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1712	32	13	1076	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		387	2818	1261	173	2818	1261
v/s Ratio Prot		0.00			0.00			c0.48			0.30	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.06		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.61	0.03	0.08	0.38	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	2.9	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.23	2.13	1.47	1.24	1.51	1.47
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.1	0.2	0.0	0.8	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		2.0	6.4	2.3	2.8	3.6	2.2
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			6.3			3.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



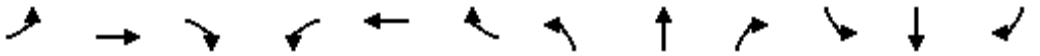
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1513	198	169	830	54	145	1229	363	119	790	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.13	1.00	1.00	0.15	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	273	3592	1607	242	3592	1607	286	3592	1607	175	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1645	215	184	902	59	158	1336	395	129	859	160
RTOR Reduction (vph)	0	0	34	0	0	20	0	0	73	0	0	50
Lane Group Flow (vph)	338	1645	181	184	902	39	158	1336	322	129	859	110
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.3	43.3	43.3
Effective Green, g (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.3	43.3	43.3
Actuated g/C Ratio	0.33	0.33	0.33	0.30	0.27	0.27	0.46	0.37	0.37	0.39	0.33	0.33
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	1202	538	169	986	441	273	1340	600	155	1196	535
v/s Ratio Prot	0.15	c0.46		c0.07	0.25		0.05	c0.37		c0.04	0.24	
v/s Ratio Perm	0.26		0.11	0.26		0.02	0.21		0.20	0.28		0.07
v/c Ratio	1.22	1.37	0.34	1.09	0.91	0.09	0.58	1.00	0.54	0.83	0.72	0.21
Uniform Delay, d1	36.8	43.2	32.4	56.1	45.7	35.1	24.3	40.7	31.9	32.7	38.0	31.0
Progression Factor	1.06	0.70	0.65	1.00	1.00	1.00	1.00	1.00	1.00	1.30	0.69	0.56
Incremental Delay, d2	120.8	169.5	0.2	94.9	12.6	0.1	3.0	23.9	3.4	29.2	3.6	0.8
Delay (s)	159.8	199.5	21.4	151.1	58.3	35.2	27.3	64.6	35.3	71.7	30.0	18.4
Level of Service	F	F	C	F	E	D	C	E	D	E	C	B
Approach Delay (s)		176.0			72.0			55.3			33.0	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	95.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



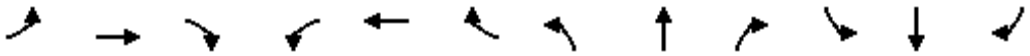
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1989	1045	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	446	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2162	1136	34	84	51
RTOR Reduction (vph)	0	0	0	5	0	46
Lane Group Flow (vph)	53	2162	1136	29	84	5
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	103.9	103.9	103.9	103.9	12.1	12.1
Effective Green, g (s)	103.9	103.9	103.9	103.9	12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.09	0.09
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	2871	2871	1284	167	150
v/s Ratio Prot		c0.60	0.32		c0.05	
v/s Ratio Perm	0.12			0.02		0.00
v/c Ratio	0.15	0.75	0.40	0.02	0.50	0.03
Uniform Delay, d1	3.0	6.6	3.8	2.7	56.1	53.6
Progression Factor	0.82	1.35	0.53	0.44	1.00	1.00
Incremental Delay, d2	0.6	1.2	0.3	0.0	2.4	0.1
Delay (s)	3.0	10.1	2.3	1.2	58.5	53.7
Level of Service	A	B	A	A	E	D
Approach Delay (s)		9.9	2.2		56.7	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



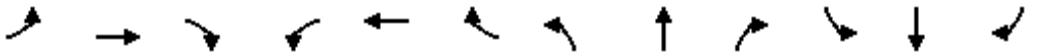
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1962	11	15	1070	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.05	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	97	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2133	12	16	1163	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	2133	11	16	1163	0	1	5	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		100.5	100.5	100.5	100.5		17.0	17.0				
Effective Green, g (s)		100.5	100.5	100.5	100.5		17.0	17.0				
Actuated g/C Ratio		0.77	0.77	0.77	0.77		0.13	0.13				
Clearance Time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2777	1242	75	2777		187	210				
v/s Ratio Prot		c0.59			0.32			c0.00				
v/s Ratio Perm			0.01	0.16			0.00					
v/c Ratio		0.77	0.01	0.21	0.42		0.01	0.03				
Uniform Delay, d1		8.2	3.4	4.0	4.9		49.1	49.3				
Progression Factor		0.33	0.52	0.29	0.14		1.00	1.00				
Incremental Delay, d2		1.0	0.0	1.3	0.1		0.1	0.2				
Delay (s)		3.7	1.8	2.5	0.8		49.2	49.5				
Level of Service		A	A	A	A		D	D				
Approach Delay (s)		3.7			0.8			49.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1955	22	12	1051	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747		1796	1638	
Flt Permitted	0.22	1.00	1.00	0.07	1.00	1.00		0.79		0.74	1.00	
Satd. Flow (perm)	418	3592	1607	139	3592	1607		1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2125	24	13	1142	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	8	0	0	15	0
Lane Group Flow (vph)	7	2125	22	13	1142	8	0	16	0	12	3	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0		6.0	6.0	
Effective Green, g (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0		6.0	6.0	
Actuated g/C Ratio	0.84	0.84	0.84	0.79	0.79	0.79		0.05		0.05	0.05	
Clearance Time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	365	3026	1354	110	2840	1271		66		65	76	
v/s Ratio Prot	0.00	c0.59			0.32						0.00	
v/s Ratio Perm	0.02		0.01	0.09		0.01		c0.01		0.01		
v/c Ratio	0.02	0.70	0.02	0.12	0.40	0.01		0.25		0.18	0.04	
Uniform Delay, d1	2.2	4.0	1.6	3.1	4.2	2.9		59.8		59.6	59.2	
Progression Factor	0.63	2.16	0.50	0.21	0.17	0.12		1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	2.0	0.4	0.0		2.0		1.4	0.2	
Delay (s)	1.4	8.7	0.8	2.7	1.1	0.4		61.8		61.0	59.4	
Level of Service	A	A	A	A	A	A		E		E	E	
Approach Delay (s)		8.5			1.1			61.8			60.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



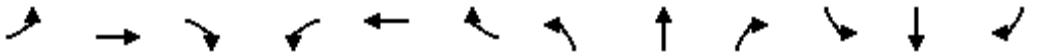
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1534	169	153	834	214	219	1270	352	123	457	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.10	1.00	1.00	0.32	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	207	3592	1607	190	3592	1607	612	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1667	184	166	907	233	238	1380	383	134	497	89
RTOR Reduction (vph)	0	0	57	0	0	78	0	0	82	0	0	44
Lane Group Flow (vph)	272	1667	127	166	907	155	238	1380	301	134	497	45
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	61.3	46.3	46.3	50.8	39.8	39.8	52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	46.3	46.3	50.8	39.8	39.8	52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.36	0.36	0.39	0.31	0.31	0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1279	572	210	1100	492	373	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.46		0.07	0.25		0.07	c0.38		c0.04	0.14	
v/s Ratio Perm	0.29		0.08	0.24		0.10	0.19		0.19	0.26		0.03
v/c Ratio	0.87	1.30	0.22	0.79	0.82	0.31	0.64	1.16	0.57	0.98	0.51	0.10
Uniform Delay, d1	33.4	41.9	29.3	32.0	41.9	34.6	27.3	43.5	35.8	41.9	40.3	35.7
Progression Factor	1.00	1.00	1.00	1.58	0.56	0.45	1.00	1.00	1.00	0.87	0.89	0.97
Incremental Delay, d2	22.4	142.3	0.9	17.5	6.8	1.6	3.6	82.3	1.4	69.1	0.5	0.1
Delay (s)	55.8	184.2	30.1	68.0	30.4	17.3	30.8	125.8	37.2	105.7	36.4	34.7
Level of Service	E	F	C	E	C	B	C	F	D	F	D	C
Approach Delay (s)		154.4			32.8			97.6			49.1	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	97.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1890	143	13	1127	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2054	155	14	1225	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.84	
vC, conflicting volume			2210		2695	1027
vC1, stage 1 conf vol					2054	
vC2, stage 2 conf vol					641	
vCu, unblocked vol			2210		2637	1027
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		66	91
cM capacity (veh/h)			234		82	232

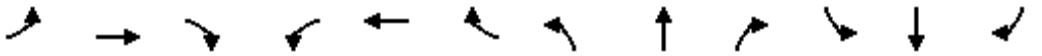
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1027	1027	155	14	612	612	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	234	1700	1700	82	232
Volume to Capacity	0.60	0.60	0.09	0.06	0.36	0.36	0.34	0.09
Queue Length 95th (m)	0.0	0.0	0.0	1.5	0.0	0.0	10.0	2.2
Control Delay (s)	0.0	0.0	0.0	21.4	0.0	0.0	70.5	22.1
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.2			50.0	
Approach LOS							F	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		



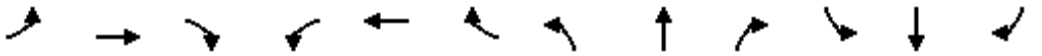
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1775	239	88	879	70	259	605	162	99	423	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.28	1.00	1.00	0.06	1.00	1.00	0.32	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	534	3592	1607	115	3592	1607	608	3592	1607	699	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1929	260	96	955	76	282	658	176	108	460	22
RTOR Reduction (vph)	0	0	47	0	0	32	0	0	77	0	0	17
Lane Group Flow (vph)	39	1929	213	96	955	44	282	658	99	108	460	5
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	255	1713	766	155	2017	902	260	1160	519	167	857	383
v/s Ratio Prot		c0.54		c0.03	0.27		c0.06	0.18			0.13	
v/s Ratio Perm	0.07		0.13	0.32		0.03	c0.29		0.06	0.15		0.00
v/c Ratio	0.15	1.13	0.28	0.62	0.47	0.05	1.08	0.57	0.19	0.65	0.54	0.01
Uniform Delay, d1	19.2	34.0	20.5	28.8	17.0	12.9	43.4	36.5	31.7	44.6	43.2	37.8
Progression Factor	0.80	0.92	0.78	1.00	1.00	1.00	0.72	0.79	0.82	1.00	1.00	1.00
Incremental Delay, d2	0.9	62.7	0.6	7.2	0.8	0.1	76.7	1.8	0.7	17.7	2.4	0.1
Delay (s)	16.3	93.8	16.7	36.0	17.8	13.0	108.2	30.4	26.6	62.3	45.6	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		83.5			19.0			49.5			48.4	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	57.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



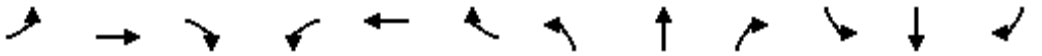
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1777	96	105	965	76	208	1065	414	62	390	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.08	1.00	1.00	0.35	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	237	3592	1607	142	3592	1607	657	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1932	104	114	1049	83	226	1158	450	67	424	118
RTOR Reduction (vph)	0	0	30	0	0	49	0	0	83	0	0	90
Lane Group Flow (vph)	224	1932	74	114	1049	34	226	1158	367	67	424	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	61.1	53.3	53.3	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	61.1	53.3	53.3	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	290	1627	728	166	1473	659	317	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.54		0.04	0.29		c0.05	c0.32		0.02	0.12	
v/s Ratio Perm	0.34		0.05	0.28		0.02	0.19		0.23	0.14		0.02
v/c Ratio	0.77	1.19	0.10	0.69	0.71	0.05	0.71	1.14	0.80	0.56	0.49	0.07
Uniform Delay, d1	22.0	35.5	20.4	29.4	32.0	23.1	34.0	46.5	43.2	38.5	42.5	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.60	0.20	1.08	1.06	1.10	1.00	1.00	1.00
Incremental Delay, d2	12.0	90.9	0.3	10.7	2.8	0.1	6.2	71.3	8.3	6.0	0.4	0.1
Delay (s)	34.0	126.4	20.7	53.8	22.1	4.8	42.9	120.4	55.9	44.5	42.9	38.2
Level of Service	C	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		112.4			23.9			95.1			42.2	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	81.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



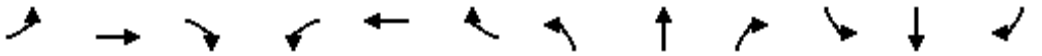
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1846	108	36	923	239	63	40	41	181	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.26	1.00	1.00	0.05	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	488	3592	1607	94	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	2007	117	39	1003	260	68	43	45	197	28	103
RTOR Reduction (vph)	0	0	12	0	0	70	0	12	0	0	0	84
Lane Group Flow (vph)	142	2007	105	39	1003	190	68	76	0	197	28	19
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Effective Green, g (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	344	2531	1132	66	2531	1132	262	328		248	355	302
v/s Ratio Prot		c0.56			0.28			0.04			0.01	
v/s Ratio Perm	0.29		0.07	0.42		0.12	0.05			c0.15		0.01
v/c Ratio	0.41	0.79	0.09	0.59	0.40	0.17	0.26	0.23		0.79	0.08	0.06
Uniform Delay, d1	8.0	12.9	6.1	9.7	7.9	6.4	45.1	44.8		50.4	43.5	43.4
Progression Factor	1.46	1.40	1.88	0.94	0.63	0.04	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.0	28.7	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.0	18.2	11.4	37.8	5.3	0.5	45.6	45.2		66.3	43.6	43.5
Level of Service	B	B	B	D	A	A	D	D		E	D	D
Approach Delay (s)		17.4			5.3			45.4			57.2	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



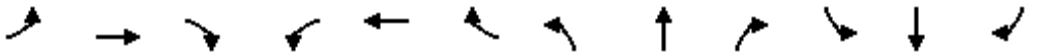
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	362	0	305	0	428	65	194	1207	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.47	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	898	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	393	0	332	0	465	71	211	1312	0
RTOR Reduction (vph)	0	0	0	0	205	0	0	0	31	0	0	0
Lane Group Flow (vph)	0	0	0	393	127	0	0	465	40	211	1312	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				42.8	42.8			72.7	72.7	72.7	72.7	
Effective Green, g (s)				42.8	42.8			72.7	72.7	72.7	72.7	
Actuated g/C Ratio				0.33	0.33			0.56	0.56	0.56	0.56	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				471	529			2009	899	502	2009	
v/s Ratio Prot					0.08			0.13			c0.37	
v/s Ratio Perm				c0.27					0.02	0.24		
v/c Ratio				0.83	0.24			0.23	0.04	0.42	0.65	
Uniform Delay, d1				40.3	31.8			14.5	12.9	16.5	19.9	
Progression Factor				1.00	1.00			0.84	1.02	0.31	0.35	
Incremental Delay, d2				12.1	0.2			0.3	0.1	1.0	0.7	
Delay (s)				52.4	32.0			12.5	13.4	6.2	7.6	
Level of Service				D	C			B	B	A	A	
Approach Delay (s)		0.0			43.1			12.6			7.4	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



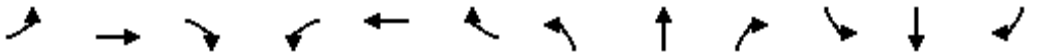
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	606	1	1	1738	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.40	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	759	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	659	1	1	1889	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	659	1	1	1889	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Effective Green, g (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Actuated g/C Ratio				0.02	0.02			0.81	0.81	0.81	0.81	
Clearance Time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2912	1303	615	2912	
v/s Ratio Prot					0.00			0.18			c0.53	
v/s Ratio Perm				c0.00					0.00	0.00		
v/c Ratio				0.08	0.00			0.23	0.00	0.00	0.65	
Uniform Delay, d1				31.3	31.2			1.4	1.2	1.2	2.5	
Progression Factor				1.00	1.00			0.35	0.38	1.05	1.07	
Incremental Delay, d2				0.9	0.0			0.2	0.0	0.0	0.9	
Delay (s)				32.2	31.2			0.7	0.4	1.2	3.5	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			0.7			3.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



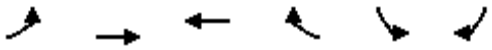
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	606	4	1	1741	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.09	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		168	3592	1607	759	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	659	4	1	1892	3
RTOR Reduction (vph)	0	12	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	9	0	3	0	0	1	659	3	1	1892	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		132	2818	1261	596	2818	1261
v/s Ratio Prot		0.01			0.00			0.18			c0.53	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.12		0.03	0.00		0.01	0.23	0.00	0.00	0.67	0.00
Uniform Delay, d1	29.8	29.7		29.6	29.6		1.5	1.8	1.5	1.5	3.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.45	0.92	0.39	1.38	1.68	1.53
Incremental Delay, d2	1.1	0.7		0.2	0.0		0.1	0.2	0.0	0.0	1.1	0.0
Delay (s)	30.9	30.4		29.8	29.6		0.8	1.9	0.6	2.1	6.4	2.3
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.7			29.7			1.9			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



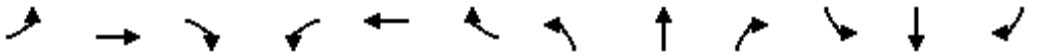
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	646	134	233	1298	44	169	510	144	103	1294	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.97		1.00	1.00		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5028		1796	5136		1796	4990		1796	4952	
Flt Permitted	0.13	1.00		0.16	1.00		0.07	1.00		0.36	1.00	
Satd. Flow (perm)	248	5028		304	5136		136	4990		683	4952	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	702	146	253	1411	48	184	554	157	112	1407	522
RTOR Reduction (vph)	0	24	0	0	3	0	0	40	0	0	51	0
Lane Group Flow (vph)	174	824	0	253	1456	0	184	671	0	112	1878	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.5	30.5		48.5	36.5		66.4	55.5		58.6	51.6	
Effective Green, g (s)	38.5	30.5		48.5	36.5		66.4	55.5		58.6	51.6	
Actuated g/C Ratio	0.30	0.23		0.37	0.28		0.51	0.43		0.45	0.40	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	1180		274	1442		209	2130		368	1966	
v/s Ratio Prot	0.06	0.16		c0.10	c0.28		c0.07	0.13		0.02	c0.38	
v/s Ratio Perm	0.24			0.25			0.38			0.12		
v/c Ratio	1.03	0.70		0.92	1.01		0.88	0.32		0.30	0.96	
Uniform Delay, d1	41.7	45.5		31.7	46.8		35.8	24.7		20.9	38.1	
Progression Factor	1.78	1.45		1.00	1.00		1.00	1.00		1.06	1.12	
Incremental Delay, d2	76.8	1.8		34.5	26.1		32.1	0.4		0.4	10.7	
Delay (s)	151.0	67.8		66.2	72.9		67.9	25.1		22.5	53.5	
Level of Service	F	E		E	E		E	C		C	D	
Approach Delay (s)		82.0			71.9			33.9			51.8	
Approach LOS		F			E			C			D	

Intersection Summary			
HCM Average Control Delay	60.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



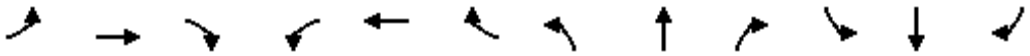
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	873	2045	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5155		1796	1607
Flt Permitted	0.06	1.00	1.00		0.95	1.00
Satd. Flow (perm)	106	5161	5155		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	949	2223	17	62	66
RTOR Reduction (vph)	0	0	0	0	0	61
Lane Group Flow (vph)	52	949	2240	0	62	5
Turn Type	pm+pt					Perm
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.0	107.0	98.0		9.0	9.0
Effective Green, g (s)	107.0	107.0	98.0		9.0	9.0
Actuated g/C Ratio	0.82	0.82	0.75		0.07	0.07
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	152	4248	3886		124	111
v/s Ratio Prot	c0.01	0.18	c0.43		c0.03	
v/s Ratio Perm	0.27					0.00
v/c Ratio	0.34	0.22	0.58		0.50	0.04
Uniform Delay, d1	5.6	2.5	7.0		58.3	56.5
Progression Factor	7.28	0.04	1.66		1.00	1.00
Incremental Delay, d2	1.3	0.1	0.2		3.1	0.2
Delay (s)	42.1	0.2	11.8		61.5	56.6
Level of Service	D	A	B		E	E
Approach Delay (s)		2.4	11.8		59.0	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



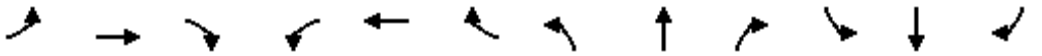
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	877	4	11	2081	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		5.5	5.5				
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00				
Frt		1.00		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		5158		1796	5161		1796	1607				
Flt Permitted		1.00		0.28	1.00		0.76	1.00				
Satd. Flow (perm)		5158		522	5161		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	953	4	12	2262	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	957	0	12	2262	0	9	9	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		36.5		36.5	36.5		17.5	17.5				
Effective Green, g (s)		36.5		36.5	36.5		17.5	17.5				
Actuated g/C Ratio		0.56		0.56	0.56		0.27	0.27				
Clearance Time (s)		5.5		5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2896		293	2898		386	433				
v/s Ratio Prot		0.19			c0.44			0.01				
v/s Ratio Perm				0.02			c0.01					
v/c Ratio		0.33		0.04	0.78		0.02	0.02				
Uniform Delay, d1		7.7		6.4	11.1		17.5	17.4				
Progression Factor		0.51		0.63	1.63		1.00	1.00				
Incremental Delay, d2		0.1		0.0	1.2		0.1	0.1				
Delay (s)		4.0		4.1	19.3		17.6	17.5				
Level of Service		A		A	B		B	B				
Approach Delay (s)		4.0			19.3			17.5			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	871	17	7	2078	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.98		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.96		0.95	1.00	
Satd. Flow (prot)	1796	5147		1796	5160			1776		1796	1607	
Flt Permitted	0.06	1.00		0.28	1.00			0.75		0.80	1.00	
Satd. Flow (perm)	105	5147		538	5160			1394		1508	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	947	18	8	2259	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	1	0	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	964	0	8	2262	0	0	53	0	2	1	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	106.1	106.1		99.8	99.8			9.4		9.4	9.4	
Effective Green, g (s)	106.1	106.1		99.8	99.8			9.4		9.4	9.4	
Actuated g/C Ratio	0.82	0.82		0.77	0.77			0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	116	4201		413	3961			101		109	116	
v/s Ratio Prot	0.00	c0.19			c0.44						0.00	
v/s Ratio Perm	0.08			0.01				c0.04		0.00		
v/c Ratio	0.10	0.23		0.02	0.57			0.52		0.02	0.00	
Uniform Delay, d1	4.4	2.7		3.6	6.2			58.1		56.0	56.0	
Progression Factor	0.35	0.32		0.14	0.41			1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		0.1	0.4			4.5		0.1	0.0	
Delay (s)	1.8	0.9		0.6	2.9			62.6		56.1	56.0	
Level of Service	A	A		A	A			E		E	E	
Approach Delay (s)		1.0			2.9			62.6			56.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



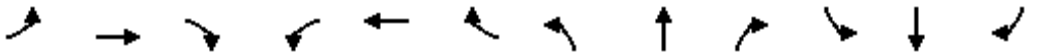
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	669	235	391	1582	117	132	324	112	197	1349	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	4960		1796	5108		1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00		0.12	1.00		0.10	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	265	4960		233	5108		197	3592	1607	865	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	727	255	425	1720	127	143	352	122	214	1466	286
RTOR Reduction (vph)	0	48	0	0	6	0	0	0	86	0	0	48
Lane Group Flow (vph)	74	934	0	425	1841	0	143	352	36	214	1466	238
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22		0.46	0.39		0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	1087		431	2008		134	1058	473	450	1243	556
v/s Ratio Prot	0.02	0.19		c0.20	0.36		c0.05	0.10		0.04	c0.41	
v/s Ratio Perm	0.14			c0.25			0.31		0.02	0.15		0.15
v/c Ratio	0.62	0.86		0.99	0.92		1.07	0.33	0.08	0.48	1.18	0.43
Uniform Delay, d1	39.1	48.8		39.0	37.4		40.9	35.9	33.1	25.1	42.5	32.6
Progression Factor	1.00	1.00		0.89	1.09		1.00	1.00	1.00	0.77	0.73	0.62
Incremental Delay, d2	9.7	8.8		36.2	7.1		96.8	0.2	0.1	0.7	88.3	0.5
Delay (s)	48.8	57.7		71.1	48.1		137.7	36.0	33.2	20.0	119.3	20.9
Level of Service	D	E		E	D		F	D	C	B	F	C
Approach Delay (s)		57.0			52.4			59.0			94.2	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM Average Control Delay	67.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	933	54	23	2292	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1014	59	25	2491	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1073		2310	507
vC1, stage 1 conf vol					1014	
vC2, stage 2 conf vol					1296	
vCu, unblocked vol			1073		1623	507
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		42	94
cM capacity (veh/h)			646		257	511

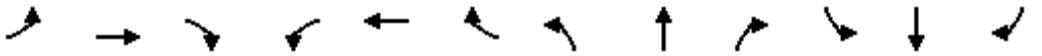
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	507	507	59	25	1246	1246	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	646	1700	1700	257	511
Volume to Capacity	0.30	0.30	0.03	0.04	0.73	0.73	0.58	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	25.6	1.4
Control Delay (s)	0.0	0.0	0.0	10.8	0.0	0.0	37.0	12.5
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			33.0	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		



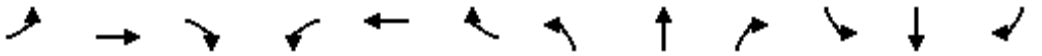
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	747	224	178	1840	117	269	329	99	79	952	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.22	1.00	1.00	0.11	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	144	3592	1607	414	3592	1607	207	3592	1607	1017	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	812	243	193	2000	127	292	358	108	86	1035	221
RTOR Reduction (vph)	0	0	103	0	0	58	0	0	67	0	0	11
Lane Group Flow (vph)	37	812	140	193	2000	69	292	358	41	86	1035	211
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	304	1810	810	238	1368	612	254	898	402
v/s Ratio Prot		0.23		0.04	c0.56		c0.12	0.10			0.29	
v/s Ratio Perm	0.26		0.09	0.28		0.04	c0.34		0.03	0.08		0.13
v/c Ratio	0.64	0.56	0.22	0.63	1.10	0.09	1.23	0.26	0.07	0.34	1.15	0.52
Uniform Delay, d1	31.1	29.8	25.3	20.3	32.2	16.7	36.8	27.7	25.6	39.9	48.8	42.1
Progression Factor	0.95	0.95	1.39	1.00	1.00	1.00	1.24	1.03	1.68	1.00	1.00	1.00
Incremental Delay, d2	40.9	1.5	0.7	4.3	56.1	0.2	132.6	0.5	0.2	3.6	81.4	4.8
Delay (s)	70.6	29.7	36.0	24.5	88.3	16.9	178.3	29.1	43.1	43.5	130.2	46.9
Level of Service	E	C	D	C	F	B	F	C	D	D	F	D
Approach Delay (s)		32.5			79.1			88.6			110.9	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	78.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	124.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



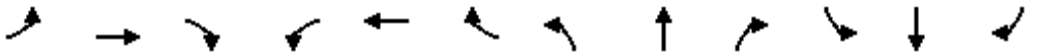
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	754	156	460	2000	46	41	263	85	59	1312	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.12	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	205	3592	1607	229	3592	1607	176	3592	1607	1066	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	820	170	500	2174	50	45	286	92	64	1426	288
RTOR Reduction (vph)	0	0	37	0	0	15	0	0	62	0	0	3
Lane Group Flow (vph)	67	820	133	500	2174	35	45	286	30	64	1426	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.8	36.8	36.8	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.8	36.8	36.8	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1017	455	517	2017	902	58	1188	532	353	1188	532
v/s Ratio Prot		0.23		0.24	c0.61			0.08			c0.40	
v/s Ratio Perm	c0.33		0.08	0.30		0.02	0.26		0.02	0.06		0.18
v/c Ratio	1.16	0.81	0.29	0.97	1.08	0.04	0.78	0.24	0.06	0.18	1.20	0.54
Uniform Delay, d1	46.6	43.3	36.4	36.9	28.5	12.8	39.2	31.6	29.7	31.0	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.85	1.58	1.73	0.87	0.60	0.55	1.00	1.00	1.00
Incremental Delay, d2	166.6	6.8	1.6	6.1	36.1	0.0	46.7	0.1	0.0	0.2	98.5	1.0
Delay (s)	213.2	50.1	38.0	37.5	81.2	22.1	80.8	19.1	16.5	31.2	142.0	36.4
Level of Service	F	D	D	D	F	C	F	B	B	C	F	D
Approach Delay (s)		58.5			72.1			25.1			120.9	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM Average Control Delay	80.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	144.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



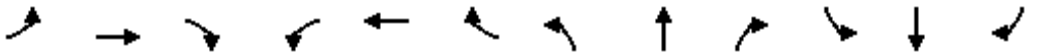
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	764	53	25	2347	79	127	11	45	176	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	570	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	830	58	27	2551	86	138	12	49	191	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	51	830	41	27	2551	78	138	25	0	191	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Effective Green, g (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2219	993	352	2219	993	369	457		228	319	271
v/s Ratio Prot		0.23			c0.71		c0.03	0.02			0.02	
v/s Ratio Perm	0.54		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.88	0.37	0.04	0.08	1.15	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	20.8	12.4	9.7	10.0	24.9	10.0	37.1	34.7		52.3	45.9	47.0
Progression Factor	1.46	0.31	0.06	1.54	1.37	1.72	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	69.3	0.3	0.1	0.1	68.8	0.0	0.6	0.1		22.6	0.2	0.5
Delay (s)	99.7	4.1	0.6	15.5	102.8	17.2	37.8	34.8		75.0	46.0	47.5
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.1			99.1			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	72.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



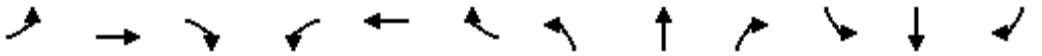
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	173	0	140	0	1229	319	100	759	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.17	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	320	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	188	0	152	0	1336	347	109	825	0
RTOR Reduction (vph)	0	0	0	0	58	0	0	0	55	0	0	0
Lane Group Flow (vph)	0	0	0	188	94	0	0	1336	292	109	825	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				22.4	22.4			93.1	93.1	93.1	93.1	
Effective Green, g (s)				22.4	22.4			93.1	93.1	93.1	93.1	
Actuated g/C Ratio				0.17	0.17			0.72	0.72	0.72	0.72	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				247	277			2572	1151	229	2572	
v/s Ratio Prot					0.06			c0.37			0.23	
v/s Ratio Perm				c0.13					0.18	0.34		
v/c Ratio				0.76	0.34			0.52	0.25	0.48	0.32	
Uniform Delay, d1				51.3	47.3			8.3	6.4	7.9	6.8	
Progression Factor				1.00	1.00			0.25	0.18	0.56	0.42	
Incremental Delay, d2				12.9	0.7			0.7	0.5	6.4	0.3	
Delay (s)				64.2	48.0			2.8	1.6	10.9	3.2	
Level of Service				E	D			A	A	B	A	
Approach Delay (s)		0.0			57.0			2.5			4.1	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



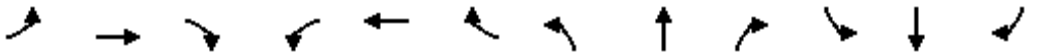
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	1569	6	6	987	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.12	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	222	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	1705	7	7	1073	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	1705	6	7	1073	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Effective Green, g (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Actuated g/C Ratio				0.02	0.02			0.76	0.76	0.76	0.76	
Clearance Time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2746	1229	170	2746	
v/s Ratio Prot					0.00			c0.47			0.30	
v/s Ratio Perm				c0.00					0.00	0.03		
v/c Ratio				0.08	0.00			0.62	0.00	0.04	0.39	
Uniform Delay, d1				31.3	31.2			3.4	1.8	1.9	2.6	
Progression Factor				1.00	1.00			0.14	0.02	0.85	0.73	
Incremental Delay, d2				0.9	0.0			0.9	0.0	0.4	0.4	
Delay (s)				32.2	31.2			1.4	0.0	2.0	2.3	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			1.4			2.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	1.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



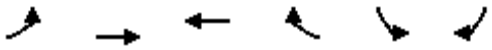
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1575	35	12	990	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.26	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		493	3592	1607	220	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1712	38	13	1076	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1712	32	13	1076	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		387	2818	1261	173	2818	1261
v/s Ratio Prot		0.00			0.00			c0.48			0.30	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.06		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.61	0.03	0.08	0.38	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	2.9	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.28	2.12	1.44	1.24	1.51	1.47
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.1	0.3	0.0	0.8	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		2.1	6.4	2.2	2.8	3.6	2.2
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			6.3			3.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



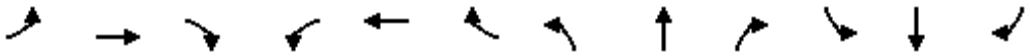
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1513	198	169	830	54	145	1229	363	119	790	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5072		1796	5114		1796	4984		1796	5040	
Flt Permitted	0.14	1.00		0.13	1.00		0.16	1.00		0.09	1.00	
Satd. Flow (perm)	273	5072		242	5114		304	4984		174	5040	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1645	215	184	902	59	158	1336	395	129	859	160
RTOR Reduction (vph)	0	13	0	0	6	0	0	41	0	0	19	0
Lane Group Flow (vph)	338	1847	0	184	955	0	158	1690	0	129	1000	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	43.5		39.2	35.7		59.5	48.5		50.5	43.5	
Effective Green, g (s)	43.5	43.5		39.2	35.7		59.5	48.5		50.5	43.5	
Actuated g/C Ratio	0.33	0.33		0.30	0.27		0.46	0.37		0.39	0.33	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1697		169	1404		277	1859		155	1686	
v/s Ratio Prot	c0.15	0.36		c0.07	0.19		0.05	c0.34		c0.04	0.20	
v/s Ratio Perm	c0.26			0.26			0.21			0.28		
v/c Ratio	1.22	1.09		1.09	0.68		0.57	0.91		0.83	0.59	
Uniform Delay, d1	36.3	43.2		56.1	42.1		23.0	38.7		31.1	35.9	
Progression Factor	0.74	0.40		1.00	1.00		1.00	1.00		1.32	0.69	
Incremental Delay, d2	125.9	49.1		94.9	1.4		2.8	8.1		29.2	1.5	
Delay (s)	153.0	66.4		151.1	43.4		25.8	46.8		70.0	26.4	
Level of Service	F	E		F	D		C	D		E	C	
Approach Delay (s)		79.7			60.7			45.0			31.3	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	57.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



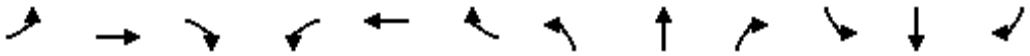
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1989	1045	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5139		1796	1607
Flt Permitted	0.23	1.00	1.00		0.95	1.00
Satd. Flow (perm)	429	5161	5139		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2162	1136	34	84	51
RTOR Reduction (vph)	0	0	1	0	0	46
Lane Group Flow (vph)	53	2162	1169	0	84	5
Turn Type	Perm					Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	103.9	103.9	103.9		12.1	12.1
Effective Green, g (s)	103.9	103.9	103.9		12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.80		0.09	0.09
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	343	4125	4107		167	150
v/s Ratio Prot		c0.42	0.23		c0.05	
v/s Ratio Perm	0.12					0.00
v/c Ratio	0.15	0.52	0.28		0.50	0.03
Uniform Delay, d1	3.0	4.5	3.4		56.1	53.6
Progression Factor	0.83	1.12	0.46		1.00	1.00
Incremental Delay, d2	0.8	0.4	0.1		2.4	0.1
Delay (s)	3.3	5.4	1.7		58.5	53.7
Level of Service	A	A	A		E	D
Approach Delay (s)		5.4	1.7		56.7	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



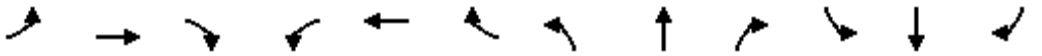
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1962	11	15	1070	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		7.0	7.0				
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00				
Frt		1.00		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		5157		1796	5161		1796	1607				
Flt Permitted		1.00		0.05	1.00		0.76	1.00				
Satd. Flow (perm)		5157		102	5161		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2133	12	16	1163	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	2144	0	16	1163	0	1	8	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		86.1		86.1	86.1		31.4	31.4				
Effective Green, g (s)		86.1		86.1	86.1		31.4	31.4				
Actuated g/C Ratio		0.66		0.66	0.66		0.24	0.24				
Clearance Time (s)		5.5		5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		3416		68	3418		346	388				
v/s Ratio Prot		c0.42			0.23			c0.01				
v/s Ratio Perm				0.16			0.00					
v/c Ratio		0.63		0.24	0.34		0.00	0.02				
Uniform Delay, d1		12.7		8.8	9.6		37.4	37.6				
Progression Factor		0.34		0.36	0.18		1.00	1.00				
Incremental Delay, d2		0.3		1.7	0.1		0.0	0.1				
Delay (s)		4.7		4.9	1.8		37.4	37.7				
Level of Service		A		A	A		D	D				
Approach Delay (s)		4.7			1.8			37.7			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1955	22	12	1051	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1796	5152		1796	5155			1747		1796	1638	
Flt Permitted	0.22	1.00		0.08	1.00			0.79		0.74	1.00	
Satd. Flow (perm)	415	5152		149	5155			1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2125	24	13	1142	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	8	0	0	15	0
Lane Group Flow (vph)	7	2149	0	13	1151	0	0	16	0	12	3	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	109.5	109.5		102.8	102.8			6.0		6.0	6.0	
Effective Green, g (s)	109.5	109.5		102.8	102.8			6.0		6.0	6.0	
Actuated g/C Ratio	0.84	0.84		0.79	0.79			0.05		0.05	0.05	
Clearance Time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	362	4340		118	4076			66		65	76	
v/s Ratio Prot	0.00	c0.42			0.22						0.00	
v/s Ratio Perm	0.02			0.09				c0.01		0.01		
v/c Ratio	0.02	0.50		0.11	0.28			0.25		0.18	0.04	
Uniform Delay, d1	1.8	2.8		3.1	3.7			59.8		59.6	59.2	
Progression Factor	0.63	0.57		0.21	0.18			1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.8	0.2			2.0		1.4	0.2	
Delay (s)	1.1	1.7		2.5	0.8			61.8		61.0	59.4	
Level of Service	A	A		A	A			E		E	E	
Approach Delay (s)		1.7			0.9			61.8			60.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	2.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



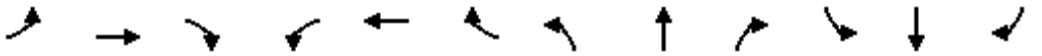
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1534	169	153	834	214	219	1270	352	123	457	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	5084		1796	5003		1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00		0.10	1.00		0.32	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	212	5084		189	5003		612	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1667	184	166	907	233	238	1380	383	134	497	89
RTOR Reduction (vph)	0	10	0	0	34	0	0	0	82	0	0	44
Lane Group Flow (vph)	272	1841	0	166	1106	0	238	1380	301	134	497	45
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	61.3	46.3		51.0	40.0		52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	46.3		51.0	40.0		52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.36		0.39	0.31		0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	311	1811		210	1539		373	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.36		0.07	0.22		0.07	c0.38		c0.04	0.14	
v/s Ratio Perm	0.30			0.24			0.19		0.19	0.26		0.03
v/c Ratio	0.87	1.02		0.79	0.72		0.64	1.16	0.57	0.98	0.51	0.10
Uniform Delay, d1	32.2	41.9		31.9	40.0		27.3	43.5	35.8	41.9	40.3	35.7
Progression Factor	1.00	1.00		1.68	0.45		1.00	1.00	1.00	0.87	0.89	0.97
Incremental Delay, d2	22.8	25.3		17.8	2.9		3.6	82.3	1.4	69.1	0.5	0.1
Delay (s)	55.0	67.2		71.5	20.9		30.8	125.8	37.2	105.7	36.4	34.7
Level of Service	D	E		E	C		C	F	D	F	D	C
Approach Delay (s)		65.6			27.3			97.6			49.1	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	65.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1890	143	13	1127	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2054	155	14	1225	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.84	
vC, conflicting volume			2210		2695	1027
vC1, stage 1 conf vol					2054	
vC2, stage 2 conf vol					641	
vCu, unblocked vol			2210		2637	1027
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		66	91
cM capacity (veh/h)			234		82	232

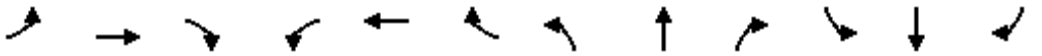
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1027	1027	155	14	612	612	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	234	1700	1700	82	232
Volume to Capacity	0.60	0.60	0.09	0.06	0.36	0.36	0.34	0.09
Queue Length 95th (m)	0.0	0.0	0.0	1.5	0.0	0.0	10.0	2.2
Control Delay (s)	0.0	0.0	0.0	21.4	0.0	0.0	70.5	22.1
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.2			50.0	
Approach LOS							F	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		



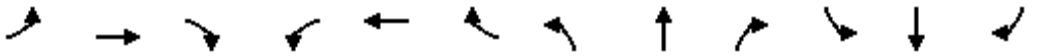
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1775	239	88	879	70	259	605	162	99	423	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.28	1.00	1.00	0.06	1.00	1.00	0.32	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	534	3592	1607	115	3592	1607	608	3592	1607	699	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1929	260	96	955	76	282	658	176	108	460	22
RTOR Reduction (vph)	0	0	47	0	0	32	0	0	77	0	0	17
Lane Group Flow (vph)	39	1929	213	96	955	44	282	658	99	108	460	5
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	255	1713	766	155	2017	902	260	1160	519	167	857	383
v/s Ratio Prot		c0.54		c0.03	0.27		c0.06	0.18			0.13	
v/s Ratio Perm	0.07		0.13	0.32		0.03	c0.29		0.06	0.15		0.00
v/c Ratio	0.15	1.13	0.28	0.62	0.47	0.05	1.08	0.57	0.19	0.65	0.54	0.01
Uniform Delay, d1	19.2	34.0	20.5	28.8	17.0	12.9	43.4	36.5	31.7	44.6	43.2	37.8
Progression Factor	0.80	0.92	0.78	1.00	1.00	1.00	0.75	0.80	0.80	1.00	1.00	1.00
Incremental Delay, d2	0.9	62.7	0.6	7.2	0.8	0.1	76.7	1.8	0.7	17.7	2.4	0.1
Delay (s)	16.3	93.8	16.7	36.0	17.8	13.0	109.1	31.1	26.2	62.3	45.6	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		83.5			19.0			50.0			48.4	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	57.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1777	96	105	965	76	208	1065	414	62	390	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.08	1.00	1.00	0.35	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	237	3592	1607	142	3592	1607	657	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1932	104	114	1049	83	226	1158	450	67	424	118
RTOR Reduction (vph)	0	0	30	0	0	49	0	0	83	0	0	90
Lane Group Flow (vph)	224	1932	74	114	1049	34	226	1158	367	67	424	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	61.1	53.3	53.3	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	61.1	53.3	53.3	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	290	1627	728	166	1473	659	317	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.54		0.04	0.29		c0.05	c0.32		0.02	0.12	
v/s Ratio Perm	0.34		0.05	0.28		0.02	0.19		0.23	0.14		0.02
v/c Ratio	0.77	1.19	0.10	0.69	0.71	0.05	0.71	1.14	0.80	0.56	0.49	0.07
Uniform Delay, d1	22.0	35.5	20.4	29.4	32.0	23.1	34.0	46.5	43.2	38.5	42.5	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.60	0.20	1.07	1.05	1.09	1.00	1.00	1.00
Incremental Delay, d2	12.0	90.9	0.3	10.7	2.8	0.1	6.2	71.3	8.3	6.0	0.4	0.1
Delay (s)	34.0	126.4	20.7	53.8	22.1	4.8	42.6	120.3	55.6	44.5	42.9	38.2
Level of Service	C	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		112.4			23.9			94.8			42.2	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	81.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



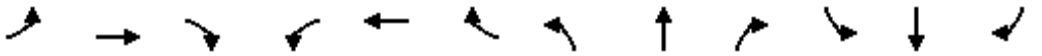
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1846	108	36	923	239	63	40	41	181	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.26	1.00	1.00	0.05	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	488	3592	1607	94	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	2007	117	39	1003	260	68	43	45	197	28	103
RTOR Reduction (vph)	0	0	12	0	0	77	0	12	0	0	0	84
Lane Group Flow (vph)	142	2007	105	39	1003	183	68	76	0	197	28	19
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Effective Green, g (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	344	2531	1132	66	2531	1132	262	328		248	355	302
v/s Ratio Prot		c0.56			0.28			0.04			0.01	
v/s Ratio Perm	0.29		0.07	0.42		0.11	0.05			c0.15		0.01
v/c Ratio	0.41	0.79	0.09	0.59	0.40	0.16	0.26	0.23		0.79	0.08	0.06
Uniform Delay, d1	8.0	12.9	6.1	9.7	7.9	6.4	45.1	44.8		50.4	43.5	43.4
Progression Factor	1.46	1.40	1.88	0.94	0.63	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.0	28.7	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.0	18.2	11.4	37.8	5.3	0.6	45.6	45.2		66.3	43.6	43.5
Level of Service	B	B	B	D	A	A	D	D		E	D	D
Approach Delay (s)		17.5			5.3			45.4			57.2	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix I – Synchro Output
2026 Background Condition

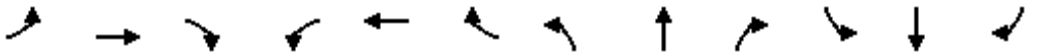
This appendix contains the following outputs in order:

- Scenario E, Background AM;
- Scenario E, Background PM.



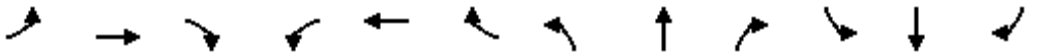
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	369	0	311	0	442	65	194	1247	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.46	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	879	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	401	0	338	0	480	71	211	1355	0
RTOR Reduction (vph)	0	0	0	0	194	0	0	0	32	0	0	0
Lane Group Flow (vph)	0	0	0	401	144	0	0	480	39	211	1355	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				43.5	43.5			72.0	72.0	72.0	72.0	
Effective Green, g (s)				43.5	43.5			72.0	72.0	72.0	72.0	
Actuated g/C Ratio				0.33	0.33			0.55	0.55	0.55	0.55	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				479	538			1989	890	487	1989	
v/s Ratio Prot					0.09			0.13			c0.38	
v/s Ratio Perm				c0.28					0.02	0.24		
v/c Ratio				0.84	0.27			0.24	0.04	0.43	0.68	
Uniform Delay, d1				40.0	31.6			14.9	13.3	17.0	20.8	
Progression Factor				1.00	1.00			0.88	1.18	0.32	0.37	
Incremental Delay, d2				12.1	0.3			0.3	0.1	1.0	0.7	
Delay (s)				52.1	31.9			13.5	15.7	6.4	8.3	
Level of Service				D	C			B	B	A	A	
Approach Delay (s)		0.0			42.8			13.8			8.0	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



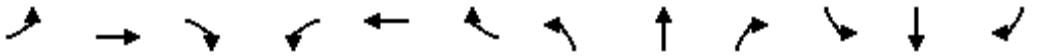
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	628	1	1	1801	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.39	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	741	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	683	1	1	1958	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	683	1	1	1958	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Effective Green, g (s)				1.3	1.3			52.7	52.7	52.7	52.7	
Actuated g/C Ratio				0.02	0.02			0.81	0.81	0.81	0.81	
Clearance Time (s)				5.5	5.5			5.5	5.5	5.5	5.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2912	1303	601	2912	
v/s Ratio Prot					0.00			0.19			c0.55	
v/s Ratio Perm				c0.00					0.00	0.00		
v/c Ratio				0.08	0.00			0.23	0.00	0.00	0.67	
Uniform Delay, d1				31.3	31.2			1.4	1.2	1.2	2.6	
Progression Factor				1.00	1.00			0.34	0.31	1.00	1.22	
Incremental Delay, d2				0.9	0.0			0.2	0.0	0.0	1.0	
Delay (s)				32.2	31.2			0.7	0.4	1.2	4.1	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			0.7			4.1	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



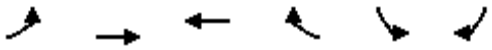
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	629	4	1	1804	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		151	3592	1607	740	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	684	4	1	1961	3
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	11	0	3	0	0	1	684	3	1	1961	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		118	2818	1261	581	2818	1261
v/s Ratio Prot		0.01			0.00			0.19			c0.55	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.14		0.03	0.00		0.01	0.24	0.00	0.00	0.70	0.00
Uniform Delay, d1	29.8	29.8		29.6	29.6		1.5	1.9	1.5	1.5	3.3	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.45	0.94	0.39	1.41	1.66	1.58
Incremental Delay, d2	1.1	0.9		0.2	0.0		0.1	0.2	0.0	0.0	1.2	0.0
Delay (s)	30.9	30.6		29.8	29.6		0.8	1.9	0.6	2.1	6.7	2.4
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.8			29.7			1.9			6.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



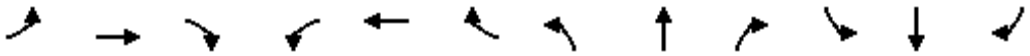
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	658	134	233	1323	44	169	527	144	103	1337	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.97		1.00	1.00		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5030		1796	5136		1796	4995		1796	4957	
Flt Permitted	0.13	1.00		0.15	1.00		0.07	1.00		0.35	1.00	
Satd. Flow (perm)	248	5030		293	5136		136	4995		664	4957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	715	146	253	1438	48	184	573	157	112	1453	522
RTOR Reduction (vph)	0	24	0	0	3	0	0	38	0	0	50	0
Lane Group Flow (vph)	174	837	0	253	1483	0	184	692	0	112	1925	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.5	30.5		48.5	36.5		66.4	55.5		58.6	51.6	
Effective Green, g (s)	38.5	30.5		48.5	36.5		66.4	55.5		58.6	51.6	
Actuated g/C Ratio	0.30	0.23		0.37	0.28		0.51	0.43		0.45	0.40	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	1180		271	1442		209	2132		360	1968	
v/s Ratio Prot	0.06	0.17		c0.10	c0.29		c0.07	0.14		0.02	c0.39	
v/s Ratio Perm	0.24			0.25			0.38			0.12		
v/c Ratio	1.03	0.71		0.93	1.03		0.88	0.32		0.31	0.98	
Uniform Delay, d1	41.7	45.7		31.8	46.8		36.1	24.8		20.9	38.6	
Progression Factor	1.79	1.45		1.00	1.00		1.00	1.00		1.06	1.12	
Incremental Delay, d2	76.8	2.0		37.0	31.3		32.1	0.4		0.4	13.9	
Delay (s)	151.4	68.3		68.8	78.0		68.2	25.2		22.5	57.2	
Level of Service	F	E		E	E		E	C		C	E	
Approach Delay (s)		82.2			76.7			33.8			55.4	
Approach LOS		F			E			C			E	

Intersection Summary			
HCM Average Control Delay	63.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



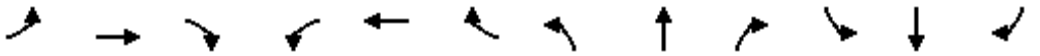
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	889	2085	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5155		1796	1607
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	100	5161	5155		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	966	2266	17	62	66
RTOR Reduction (vph)	0	0	0	0	0	61
Lane Group Flow (vph)	52	966	2283	0	62	5
Turn Type	pm+pt					Perm
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.0	107.0	98.0		9.0	9.0
Effective Green, g (s)	107.0	107.0	98.0		9.0	9.0
Actuated g/C Ratio	0.82	0.82	0.75		0.07	0.07
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	148	4248	3886		124	111
v/s Ratio Prot	c0.01	0.19	c0.44		c0.03	
v/s Ratio Perm	0.28					0.00
v/c Ratio	0.35	0.23	0.59		0.50	0.04
Uniform Delay, d1	6.0	2.5	7.1		58.3	56.5
Progression Factor	7.46	0.04	1.67		1.00	1.00
Incremental Delay, d2	1.4	0.1	0.2		3.1	0.2
Delay (s)	46.1	0.2	12.0		61.5	56.6
Level of Service	D	A	B		E	E
Approach Delay (s)		2.6	12.0		59.0	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



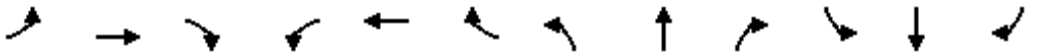
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	893	4	11	2121	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		5.5	5.5				
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00				
Frt		1.00		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		5158		1796	5161		1796	1607				
Flt Permitted		1.00		0.27	1.00		0.76	1.00				
Satd. Flow (perm)		5158		510	5161		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	971	4	12	2305	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	975	0	12	2305	0	9	9	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		36.5		36.5	36.5		17.5	17.5				
Effective Green, g (s)		36.5		36.5	36.5		17.5	17.5				
Actuated g/C Ratio		0.56		0.56	0.56		0.27	0.27				
Clearance Time (s)		5.5		5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2896		286	2898		386	433				
v/s Ratio Prot		0.19			c0.45			0.01				
v/s Ratio Perm				0.02			c0.01					
v/c Ratio		0.34		0.04	0.80		0.02	0.02				
Uniform Delay, d1		7.7		6.4	11.3		17.5	17.4				
Progression Factor		0.52		0.64	1.65		1.00	1.00				
Incremental Delay, d2		0.1		0.1	1.3		0.1	0.1				
Delay (s)		4.1		4.2	19.9		17.6	17.5				
Level of Service		A		A	B		B	B				
Approach Delay (s)		4.1			19.9			17.5			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	887	17	7	2119	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.98		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.96		0.95	1.00	
Satd. Flow (prot)	1796	5147		1796	5160			1776		1796	1607	
Flt Permitted	0.05	1.00		0.28	1.00			0.75		0.80	1.00	
Satd. Flow (perm)	99	5147		528	5160			1394		1508	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	964	18	8	2303	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	1	0	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	981	0	8	2306	0	0	53	0	2	1	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	106.1	106.1		99.8	99.8			9.4		9.4	9.4	
Effective Green, g (s)	106.1	106.1		99.8	99.8			9.4		9.4	9.4	
Actuated g/C Ratio	0.82	0.82		0.77	0.77			0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	111	4201		405	3961			101		109	116	
v/s Ratio Prot	0.00	c0.19			c0.45						0.00	
v/s Ratio Perm	0.09			0.02				c0.04		0.00		
v/c Ratio	0.11	0.23		0.02	0.58			0.52		0.02	0.00	
Uniform Delay, d1	4.6	2.7		3.6	6.3			58.1		56.0	56.0	
Progression Factor	0.53	0.31		0.14	0.39			1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		0.1	0.4			4.5		0.1	0.0	
Delay (s)	2.7	0.9		0.6	2.9			62.6		56.1	56.0	
Level of Service	A	A		A	A			E		E	E	
Approach Delay (s)		0.9			2.9			62.6			56.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



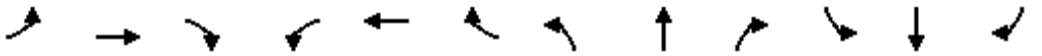
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	682	235	391	1613	117	132	335	112	197	1399	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	4963		1796	5109		1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00		0.12	1.00		0.10	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	265	4963		233	5109		197	3592	1607	845	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	741	255	425	1753	127	143	364	122	214	1521	286
RTOR Reduction (vph)	0	48	0	0	6	0	0	0	86	0	0	46
Lane Group Flow (vph)	74	948	0	425	1874	0	143	364	36	214	1521	240
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22		0.46	0.39		0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	1088		431	2008		134	1058	473	443	1243	556
v/s Ratio Prot	0.02	0.19		c0.20	0.37		c0.05	0.10		0.05	c0.42	
v/s Ratio Perm	0.14			c0.25			0.31		0.02	0.16		0.15
v/c Ratio	0.62	0.87		0.99	0.93		1.07	0.34	0.08	0.48	1.22	0.43
Uniform Delay, d1	39.3	49.0		39.1	37.8		40.9	36.0	33.1	25.1	42.5	32.7
Progression Factor	1.00	1.00		0.90	1.11		1.00	1.00	1.00	0.78	0.74	0.64
Incremental Delay, d2	9.7	9.6		36.0	8.3		96.8	0.2	0.1	0.7	107.0	0.5
Delay (s)	48.9	58.6		71.3	50.2		137.7	36.2	33.2	20.3	138.3	21.4
Level of Service	D	E		E	D		F	D	C	C	F	C
Approach Delay (s)		57.9			54.1			58.7			109.3	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM Average Control Delay	73.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	947	54	23	2336	138	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1029	59	25	2539	150	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1088		2349	515
vC1, stage 1 conf vol					1029	
vC2, stage 2 conf vol					1320	
vCu, unblocked vol			1088		1701	515
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		40	94
cM capacity (veh/h)			637		252	505

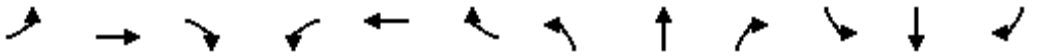
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	515	515	59	25	1270	1270	150	29
Volume Left	0	0	0	25	0	0	150	0
Volume Right	0	0	59	0	0	0	0	29
cSH	1700	1700	1700	637	1700	1700	252	505
Volume to Capacity	0.30	0.30	0.03	0.04	0.75	0.75	0.60	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	26.4	1.4
Control Delay (s)	0.0	0.0	0.0	10.9	0.0	0.0	38.3	12.6
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			34.1	
Approach LOS							D	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		



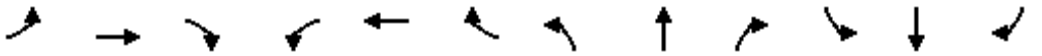
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	758	224	178	1875	117	269	339	99	79	984	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	144	3592	1607	404	3592	1607	207	3592	1607	1007	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	824	243	193	2038	127	292	368	108	86	1070	221
RTOR Reduction (vph)	0	0	101	0	0	57	0	0	67	0	0	11
Lane Group Flow (vph)	37	824	142	193	2038	70	292	368	41	86	1070	211
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	300	1810	810	238	1368	612	252	898	402
v/s Ratio Prot		0.23		0.04	c0.57		c0.12	0.10			0.30	
v/s Ratio Perm	0.26		0.09	0.28		0.04	c0.34		0.03	0.09		0.13
v/c Ratio	0.64	0.57	0.22	0.64	1.13	0.09	1.23	0.27	0.07	0.34	1.19	0.52
Uniform Delay, d1	31.1	30.0	25.3	20.4	32.2	16.7	36.8	27.8	25.6	40.0	48.8	42.1
Progression Factor	0.96	0.94	1.37	1.00	1.00	1.00	1.27	1.03	1.68	1.00	1.00	1.00
Incremental Delay, d2	40.8	1.5	0.7	4.7	64.5	0.2	132.6	0.5	0.2	3.7	97.2	4.8
Delay (s)	70.6	29.8	35.4	25.0	96.7	16.9	179.1	29.0	43.2	43.6	146.0	46.9
Level of Service	E	C	D	C	F	B	F	C	D	D	F	D
Approach Delay (s)		32.4			86.6			88.1			123.7	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM Average Control Delay	85.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	126.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



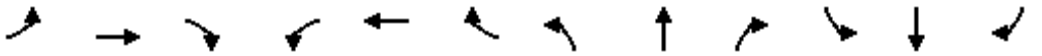
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	768	156	460	2036	46	41	270	85	59	1355	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.11	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	207	3592	1607	211	3592	1607	176	3592	1607	1054	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	835	170	500	2213	50	45	293	92	64	1473	288
RTOR Reduction (vph)	0	0	37	0	0	15	0	0	62	0	0	3
Lane Group Flow (vph)	67	835	133	500	2213	35	45	293	30	64	1473	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1011	452	514	2017	902	58	1188	532	349	1188	532
v/s Ratio Prot		0.23		0.24	c0.62			0.08			c0.41	
v/s Ratio Perm	0.32		0.08	0.30		0.02	0.26		0.02	0.06		0.18
v/c Ratio	1.16	0.83	0.30	0.97	1.10	0.04	0.78	0.25	0.06	0.18	1.24	0.54
Uniform Delay, d1	46.7	43.7	36.6	37.8	28.5	12.8	39.2	31.7	29.7	31.0	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.82	1.58	1.72	0.88	0.59	0.52	1.00	1.00	1.00
Incremental Delay, d2	166.6	7.7	1.7	6.9	44.6	0.0	46.7	0.1	0.0	0.3	115.3	1.0
Delay (s)	213.3	51.4	38.2	38.0	89.7	22.0	81.0	18.7	15.6	31.2	158.8	36.4
Level of Service	F	D	D	D	F	C	F	B	B	C	F	D
Approach Delay (s)		59.4			79.1			24.6			135.0	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM Average Control Delay	88.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	145.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



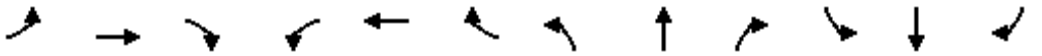
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	778	53	25	2393	79	127	11	45	176	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	558	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	846	58	27	2601	86	138	12	49	191	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	36	0	0	0	51
Lane Group Flow (vph)	51	846	41	27	2601	78	138	25	0	191	38	71
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Effective Green, g (s)	80.3	80.3	80.3	80.3	80.3	80.3	35.7	35.7		21.9	21.9	21.9
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2219	993	345	2219	993	369	457		228	319	271
v/s Ratio Prot		0.24			c0.72		c0.03	0.02			0.02	
v/s Ratio Perm	0.54		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.88	0.38	0.04	0.08	1.17	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	20.8	12.4	9.8	10.0	24.9	10.0	37.1	34.7		52.3	45.9	47.0
Progression Factor	1.46	0.30	0.05	1.56	1.37	1.71	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	67.9	0.3	0.1	0.0	78.0	0.0	0.6	0.1		22.6	0.2	0.5
Delay (s)	98.2	4.0	0.5	15.6	112.0	17.1	37.8	34.8		75.0	46.0	47.5
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		8.9			108.1			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	78.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



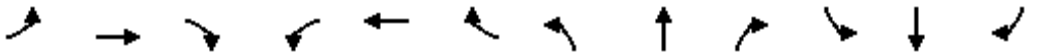
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	177	0	142	0	1269	319	100	783	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				0.76	1.00			1.00	1.00	0.16	1.00	
Satd. Flow (perm)				1432	1607			3592	1607	300	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	192	0	154	0	1379	347	109	851	0
RTOR Reduction (vph)	0	0	0	0	53	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	0	0	192	101	0	0	1379	293	109	851	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				22.7	22.7			92.8	92.8	92.8	92.8	
Effective Green, g (s)				22.7	22.7			92.8	92.8	92.8	92.8	
Actuated g/C Ratio				0.17	0.17			0.71	0.71	0.71	0.71	
Clearance Time (s)				7.0	7.0			7.5	7.5	7.5	7.5	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				250	281			2564	1147	214	2564	
v/s Ratio Prot					0.06			c0.38			0.24	
v/s Ratio Perm				c0.13					0.18	0.36		
v/c Ratio				0.77	0.36			0.54	0.26	0.51	0.33	
Uniform Delay, d1				51.1	47.3			8.6	6.5	8.4	7.0	
Progression Factor				1.00	1.00			0.28	0.23	0.59	0.42	
Incremental Delay, d2				13.2	0.8			0.7	0.5	7.8	0.3	
Delay (s)				64.3	48.0			3.1	2.0	12.7	3.3	
Level of Service				E	D			A	A	B	A	
Approach Delay (s)		0.0			57.1			2.9			4.4	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



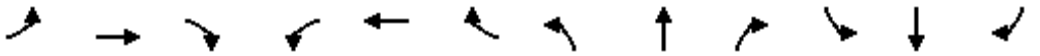
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	3	0	1625	6	6	1022	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Lane Util. Factor				1.00	1.00			0.95	1.00	1.00	0.95	
Frt				1.00	0.85			1.00	0.85	1.00	1.00	
Flt Protected				0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1796	1607			3592	1607	1796	3592	
Flt Permitted				1.00	1.00			1.00	1.00	0.11	1.00	
Satd. Flow (perm)				1891	1607			3592	1607	203	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3	0	3	0	1766	7	7	1111	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	1766	6	7	1111	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Effective Green, g (s)				1.3	1.3			49.7	49.7	49.7	49.7	
Actuated g/C Ratio				0.02	0.02			0.76	0.76	0.76	0.76	
Clearance Time (s)				7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)				3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)				38	32			2746	1229	155	2746	
v/s Ratio Prot					0.00			c0.49			0.31	
v/s Ratio Perm				c0.00					0.00	0.03		
v/c Ratio				0.08	0.00			0.64	0.00	0.05	0.40	
Uniform Delay, d1				31.3	31.2			3.5	1.8	1.9	2.6	
Progression Factor				1.00	1.00			0.16	0.01	0.91	0.76	
Incremental Delay, d2				0.9	0.0			1.0	0.0	0.5	0.4	
Delay (s)				32.2	31.2			1.6	0.0	2.2	2.4	
Level of Service				C	C			A	A	A	A	
Approach Delay (s)		0.0			31.7			1.6			2.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



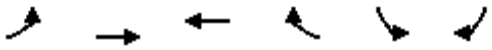
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1631	35	12	1025	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.25	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		472	3592	1607	201	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1773	38	13	1114	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1773	32	13	1114	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		370	2818	1261	158	2818	1261
v/s Ratio Prot		0.00			0.00			c0.49			0.31	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.06		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.63	0.03	0.08	0.40	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	3.0	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.27	2.28	1.40	1.32	1.62	1.61
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.1	0.4	0.0	1.0	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		2.1	7.1	2.2	3.1	3.9	2.5
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			7.0			3.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



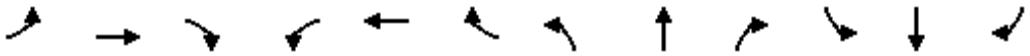
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1541	198	169	845	54	145	1269	363	119	815	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5073		1796	5114		1796	4989		1796	5043	
Flt Permitted	0.14	1.00		0.13	1.00		0.15	1.00		0.09	1.00	
Satd. Flow (perm)	273	5073		242	5114		287	4989		174	5043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1675	215	184	918	59	158	1379	395	129	886	160
RTOR Reduction (vph)	0	13	0	0	6	0	0	39	0	0	19	0
Lane Group Flow (vph)	338	1877	0	184	971	0	158	1735	0	129	1027	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	43.5		39.2	35.7		59.5	48.5		50.5	43.5	
Effective Green, g (s)	43.5	43.5		39.2	35.7		59.5	48.5		50.5	43.5	
Actuated g/C Ratio	0.33	0.33		0.30	0.27		0.46	0.37		0.39	0.33	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1698		169	1404		271	1861		155	1687	
v/s Ratio Prot	c0.15	0.37		c0.07	0.19		0.05	c0.35		c0.04	0.20	
v/s Ratio Perm	c0.26			0.26			0.21			0.28		
v/c Ratio	1.22	1.11		1.09	0.69		0.58	0.93		0.83	0.61	
Uniform Delay, d1	36.4	43.2		56.1	42.2		23.2	39.2		31.4	36.1	
Progression Factor	0.76	0.41		1.00	1.00		1.00	1.00		1.32	0.69	
Incremental Delay, d2	125.8	55.7		94.9	1.5		3.2	10.0		29.1	1.6	
Delay (s)	153.6	73.3		151.1	43.7		26.4	49.2		70.5	26.7	
Level of Service	F	E		F	D		C	D		E	C	
Approach Delay (s)		85.5			60.7			47.3			31.5	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM Average Control Delay	59.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



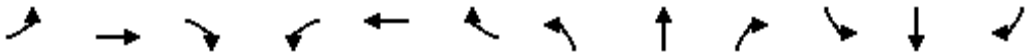
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	2027	1064	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5139		1796	1607
Flt Permitted	0.22	1.00	1.00		0.95	1.00
Satd. Flow (perm)	419	5161	5139		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2203	1157	34	84	51
RTOR Reduction (vph)	0	0	1	0	0	46
Lane Group Flow (vph)	53	2203	1190	0	84	5
Turn Type	Perm					Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	103.9	103.9	103.9		12.1	12.1
Effective Green, g (s)	103.9	103.9	103.9		12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.80		0.09	0.09
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	335	4125	4107		167	150
v/s Ratio Prot		c0.43	0.23		c0.05	
v/s Ratio Perm	0.13					0.00
v/c Ratio	0.16	0.53	0.29		0.50	0.03
Uniform Delay, d1	3.0	4.6	3.4		56.1	53.6
Progression Factor	0.82	1.11	0.45		1.00	1.00
Incremental Delay, d2	0.9	0.4	0.1		2.4	0.1
Delay (s)	3.3	5.5	1.7		58.5	53.7
Level of Service	A	A	A		E	D
Approach Delay (s)		5.4	1.7		56.7	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



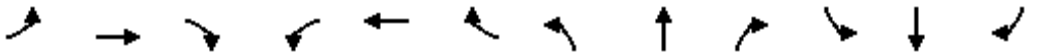
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2000	11	15	1090	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		7.0	7.0				
Lane Util. Factor		0.91		1.00	0.91		1.00	1.00				
Frt		1.00		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		5157		1796	5161		1796	1607				
Flt Permitted		1.00		0.05	1.00		0.76	1.00				
Satd. Flow (perm)		5157		99	5161		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2174	12	16	1185	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	2185	0	16	1185	0	1	10	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		87.6		87.6	87.6		29.9	29.9				
Effective Green, g (s)		87.6		87.6	87.6		29.9	29.9				
Actuated g/C Ratio		0.67		0.67	0.67		0.23	0.23				
Clearance Time (s)		5.5		5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		3475		67	3478		329	370				
v/s Ratio Prot		c0.42			0.23			c0.01				
v/s Ratio Perm				0.16			0.00					
v/c Ratio		0.63		0.24	0.34		0.00	0.03				
Uniform Delay, d1		12.0		8.2	9.0		38.6	38.8				
Progression Factor		0.34		0.39	0.17		1.00	1.00				
Incremental Delay, d2		0.3		1.8	0.1		0.0	0.1				
Delay (s)		4.4		5.0	1.6		38.6	38.9				
Level of Service		A		A	A		D	D				
Approach Delay (s)		4.4			1.7			38.9			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1992	22	12	1070	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1796	5153		1796	5155			1747		1796	1638	
Flt Permitted	0.21	1.00		0.08	1.00			0.79		0.74	1.00	
Satd. Flow (perm)	405	5153		142	5155			1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2165	24	13	1163	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	8	0	0	15	0
Lane Group Flow (vph)	7	2189	0	13	1172	0	0	16	0	12	3	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	109.5	109.5		102.8	102.8			6.0		6.0	6.0	
Effective Green, g (s)	109.5	109.5		102.8	102.8			6.0		6.0	6.0	
Actuated g/C Ratio	0.84	0.84		0.79	0.79			0.05		0.05	0.05	
Clearance Time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	354	4340		112	4076			66		65	76	
v/s Ratio Prot	0.00	c0.42			0.23						0.00	
v/s Ratio Perm	0.02			0.09				c0.01		0.01		
v/c Ratio	0.02	0.50		0.12	0.29			0.25		0.18	0.04	
Uniform Delay, d1	1.8	2.8		3.1	3.7			59.8		59.6	59.2	
Progression Factor	0.61	0.59		0.22	0.18			1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		2.0	0.2			2.0		1.4	0.2	
Delay (s)	1.1	1.8		2.7	0.8			61.8		61.0	59.4	
Level of Service	A	A		A	A			E		E	E	
Approach Delay (s)		1.8			0.8			61.8			60.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	2.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



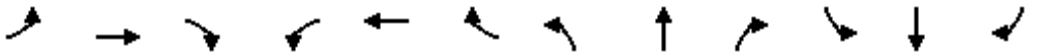
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1564	169	153	850	214	219	1316	352	123	470	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	5086		1796	5005		1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00		0.10	1.00		0.31	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	201	5086		190	5005		591	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1700	184	166	924	233	238	1430	383	134	511	89
RTOR Reduction (vph)	0	10	0	0	33	0	0	0	79	0	0	42
Lane Group Flow (vph)	272	1874	0	166	1124	0	238	1430	304	134	511	47
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	61.3	46.3		50.8	39.8		52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	46.3		50.8	39.8		52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.36		0.39	0.31		0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	1811		210	1532		367	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.37		0.07	0.22		0.07	c0.40		c0.04	0.14	
v/s Ratio Perm	0.30			0.24			0.19		0.19	0.26		0.03
v/c Ratio	0.88	1.03		0.79	0.73		0.65	1.20	0.57	0.98	0.53	0.11
Uniform Delay, d1	33.5	41.9		32.0	40.4		27.3	43.5	35.9	41.9	40.5	35.7
Progression Factor	1.00	1.00		1.68	0.45		1.00	1.00	1.00	0.86	0.89	0.95
Incremental Delay, d2	24.0	30.7		17.8	3.1		3.9	99.9	1.5	69.1	0.5	0.1
Delay (s)	57.4	72.5		71.7	21.1		31.3	143.4	37.4	105.3	36.6	33.9
Level of Service	E	E		E	C		C	F	D	F	D	C
Approach Delay (s)		70.6			27.4			110.6			48.8	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	72.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1925	143	13	1146	26	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2092	155	14	1246	28	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.84	
vC, conflicting volume			2248		2743	1046
vC1, stage 1 conf vol					2092	
vC2, stage 2 conf vol					651	
vCu, unblocked vol			2248		2693	1046
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			94		64	91
cM capacity (veh/h)			226		78	225

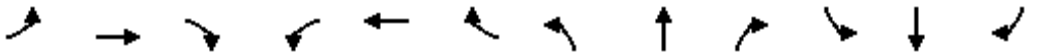
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1046	1046	155	14	623	623	28	21
Volume Left	0	0	0	14	0	0	28	0
Volume Right	0	0	155	0	0	0	0	21
cSH	1700	1700	1700	226	1700	1700	78	225
Volume to Capacity	0.62	0.62	0.09	0.06	0.37	0.37	0.36	0.09
Queue Length 95th (m)	0.0	0.0	0.0	1.5	0.0	0.0	10.6	2.3
Control Delay (s)	0.0	0.0	0.0	22.0	0.0	0.0	75.2	22.6
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.2			53.0	
Approach LOS							F	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		



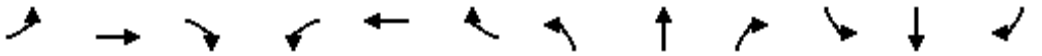
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1808	239	88	893	70	259	621	162	99	435	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.28	1.00	1.00	0.06	1.00	1.00	0.31	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	521	3592	1607	115	3592	1607	588	3592	1607	671	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1965	260	96	971	76	282	675	176	108	473	22
RTOR Reduction (vph)	0	0	46	0	0	29	0	0	77	0	0	16
Lane Group Flow (vph)	39	1965	214	96	971	47	282	675	99	108	473	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	1713	766	155	2017	902	255	1160	519	160	857	383
v/s Ratio Prot		c0.55		c0.03	0.27		c0.06	0.19			0.13	
v/s Ratio Perm	0.07		0.13	0.32		0.03	c0.30		0.06	0.16		0.00
v/c Ratio	0.16	1.15	0.28	0.62	0.48	0.05	1.11	0.58	0.19	0.68	0.55	0.02
Uniform Delay, d1	19.2	34.0	20.5	28.8	17.1	12.9	43.4	36.7	31.7	44.9	43.4	37.8
Progression Factor	0.79	0.91	0.77	1.00	1.00	1.00	0.74	0.80	0.79	1.00	1.00	1.00
Incremental Delay, d2	0.9	71.4	0.6	7.2	0.8	0.1	83.9	1.9	0.7	20.5	2.6	0.1
Delay (s)	16.2	102.3	16.5	36.0	18.0	13.0	116.1	31.1	25.9	65.4	46.0	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		91.0			19.1			51.5			49.2	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	61.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1808	96	105	982	76	208	1098	414	62	398	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.12	1.00	1.00	0.08	1.00	1.00	0.34	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	224	3592	1607	142	3592	1607	643	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1965	104	114	1067	83	226	1193	450	67	433	118
RTOR Reduction (vph)	0	0	29	0	0	49	0	0	81	0	0	90
Lane Group Flow (vph)	224	1965	75	114	1067	34	226	1193	369	67	433	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	1627	728	166	1467	656	313	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.55		0.04	0.30		c0.06	c0.33		0.02	0.12	
v/s Ratio Perm	0.34		0.05	0.28		0.02	0.20		0.23	0.14		0.02
v/c Ratio	0.78	1.21	0.10	0.69	0.73	0.05	0.72	1.17	0.81	0.56	0.50	0.07
Uniform Delay, d1	22.5	35.5	20.4	29.5	32.4	23.2	34.1	46.5	43.3	38.5	42.6	38.1
Progression Factor	1.00	1.00	1.00	1.47	0.61	0.23	1.08	1.06	1.10	1.00	1.00	1.00
Incremental Delay, d2	13.1	99.5	0.3	10.7	3.0	0.1	6.5	85.1	8.3	6.0	0.5	0.1
Delay (s)	35.5	135.1	20.7	53.9	22.6	5.5	43.2	134.2	55.8	44.5	43.1	38.2
Level of Service	D	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		120.2			24.3			104.4			42.3	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	87.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



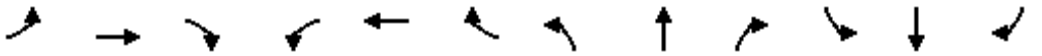
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1882	108	36	940	239	63	40	41	181	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.25	1.00	1.00	0.04	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	476	3592	1607	85	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	2046	117	39	1022	260	68	43	45	197	28	103
RTOR Reduction (vph)	0	0	12	0	0	77	0	11	0	0	0	84
Lane Group Flow (vph)	142	2046	105	39	1022	183	68	77	0	197	28	19
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Effective Green, g (s)	91.6	91.6	91.6	91.6	91.6	91.6	24.4	24.4		24.4	24.4	24.4
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	335	2531	1132	60	2531	1132	262	328		248	355	302
v/s Ratio Prot		c0.57			0.28			0.04			0.01	
v/s Ratio Perm	0.30		0.07	0.46		0.11	0.05			c0.15		0.01
v/c Ratio	0.42	0.81	0.09	0.65	0.40	0.16	0.26	0.23		0.79	0.08	0.06
Uniform Delay, d1	8.1	13.2	6.1	10.5	7.9	6.4	45.1	44.9		50.4	43.5	43.4
Progression Factor	1.46	1.41	1.87	0.93	0.61	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.0	37.5	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.1	18.9	11.4	47.3	5.3	0.6	45.6	45.2		66.3	43.6	43.5
Level of Service	B	B	B	D	A	A	D	D		E	D	D
Approach Delay (s)		18.1			5.6			45.4			57.2	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	118.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix J – Synchro Output
2021 Total Condition

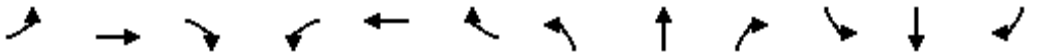
This appendix contains the following outputs in order:

- Scenario A, Total AM;
- Scenario A, Total PM;
- Scenario B, Total AM;
- Scenario B, Total PM.



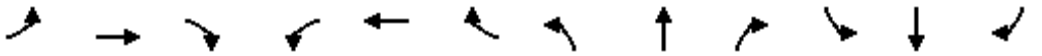
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	14	82	351	4	296	21	408	65	194	1150	8
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1648		1796	1610		1796	3592	1607	1796	3592	1607
Flt Permitted	0.43	1.00		0.69	1.00		0.14	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	814	1648		1304	1610		260	3592	1607	936	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	15	89	382	4	322	23	443	71	211	1250	9
RTOR Reduction (vph)	0	23	0	0	214	0	0	0	34	0	0	2
Lane Group Flow (vph)	33	81	0	382	112	0	23	443	37	211	1250	7
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	34.4	34.4		34.4	34.4		53.8	53.8	53.8	53.8	53.8	53.8
Effective Green, g (s)	34.4	34.4		34.4	34.4		53.8	53.8	53.8	53.8	53.8	53.8
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.52	0.52	0.52	0.52	0.52	0.52
Clearance Time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	552		437	539		136	1882	842	490	1882	842
v/s Ratio Prot		0.05			0.07			0.12			c0.35	
v/s Ratio Perm	0.04			c0.29			0.09		0.02	0.23		0.00
v/c Ratio	0.12	0.15		0.87	0.21		0.17	0.24	0.04	0.43	0.66	0.01
Uniform Delay, d1	23.7	23.9		32.1	24.4		12.8	13.3	11.9	15.0	17.9	11.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		17.3	0.2		2.7	0.3	0.1	2.7	1.9	0.0
Delay (s)	23.9	24.0		49.5	24.6		15.4	13.6	12.0	17.8	19.7	11.7
Level of Service	C	C		D	C		B	B	B	B	B	B
Approach Delay (s)		24.0			38.0			13.4			19.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



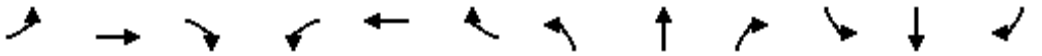
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	48	3	0	3	12	595	1	1	1730	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt		0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1607		1796	1607		1796	3592	1607	1796	3592	
Flt Permitted		1.00		0.77	1.00		0.10	1.00	1.00	0.41	1.00	
Satd. Flow (perm)		1607		1454	1607		180	3592	1607	768	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	52	3	0	3	13	647	1	1	1880	0
RTOR Reduction (vph)	0	11	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	41	0	3	0	0	13	647	1	1	1880	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		5.2		5.2	5.2		75.9	75.9	75.9	75.9	75.9	
Effective Green, g (s)		5.2		5.2	5.2		75.9	75.9	75.9	75.9	75.9	
Actuated g/C Ratio		0.06		0.06	0.06		0.82	0.82	0.82	0.82	0.82	
Clearance Time (s)		5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		91		82	91		148	2960	1324	633	2960	
v/s Ratio Prot		c0.03			0.00			0.18			c0.52	
v/s Ratio Perm				0.00			0.07		0.00	0.00		
v/c Ratio		0.45		0.04	0.00		0.09	0.22	0.00	0.00	0.64	
Uniform Delay, d1		42.1		41.1	41.0		1.5	1.7	1.4	1.4	3.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.5		0.2	0.0		1.2	0.2	0.0	0.0	1.1	
Delay (s)		45.5		41.3	41.0		2.7	1.9	1.4	1.4	4.0	
Level of Service		D		D	D		A	A	A	A	A	
Approach Delay (s)		45.5			41.1			1.9			4.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



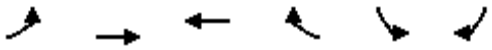
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	608	4	1	1781	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	0.95	1.00		0.95	1.00		0.09	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1800	1607		1800	1607		170	3592	1607	757	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	661	4	1	1936	3
RTOR Reduction (vph)	0	9	0	0	7	0	0	0	1	0	0	0
Lane Group Flow (vph)	17	12	0	3	0	0	1	661	3	1	1936	3
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	4.2	4.2		4.2	4.2		74.8	74.8	74.8	74.8	74.8	74.8
Effective Green, g (s)	4.2	4.2		4.2	4.2		74.8	74.8	74.8	74.8	74.8	74.8
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.83	0.83	0.83	0.83	0.83	0.83
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	75		84	75		141	2985	1336	629	2985	1336
v/s Ratio Prot		0.01			0.00			0.18			c0.54	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.17		0.04	0.00		0.01	0.22	0.00	0.00	0.65	0.00
Uniform Delay, d1	41.3	41.2		41.0	40.9		1.3	1.6	1.3	1.3	2.8	1.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.0		0.2	0.0		0.1	0.2	0.0	0.0	1.1	0.0
Delay (s)	42.5	42.3		41.1	40.9		1.4	1.7	1.3	1.3	3.9	1.3
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		42.4			41.0			1.7			3.9	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



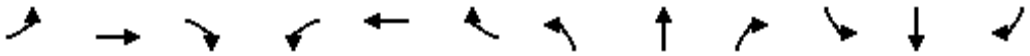
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	629	134	233	1261	44	169	504	144	103	1309	534
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.10	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	122	3592	1607	628	3592	1607	195	3592	1607	609	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	684	146	253	1371	48	184	548	157	112	1423	580
RTOR Reduction (vph)	0	0	52	0	0	10	0	0	76	0	0	97
Lane Group Flow (vph)	189	684	94	253	1371	38	184	548	81	112	1423	483
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Effective Green, g (s)	73.1	62.1	62.1	67.1	59.1	59.1	48.2	38.8	38.8	45.6	37.5	37.5
Actuated g/C Ratio	0.52	0.44	0.44	0.48	0.42	0.42	0.34	0.28	0.28	0.33	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	1593	713	368	1516	678	175	995	445	267	962	430
v/s Ratio Prot	c0.08	0.19		0.04	0.38		c0.07	0.15		0.02	c0.40	
v/s Ratio Perm	c0.43		0.06	0.29		0.02	0.29		0.05	0.11		0.30
v/c Ratio	0.97	0.43	0.13	0.69	0.90	0.06	1.05	0.55	0.18	0.42	1.48	1.12
Uniform Delay, d1	41.9	26.8	23.0	25.6	37.8	23.9	39.4	43.2	38.5	34.4	51.2	51.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.9	0.2	0.1	5.3	8.0	0.0	82.3	2.2	0.9	1.1	221.3	81.1
Delay (s)	96.7	27.0	23.1	30.9	45.8	24.0	121.7	45.4	39.4	35.5	272.5	132.4
Level of Service	F	C	C	C	D	C	F	D	D	D	F	F
Approach Delay (s)		39.3			42.9			60.1			221.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	111.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



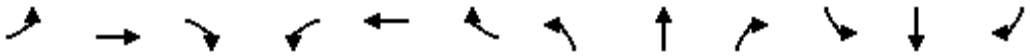
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	863	2041	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.05	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	95	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	938	2218	17	62	66
RTOR Reduction (vph)	0	0	0	1	0	14
Lane Group Flow (vph)	52	938	2218	16	62	52
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	99.0	99.0	99.0	99.0	10.9	10.9
Effective Green, g (s)	99.0	99.0	99.0	99.0	10.9	10.9
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.09	0.09
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	76	2870	2870	1284	158	141
v/s Ratio Prot		0.26	c0.62		c0.03	
v/s Ratio Perm	0.55			0.01		0.03
v/c Ratio	0.68	0.33	0.77	0.01	0.39	0.37
Uniform Delay, d1	5.5	3.4	6.5	2.5	53.4	53.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.0	0.3	2.1	0.0	1.6	1.6
Delay (s)	45.6	3.7	8.6	2.5	55.0	54.9
Level of Service	D	A	A	A	D	D
Approach Delay (s)		5.9	8.6		54.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	123.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



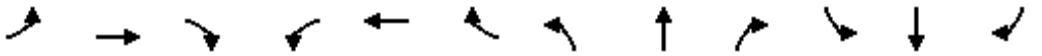
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	867	4	11	2075	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.28	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	527	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	942	4	12	2255	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	942	3	12	2255	0	9	6	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		61.2	61.2	61.2	61.2		16.5	16.5				
Effective Green, g (s)		61.2	61.2	61.2	61.2		16.5	16.5				
Actuated g/C Ratio		0.69	0.69	0.69	0.69		0.19	0.19				
Clearance Time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2478	1109	364	2478		266	299				
v/s Ratio Prot		0.26			c0.63			0.00				
v/s Ratio Perm			0.00	0.02			c0.01					
v/c Ratio		0.38	0.00	0.03	0.91		0.03	0.02				
Uniform Delay, d1		5.8	4.3	4.4	11.5		29.6	29.5				
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00				
Incremental Delay, d2		0.1	0.0	0.0	5.5		0.2	0.1				
Delay (s)		5.9	4.3	4.4	17.0		29.8	29.6				
Level of Service		A	A	A	B		C	C				
Approach Delay (s)		5.9			16.9			29.7			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	861	17	7	2073	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00		0.75		0.72	1.00	
Satd. Flow (perm)	89	3592	1607	566	3592	1607		1394		1358	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	936	18	8	2253	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	4	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	936	14	8	2253	3	0	53	0	2	1	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	92.7	92.7	92.7	92.7	92.7	92.7		8.8		8.8	8.8	
Effective Green, g (s)	92.7	92.7	92.7	92.7	92.7	92.7		8.8		8.8	8.8	
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80	0.80		0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	71	2871	1284	452	2871	1284		106		103	122	
v/s Ratio Prot		0.26			c0.63						0.00	
v/s Ratio Perm	0.13		0.01	0.01		0.00		c0.04		0.00		
v/c Ratio	0.17	0.33	0.01	0.02	0.78	0.00		0.50		0.02	0.00	
Uniform Delay, d1	2.7	3.2	2.4	2.4	6.3	2.3		51.5		49.6	49.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	5.1	0.3	0.0	0.1	2.2	0.0		3.6		0.1	0.0	
Delay (s)	7.8	3.5	2.4	2.4	8.5	2.3		55.1		49.7	49.6	
Level of Service	A	A	A	A	A	A		E		D	D	
Approach Delay (s)		3.5			8.5			55.1			49.6	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



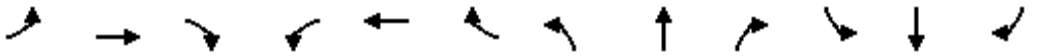
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	659	235	409	1573	117	132	308	117	197	1279	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.25	1.00	1.00	0.12	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	156	3592	1607	477	3592	1607	220	3592	1607	867	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	716	255	445	1710	127	143	335	127	214	1390	286
RTOR Reduction (vph)	0	0	80	0	0	23	0	0	93	0	0	12
Lane Group Flow (vph)	74	716	175	445	1710	104	143	335	34	214	1390	274
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	48.5	48.5	48.5	64.5	64.5	64.5	39.9	34.4	34.4	49.5	40.0	40.0
Effective Green, g (s)	48.5	48.5	48.5	64.5	64.5	64.5	39.9	34.4	34.4	49.5	40.0	40.0
Actuated g/C Ratio	0.37	0.37	0.37	0.50	0.50	0.50	0.31	0.26	0.26	0.38	0.31	0.31
Clearance Time (s)	8.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1340	600	358	1782	797	134	950	425	409	1105	494
v/s Ratio Prot		0.20		c0.11	0.48		c0.05	0.09		0.04	c0.39	
v/s Ratio Perm	0.47		0.11	c0.50		0.06	0.28		0.02	0.15		0.17
v/c Ratio	1.28	0.53	0.29	1.24	0.96	0.13	1.07	0.35	0.08	0.52	1.26	0.56
Uniform Delay, d1	40.8	31.9	28.7	28.5	31.5	17.6	43.1	38.8	35.9	28.5	45.0	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	209.3	1.5	1.2	130.9	13.7	0.3	96.8	0.2	0.1	1.2	123.5	1.4
Delay (s)	250.0	33.4	29.9	159.4	45.2	18.0	139.9	39.0	36.0	29.7	168.5	38.9
Level of Service	F	C	C	F	D	B	F	D	D	C	F	D
Approach Delay (s)		47.9			65.9			62.2			133.2	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	84.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	134.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	917	54	24	2249	138	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	997	59	26	2445	150	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.54	
vC, conflicting volume			1055		2271	498
vC1, stage 1 conf vol					997	
vC2, stage 2 conf vol					1274	
vCu, unblocked vol			1055		1658	498
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		44	93
cM capacity (veh/h)			655		266	517

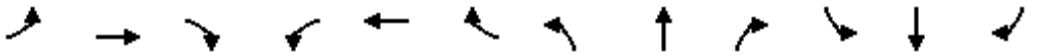
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	498	498	59	26	1222	1222	150	34
Volume Left	0	0	0	26	0	0	150	0
Volume Right	0	0	59	0	0	0	0	34
cSH	1700	1700	1700	655	1700	1700	266	517
Volume to Capacity	0.29	0.29	0.03	0.04	0.72	0.72	0.56	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	24.2	1.6
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	34.7	12.4
Lane LOS				B			D	B
Approach Delay (s)	0.0			0.1			30.6	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		



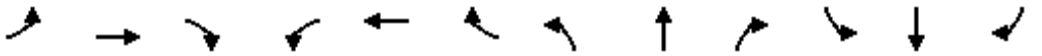
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	735	229	179	1789	117	291	317	104	79	909	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	170	3592	1607	395	3592	1607	216	3592	1607	1030	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	799	249	195	1945	127	316	345	113	86	988	221
RTOR Reduction (vph)	0	0	116	0	0	65	0	0	66	0	0	14
Lane Group Flow (vph)	37	799	133	195	1945	62	316	345	47	86	988	207
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Effective Green, g (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Actuated g/C Ratio	0.37	0.37	0.37	0.46	0.46	0.46	0.41	0.41	0.41	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	1332	596	264	1661	743	280	1482	663	266	928	415
v/s Ratio Prot		0.22		0.04	c0.54		c0.14	0.10			0.28	
v/s Ratio Perm	0.22		0.08	0.30		0.04	c0.33		0.03	0.08		0.13
v/c Ratio	0.59	0.60	0.22	0.74	1.17	0.08	1.13	0.23	0.07	0.32	1.06	0.50
Uniform Delay, d1	30.4	30.5	25.9	23.4	32.2	18.0	34.8	22.9	21.3	36.0	44.5	37.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.3	2.0	0.9	10.3	83.8	0.2	93.0	0.4	0.2	3.2	48.3	4.2
Delay (s)	64.7	32.5	26.8	33.7	116.0	18.3	127.8	23.3	21.5	39.2	92.8	42.1
Level of Service	E	C	C	C	F	B	F	C	C	D	F	D
Approach Delay (s)		32.3			103.5			65.7			80.6	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM Average Control Delay	78.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



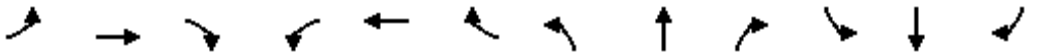
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	738	156	460	1965	46	41	254	85	59	1250	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.10	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	180	3592	1607	395	3592	1607	199	3592	1607	1100	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	802	170	500	2136	50	45	276	92	64	1359	288
RTOR Reduction (vph)	0	0	7	0	0	18	0	0	60	0	0	3
Lane Group Flow (vph)	67	802	163	500	2136	32	45	276	32	64	1359	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	42.0	42.0	42.0	58.0	58.0	58.0	38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	42.0	42.0	42.0	58.0	58.0	58.0	38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.38	0.38	0.38	0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	69	1371	614	348	1894	847	69	1241	555	380	1241	555
v/s Ratio Prot		0.22		c0.14	0.59			0.08			c0.38	
v/s Ratio Perm	0.37		0.10	c0.61		0.02	0.23		0.02	0.06		0.18
v/c Ratio	0.97	0.58	0.26	1.44	1.13	0.04	0.65	0.22	0.06	0.17	1.10	0.51
Uniform Delay, d1	33.4	27.1	23.4	21.1	26.0	12.5	30.4	25.5	24.0	25.0	36.0	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	100.4	1.8	1.1	212.3	64.9	0.1	20.0	0.1	0.0	0.2	55.6	0.8
Delay (s)	133.8	28.9	24.4	233.4	90.9	12.6	50.4	25.6	24.1	25.2	91.6	29.5
Level of Service	F	C	C	F	F	B	D	C	C	C	F	C
Approach Delay (s)		34.9			116.0			28.0			78.7	
Approach LOS		C			F			C			E	

Intersection Summary			
HCM Average Control Delay	84.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



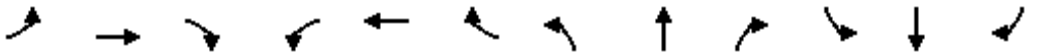
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	747	53	25	2300	81	127	11	45	177	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.33	1.00	1.00	0.73	1.00		0.72	1.00	1.00
Satd. Flow (perm)	101	3592	1607	620	3592	1607	1384	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	812	58	27	2500	88	138	12	49	192	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	40	0	0	0	3
Lane Group Flow (vph)	51	812	41	27	2500	80	138	21	0	192	38	119
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	75.2	75.2	75.2	75.2	75.2	75.2	20.7	20.7		20.7	20.7	20.7
Effective Green, g (s)	75.2	75.2	75.2	75.2	75.2	75.2	20.7	20.7		20.7	20.7	20.7
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	69	2458	1100	424	2458	1100	261	313		255	356	303
v/s Ratio Prot		0.23			c0.70			0.01			0.02	
v/s Ratio Perm	0.51		0.03	0.04		0.05	0.10			c0.14		0.07
v/c Ratio	0.74	0.33	0.04	0.06	1.02	0.07	0.53	0.07		0.75	0.11	0.39
Uniform Delay, d1	11.1	7.1	5.6	5.7	17.4	5.8	40.2	36.7		42.2	36.9	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	51.4	0.4	0.1	0.3	22.6	0.1	1.9	0.1		11.9	0.1	0.8
Delay (s)	62.5	7.4	5.7	6.0	39.9	5.9	42.1	36.8		54.0	37.1	39.9
Level of Service	E	A	A	A	D	A	D	D		D	D	D
Approach Delay (s)		10.4			38.4			40.5			47.3	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



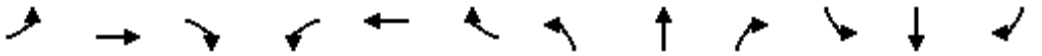
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	8	45	168	15	136	84	1171	319	100	725	31
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1651		1796	1635		1796	3592	1607	1796	3592	1607
Flt Permitted	0.62	1.00		0.72	1.00		0.34	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1175	1651		1360	1635		644	3592	1607	336	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	9	49	183	16	148	91	1273	347	109	788	34
RTOR Reduction (vph)	0	39	0	0	49	0	0	0	68	0	0	11
Lane Group Flow (vph)	18	19	0	183	115	0	91	1273	279	109	788	23
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	19.9	19.9		18.4	18.4		64.9	64.9	64.9	64.9	64.9	64.9
Effective Green, g (s)	19.9	19.9		18.4	18.4		64.9	64.9	64.9	64.9	64.9	64.9
Actuated g/C Ratio	0.20	0.20		0.19	0.19		0.66	0.66	0.66	0.66	0.66	0.66
Clearance Time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	239	336		256	308		427	2384	1066	223	2384	1066
v/s Ratio Prot		0.01			0.07			c0.35			0.22	
v/s Ratio Perm	0.02			c0.13			0.14		0.17	0.32		0.01
v/c Ratio	0.08	0.06		0.71	0.37		0.21	0.53	0.26	0.49	0.33	0.02
Uniform Delay, d1	31.5	31.4		37.2	34.7		6.4	8.6	6.7	8.2	7.1	5.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		9.1	0.8		1.1	0.9	0.6	7.5	0.4	0.0
Delay (s)	31.6	31.5		46.4	35.4		7.6	9.4	7.3	15.7	7.5	5.7
Level of Service	C	C		D	D		A	A	A	B	A	A
Approach Delay (s)		31.5			41.2			8.9			8.4	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	14.5
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



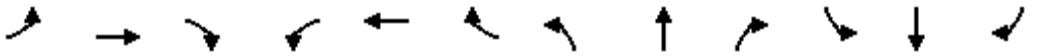
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	26	3	0	3	49	1574	6	6	982	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt		0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1607		1796	1607		1796	3592	1607	1796	3592	
Flt Permitted		1.00		1.00	1.00		0.27	1.00	1.00	0.12	1.00	
Satd. Flow (perm)		1607		1891	1607		504	3592	1607	234	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	28	3	0	3	53	1711	7	7	1067	0
RTOR Reduction (vph)	0	27	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1	0	3	0	0	53	1711	6	7	1067	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		2.3		2.3	2.3		80.5	80.5	80.5	80.5	80.5	
Effective Green, g (s)		2.3		2.3	2.3		80.5	80.5	80.5	80.5	80.5	
Actuated g/C Ratio		0.02		0.02	0.02		0.83	0.83	0.83	0.83	0.83	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		38		45	38		419	2987	1336	195	2987	
v/s Ratio Prot		0.00			0.00			c0.48			0.30	
v/s Ratio Perm				c0.00			0.11		0.00	0.03		
v/c Ratio		0.02		0.07	0.00		0.13	0.57	0.00	0.04	0.36	
Uniform Delay, d1		46.1		46.2	46.1		1.5	2.6	1.4	1.4	2.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2		0.6	0.0		0.6	0.8	0.0	0.3	0.3	
Delay (s)		46.3		46.8	46.1		2.2	3.4	1.4	1.8	2.3	
Level of Service		D		D	D		A	A	A	A	A	
Approach Delay (s)		46.3			46.5			3.4			2.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



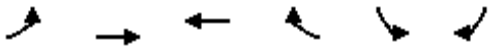
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1628	35	12	1011	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.26	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		483	3592	1607	212	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1770	38	13	1099	17
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	2	0	0	2
Lane Group Flow (vph)	9	0	0	18	3	0	16	1770	36	13	1099	15
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	2.8	2.8		2.8	2.8		62.5	62.5	62.5	62.5	62.5	62.5
Effective Green, g (s)	2.8	2.8		2.8	2.8		62.5	62.5	62.5	62.5	62.5	62.5
Actuated g/C Ratio	0.04	0.04		0.04	0.04		0.82	0.82	0.82	0.82	0.82	0.82
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	69	59		69	59		396	2942	1316	174	2942	1316
v/s Ratio Prot		0.00			0.00			c0.49			0.31	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.06		0.01
v/c Ratio	0.13	0.01		0.26	0.05		0.04	0.60	0.03	0.07	0.37	0.01
Uniform Delay, d1	35.6	35.4		35.7	35.5		1.3	2.5	1.3	1.3	1.8	1.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0		2.0	0.4		0.2	0.9	0.0	0.8	0.4	0.0
Delay (s)	36.4	35.5		37.8	35.8		1.5	3.4	1.3	2.2	2.2	1.3
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		35.9			37.2			3.3			2.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



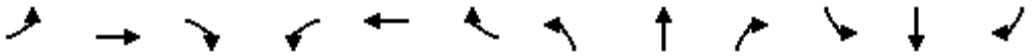
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	365	1470	198	169	809	54	145	1252	363	119	795	176
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.23	1.00	1.00	0.06	1.00	1.00	0.11	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	428	3592	1607	119	3592	1607	202	3592	1607	202	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	1598	215	184	879	59	158	1361	395	129	864	191
RTOR Reduction (vph)	0	0	33	0	0	19	0	0	78	0	0	59
Lane Group Flow (vph)	397	1598	182	184	879	40	158	1361	317	129	864	132
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	71.5	63.5	63.5	71.5	63.5	63.5	45.5	37.5	37.5	45.5	37.5	37.5
Effective Green, g (s)	71.5	63.5	63.5	71.5	63.5	63.5	45.5	37.5	37.5	45.5	37.5	37.5
Actuated g/C Ratio	0.51	0.45	0.45	0.51	0.45	0.45	0.32	0.27	0.27	0.32	0.27	0.27
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1629	729	157	1629	729	157	962	430	157	962	430
v/s Ratio Prot	c0.08	0.44		0.07	0.24		c0.06	c0.38		0.05	0.24	
v/s Ratio Perm	c0.61		0.11	0.53		0.03	0.27		0.20	0.22		0.08
v/c Ratio	1.34	0.98	0.25	1.17	0.54	0.06	1.01	1.41	0.74	0.82	0.90	0.31
Uniform Delay, d1	32.1	37.7	23.6	40.4	27.7	21.4	41.1	51.2	46.8	38.7	49.4	40.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	172.6	17.9	0.2	125.5	0.3	0.0	73.5	192.8	10.8	27.9	12.9	1.8
Delay (s)	204.7	55.5	23.8	165.9	28.0	21.5	114.6	244.1	57.6	66.6	62.3	42.7
Level of Service	F	E	C	F	C	C	F	F	E	E	E	D
Approach Delay (s)		79.2			50.3			194.9			59.6	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	105.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



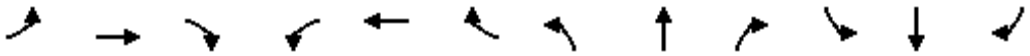
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1988	1045	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	444	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2161	1136	34	84	51
RTOR Reduction (vph)	0	0	0	5	0	46
Lane Group Flow (vph)	53	2161	1136	29	84	5
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	95.0	95.0	95.0	95.0	11.7	11.7
Effective Green, g (s)	95.0	95.0	95.0	95.0	11.7	11.7
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.10	0.10
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	349	2827	2827	1265	174	156
v/s Ratio Prot		c0.60	0.32		c0.05	
v/s Ratio Perm	0.12			0.02		0.00
v/c Ratio	0.15	0.76	0.40	0.02	0.48	0.03
Uniform Delay, d1	3.1	6.9	4.0	2.8	51.6	49.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.0	0.4	0.0	2.1	0.1
Delay (s)	4.0	8.9	4.4	2.8	53.7	49.5
Level of Service	A	A	A	A	D	D
Approach Delay (s)		8.8	4.4		52.1	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



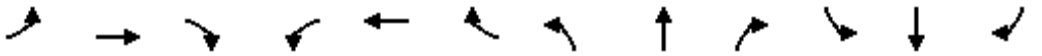
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1962	11	15	1070	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.06	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	106	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2133	12	16	1163	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	2133	10	16	1163	0	1	14	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		71.1	71.1	71.1	71.1		21.1	21.1				
Effective Green, g (s)		71.1	71.1	71.1	71.1		21.1	21.1				
Actuated g/C Ratio		0.68	0.68	0.68	0.68		0.20	0.20				
Clearance Time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2439	1091	72	2439		289	324				
v/s Ratio Prot		c0.59			0.32			c0.01				
v/s Ratio Perm			0.01	0.15			0.00					
v/c Ratio		0.87	0.01	0.22	0.48		0.00	0.04				
Uniform Delay, d1		13.3	5.4	6.3	8.0		33.4	33.7				
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00				
Incremental Delay, d2		3.8	0.0	1.6	0.1		0.0	0.3				
Delay (s)		17.1	5.4	7.9	8.1		33.4	33.9				
Level of Service		B	A	A	A		C	C				
Approach Delay (s)		17.0			8.1			33.9			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	104.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1955	22	12	1051	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747		1796	1638	
Flt Permitted	0.24	1.00	1.00	0.07	1.00	1.00		0.79		0.74	1.00	
Satd. Flow (perm)	454	3592	1607	124	3592	1607		1424		1402	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2125	24	13	1142	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	8	0	0	15	0
Lane Group Flow (vph)	7	2125	22	13	1142	8	0	16	0	12	3	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	94.3	94.3	94.3	94.3	94.3	94.3		5.8		5.8	5.8	
Effective Green, g (s)	94.3	94.3	94.3	94.3	94.3	94.3		5.8		5.8	5.8	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.82	0.82		0.05		0.05	0.05	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	374	2956	1322	102	2956	1322		72		71	83	
v/s Ratio Prot		c0.59			0.32						0.00	
v/s Ratio Perm	0.02		0.01	0.10		0.01		c0.01		0.01		
v/c Ratio	0.02	0.72	0.02	0.13	0.39	0.01		0.23		0.17	0.03	
Uniform Delay, d1	1.8	4.4	1.8	2.0	2.6	1.8		52.2		52.1	51.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.5	0.0	2.6	0.4	0.0		1.6		1.1	0.2	
Delay (s)	1.9	5.9	1.8	4.6	3.0	1.8		53.9		53.2	51.9	
Level of Service	A	A	A	A	A	A		D		D	D	
Approach Delay (s)		5.9			3.0			53.9			52.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	114.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



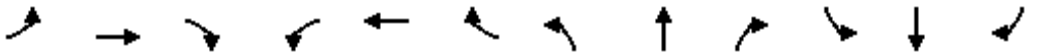
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1527	169	163	830	214	219	1204	370	123	437	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00	0.40	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	350	3592	1607	151	3592	1607	760	3592	1607	189	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1660	184	177	902	233	238	1309	402	134	475	89
RTOR Reduction (vph)	0	0	58	0	0	80	0	0	91	0	0	46
Lane Group Flow (vph)	272	1660	126	177	902	153	238	1309	311	134	475	43
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Effective Green, g (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Actuated g/C Ratio	0.45	0.38	0.38	0.45	0.38	0.38	0.37	0.31	0.31	0.37	0.31	0.31
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	1382	618	169	1382	618	344	1105	494	169	1105	494
v/s Ratio Prot	c0.07	c0.46		0.06	0.25		0.04	c0.36		c0.05	0.13	
v/s Ratio Perm	0.43		0.08	0.40		0.10	0.21		0.19	0.24		0.03
v/c Ratio	1.11	1.20	0.20	1.05	0.65	0.25	0.69	1.18	0.63	0.79	0.43	0.09
Uniform Delay, d1	32.6	40.0	26.7	34.2	32.9	27.2	32.7	45.0	38.6	33.3	35.9	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	90.3	97.7	0.7	82.3	2.4	1.0	5.9	92.5	2.6	22.0	0.3	0.1
Delay (s)	122.8	137.7	27.5	116.5	35.3	28.2	38.6	137.5	41.3	55.3	36.2	32.1
Level of Service	F	F	C	F	D	C	D	F	D	E	D	C
Approach Delay (s)		126.2			45.0			105.6			39.3	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	92.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1861	143	17	1112	26	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2023	155	18	1209	28	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.83	
vC, conflicting volume			2178		2664	1011
vC1, stage 1 conf vol					2023	
vC2, stage 2 conf vol					641	
vCu, unblocked vol			2178		2597	1011
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			92		67	90
cM capacity (veh/h)			241		85	237

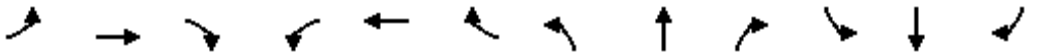
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1011	1011	155	18	604	604	28	23
Volume Left	0	0	0	18	0	0	28	0
Volume Right	0	0	155	0	0	0	0	23
cSH	1700	1700	1700	241	1700	1700	85	237
Volume to Capacity	0.59	0.59	0.09	0.08	0.36	0.36	0.33	0.10
Queue Length 95th (m)	0.0	0.0	0.0	1.9	0.0	0.0	9.6	2.4
Control Delay (s)	0.0	0.0	0.0	21.2	0.0	0.0	66.8	21.8
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.3			46.7	
Approach LOS							E	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		



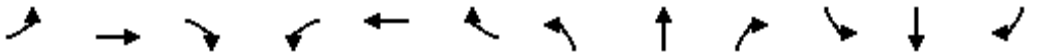
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1729	261	93	863	70	271	584	165	99	411	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.29	1.00	1.00	0.07	1.00	1.00	0.35	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	543	3592	1607	135	3592	1607	669	3592	1607	777	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1879	284	101	938	76	295	635	179	108	447	22
RTOR Reduction (vph)	0	0	56	0	0	36	0	0	86	0	0	16
Lane Group Flow (vph)	39	1879	228	101	938	40	295	635	93	108	447	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	52.0	52.0	52.0	63.0	63.0	63.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.43	0.43	0.43	0.52	0.52	0.52	0.35	0.35	0.35	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	1557	696	168	1886	844	300	1257	562	201	928	415
v/s Ratio Prot		c0.52		c0.04	0.26		c0.06	0.18			0.12	
v/s Ratio Perm	0.07		0.14	0.28		0.02	c0.29		0.06	0.14		0.00
v/c Ratio	0.17	1.21	0.33	0.60	0.50	0.05	0.98	0.51	0.17	0.54	0.48	0.01
Uniform Delay, d1	20.8	34.0	22.5	26.2	18.3	13.9	38.0	30.8	26.9	38.3	37.7	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	99.4	1.3	5.9	0.9	0.1	47.1	1.5	0.6	9.9	1.8	0.1
Delay (s)	22.3	133.4	23.7	32.2	19.3	14.0	85.1	32.2	27.5	48.3	39.5	33.2
Level of Service	C	F	C	C	B	B	F	C	C	D	D	C
Approach Delay (s)		117.3			20.1			45.5			40.9	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	70.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



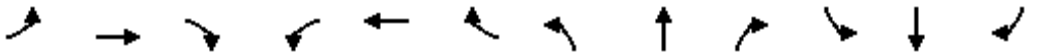
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1750	96	105	951	76	208	1018	414	62	379	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.25	1.00	1.00	0.07	1.00	1.00	0.35	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	481	3592	1607	129	3592	1607	670	3592	1607	261	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1902	104	114	1034	83	226	1107	450	67	412	118
RTOR Reduction (vph)	0	0	33	0	0	5	0	0	86	0	0	73
Lane Group Flow (vph)	224	1902	71	114	1034	78	226	1107	364	67	412	45
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	53.5	53.5	53.5	65.5	65.5	65.5	40.0	40.0	40.0	29.0	29.0	29.0
Effective Green, g (s)	53.5	53.5	53.5	65.5	65.5	65.5	40.0	40.0	40.0	29.0	29.0	29.0
Actuated g/C Ratio	0.45	0.45	0.45	0.55	0.55	0.55	0.33	0.33	0.33	0.24	0.24	0.24
Clearance Time (s)	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	1608	719	168	1969	881	281	1202	538	63	872	390
v/s Ratio Prot		c0.53		0.04	c0.29		0.04	c0.31			0.11	
v/s Ratio Perm	0.47		0.04	0.33		0.05	0.23		0.23	c0.26		0.03
v/c Ratio	1.04	1.18	0.10	0.68	0.53	0.09	0.80	0.92	0.68	1.06	0.47	0.11
Uniform Delay, d1	33.0	33.0	19.1	26.3	17.1	12.8	36.1	38.2	34.2	45.2	38.7	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.8	89.0	0.3	10.4	1.0	0.2	15.3	11.5	3.4	132.1	0.4	0.1
Delay (s)	105.8	122.0	19.4	36.6	18.1	13.0	51.4	49.7	37.6	177.3	39.1	35.4
Level of Service	F	F	B	D	B	B	D	D	D	F	D	D
Approach Delay (s)		115.6			19.5			46.9			53.9	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	68.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	28.0
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



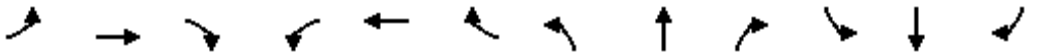
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1814	108	36	908	240	63	40	41	183	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1668	
Flt Permitted	0.26	1.00	1.00	0.05	1.00	1.00	0.67	1.00		0.70	1.00	
Satd. Flow (perm)	495	3592	1607	101	3592	1607	1272	1746		1323	1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1972	117	39	987	261	68	43	45	199	28	103
RTOR Reduction (vph)	0	0	14	0	0	64	0	12	0	0	83	0
Lane Group Flow (vph)	142	1972	103	39	987	197	68	76	0	199	48	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	75.2	75.2	75.2	75.2	75.2	75.2	21.5	21.5		21.5	21.5	
Effective Green, g (s)	75.2	75.2	75.2	75.2	75.2	75.2	21.5	21.5		21.5	21.5	
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.19	0.19		0.19	0.19	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	336	2440	1092	69	2440	1092	247	339		257	324	
v/s Ratio Prot		c0.55			0.27			0.04			0.03	
v/s Ratio Perm	0.29		0.06	0.39		0.12	0.05			c0.15		
v/c Ratio	0.42	0.81	0.09	0.57	0.40	0.18	0.28	0.22		0.77	0.15	
Uniform Delay, d1	8.0	12.6	6.1	9.2	7.8	6.5	38.0	37.6		42.3	37.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	3.0	0.2	29.5	0.5	0.4	0.6	0.3		13.5	0.2	
Delay (s)	11.8	15.6	6.3	38.7	8.3	6.9	38.6	37.9		55.8	37.2	
Level of Service	B	B	A	D	A	A	D	D		E	D	
Approach Delay (s)		14.9			9.0			38.2			48.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	123.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



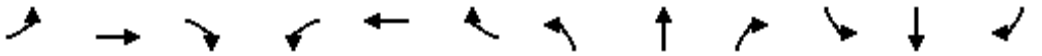
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	14	82	351	4	296	21	408	65	194	1150	8
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1648		1796	1610		1796	3592	1607	1796	3592	1607
Flt Permitted	0.41	1.00		0.69	1.00		0.14	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	779	1648		1304	1610		265	3592	1607	920	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	15	89	382	4	322	23	443	71	211	1250	9
RTOR Reduction (vph)	0	20	0	0	212	0	0	0	32	0	0	2
Lane Group Flow (vph)	33	84	0	382	114	0	23	443	39	211	1250	7
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	44.4	44.4		44.4	44.4		71.1	71.1	71.1	71.1	71.1	71.1
Effective Green, g (s)	44.4	44.4		44.4	44.4		71.1	71.1	71.1	71.1	71.1	71.1
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	266	563		445	550		145	1965	879	503	1965	879
v/s Ratio Prot		0.05			0.07			0.12			c0.35	
v/s Ratio Perm	0.04			c0.29			0.09		0.02	0.23		0.00
v/c Ratio	0.12	0.15		0.86	0.21		0.16	0.23	0.04	0.42	0.64	0.01
Uniform Delay, d1	29.4	29.7		39.9	30.3		14.6	15.2	13.7	17.3	20.5	13.4
Progression Factor	1.00	1.00		1.00	1.00		0.93	0.87	1.26	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		15.1	0.2		2.3	0.3	0.1	2.6	1.6	0.0
Delay (s)	29.6	29.8		54.9	30.5		15.9	13.6	17.4	19.9	22.0	13.4
Level of Service	C	C		D	C		B	B	B	B	C	B
Approach Delay (s)		29.8			43.7			14.2			21.7	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



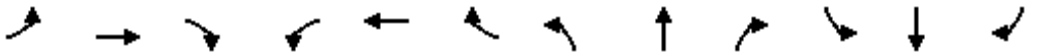
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	48	3	0	3	12	595	1	1	1730	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt		0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1607		1796	1607		1796	3592	1607	1796	3592	
Flt Permitted		1.00		0.80	1.00		0.08	1.00	1.00	0.41	1.00	
Satd. Flow (perm)		1607		1512	1607		159	3592	1607	768	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	52	3	0	3	13	647	1	1	1880	0
RTOR Reduction (vph)	0	12	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	40	0	3	0	0	13	647	1	1	1880	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		5.0		5.0	5.0		49.0	49.0	49.0	49.0	49.0	
Effective Green, g (s)		5.0		5.0	5.0		49.0	49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.08		0.08	0.08		0.75	0.75	0.75	0.75	0.75	
Clearance Time (s)		5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		124		116	124		120	2708	1211	579	2708	
v/s Ratio Prot		c0.02			0.00			0.18			c0.52	
v/s Ratio Perm				0.00			0.08		0.00	0.00		
v/c Ratio		0.32		0.03	0.00		0.11	0.24	0.00	0.00	0.69	
Uniform Delay, d1		28.4		27.7	27.7		2.1	2.4	2.0	2.0	4.1	
Progression Factor		1.00		1.00	1.00		0.32	0.33	0.23	0.84	1.00	
Incremental Delay, d2		1.5		0.1	0.0		1.8	0.2	0.0	0.0	1.2	
Delay (s)		29.9		27.8	27.7		2.5	1.0	0.4	1.7	5.4	
Level of Service		C		C	C		A	A	A	A	A	
Approach Delay (s)		29.9			27.8			1.0			5.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



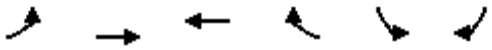
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	608	4	1	1781	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		157	3592	1607	757	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	661	4	1	1936	3
RTOR Reduction (vph)	0	11	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	10	0	3	0	0	1	661	3	1	1936	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		123	2818	1261	594	2818	1261
v/s Ratio Prot		0.01			0.00			0.18			c0.54	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.13		0.03	0.00		0.01	0.23	0.00	0.00	0.69	0.00
Uniform Delay, d1	29.8	29.7		29.6	29.6		1.5	1.8	1.5	1.5	3.3	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.45	0.79	0.37	1.44	1.68	1.64
Incremental Delay, d2	1.1	0.8		0.2	0.0		0.1	0.2	0.0	0.0	1.1	0.0
Delay (s)	30.9	30.5		29.8	29.6		0.8	1.6	0.6	2.2	6.6	2.5
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.7			29.7			1.6			6.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



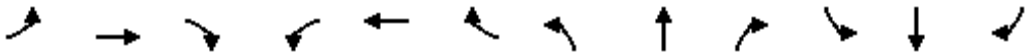
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	629	134	233	1261	44	169	504	144	103	1309	534
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.15	1.00	1.00	0.07	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	248	3592	1607	282	3592	1607	136	3592	1607	799	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	684	146	253	1371	48	184	548	157	112	1423	580
RTOR Reduction (vph)	0	0	56	0	0	11	0	0	83	0	0	117
Lane Group Flow (vph)	189	684	90	253	1371	37	184	548	74	112	1423	463
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.4	55.5	55.5	58.6	51.6	51.6
Effective Green, g (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.4	55.5	55.5	58.6	51.6	51.6
Actuated g/C Ratio	0.30	0.23	0.23	0.37	0.28	0.28	0.51	0.43	0.43	0.45	0.40	0.40
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	843	377	268	1009	451	209	1534	686	414	1426	638
v/s Ratio Prot	c0.07	0.19		0.10	c0.38		c0.07	0.15		0.01	c0.40	
v/s Ratio Perm	0.26		0.06	0.25		0.02	0.38		0.05	0.11		0.29
v/c Ratio	1.12	0.81	0.24	0.94	1.36	0.08	0.88	0.36	0.11	0.27	1.00	0.73
Uniform Delay, d1	41.7	47.0	40.3	32.4	46.8	34.4	36.5	25.2	22.4	20.9	39.1	33.2
Progression Factor	1.75	1.40	1.88	1.00	1.00	1.00	1.00	1.00	1.00	1.02	1.07	1.13
Incremental Delay, d2	103.5	5.8	0.3	39.7	167.9	0.1	32.1	0.7	0.3	0.3	21.3	6.0
Delay (s)	176.4	71.5	76.1	72.1	214.7	34.5	68.6	25.8	22.7	21.6	63.4	43.5
Level of Service	F	E	E	E	F	C	E	C	C	C	E	D
Approach Delay (s)		91.6			187.9			34.1			55.7	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	97.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



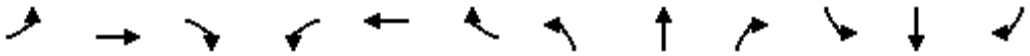
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	48	863	2041	16	57	61
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	74	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	938	2218	17	62	66
RTOR Reduction (vph)	0	0	0	1	0	61
Lane Group Flow (vph)	52	938	2218	16	62	5
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	107.0	107.0	98.0	98.0	9.0	9.0
Effective Green, g (s)	107.0	107.0	98.0	98.0	9.0	9.0
Actuated g/C Ratio	0.82	0.82	0.75	0.75	0.07	0.07
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	2956	2708	1211	124	111
v/s Ratio Prot	c0.02	0.26	c0.62		c0.03	
v/s Ratio Perm	0.32			0.01		0.00
v/c Ratio	0.41	0.32	0.82	0.01	0.50	0.04
Uniform Delay, d1	19.8	2.8	10.3	4.0	58.3	56.5
Progression Factor	3.54	0.04	1.82	0.86	1.00	1.00
Incremental Delay, d2	2.0	0.3	0.3	0.0	3.1	0.2
Delay (s)	71.9	0.4	19.1	3.4	61.5	56.6
Level of Service	E	A	B	A	E	E
Approach Delay (s)		4.1	18.9		59.0	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



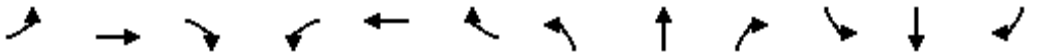
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	867	4	11	2075	0	8	0	29	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.26	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	490	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	942	4	12	2255	0	9	0	32	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	942	2	12	2255	0	9	9	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Effective Green, g (s)		36.5	36.5	36.5	36.5		17.5	17.5				
Actuated g/C Ratio		0.56	0.56	0.56	0.56		0.27	0.27				
Clearance Time (s)		5.5	5.5	5.5	5.5		5.5	5.5				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2017	902	275	2017		386	433				
v/s Ratio Prot		0.26			c0.63			0.01				
v/s Ratio Perm			0.00	0.02			c0.01					
v/c Ratio		0.47	0.00	0.04	1.12		0.02	0.02				
Uniform Delay, d1		8.5	6.3	6.4	14.2		17.5	17.4				
Progression Factor		0.50	0.63	0.86	1.64		1.00	1.00				
Incremental Delay, d2		0.2	0.0	0.0	57.8		0.1	0.1				
Delay (s)		4.4	4.0	5.5	81.2		17.6	17.5				
Level of Service		A	A	A	F		B	B				
Approach Delay (s)		4.4			80.8			17.5			0.0	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM Average Control Delay	57.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	861	17	7	2073	3	46	0	8	2	0	7
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.04	1.00	1.00	0.31	1.00	1.00		0.75		0.80	1.00	
Satd. Flow (perm)	73	3592	1607	577	3592	1607		1394		1508	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	936	18	8	2253	3	50	0	9	2	0	8
RTOR Reduction (vph)	0	0	3	0	0	0	0	6	0	0	7	0
Lane Group Flow (vph)	12	936	15	8	2253	3	0	53	0	2	1	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Effective Green, g (s)	106.1	106.1	106.1	99.8	99.8	99.8		9.4		9.4	9.4	
Actuated g/C Ratio	0.82	0.82	0.82	0.77	0.77	0.77		0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	90	2932	1312	443	2758	1234		101		109	116	
v/s Ratio Prot	0.00	c0.26			c0.63						0.00	
v/s Ratio Perm	0.11		0.01	0.01		0.00		c0.04		0.00		
v/c Ratio	0.13	0.32	0.01	0.02	0.82	0.00		0.52		0.02	0.00	
Uniform Delay, d1	15.0	3.0	2.2	3.6	9.4	3.5		58.1		56.0	56.0	
Progression Factor	1.43	0.26	0.03	0.13	0.79	0.15		1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.2	0.0	0.0	0.3	0.0		4.5		0.1	0.0	
Delay (s)	21.8	1.0	0.1	0.5	7.7	0.5		62.6		56.1	56.0	
Level of Service	C	A	A	A	A	A		E		E	E	
Approach Delay (s)		1.2			7.6			62.6			56.0	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



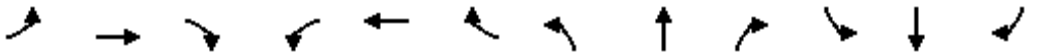
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	659	235	409	1573	117	132	308	117	197	1279	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.12	1.00	1.00	0.10	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	265	3592	1607	233	3592	1607	197	3592	1607	893	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	716	255	445	1710	127	143	335	127	214	1390	286
RTOR Reduction (vph)	0	0	94	0	0	22	0	0	90	0	0	51
Lane Group Flow (vph)	74	716	161	445	1710	105	143	335	37	214	1390	235
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22	0.22	0.46	0.39	0.39	0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	787	352	431	1412	632	134	1058	473	459	1243	556
v/s Ratio Prot	0.02	0.20		c0.21	c0.48		c0.05	0.09		0.04	c0.39	
v/s Ratio Perm	0.14		0.10	0.26		0.07	0.31		0.02	0.15		0.15
v/c Ratio	0.62	0.91	0.46	1.03	1.21	0.17	1.07	0.32	0.08	0.47	1.12	0.42
Uniform Delay, d1	40.2	49.5	44.0	39.5	39.5	25.6	40.9	35.7	33.1	25.1	42.5	32.6
Progression Factor	1.00	1.00	1.00	1.06	1.13	1.14	1.00	1.00	1.00	0.76	0.74	0.61
Incremental Delay, d2	9.7	16.4	4.2	43.0	99.4	0.4	96.8	0.2	0.1	0.7	63.4	0.5
Delay (s)	49.9	65.9	48.2	85.0	144.0	29.6	137.7	35.8	33.2	19.8	94.7	20.4
Level of Service	D	E	D	F	F	C	F	D	C	B	F	C
Approach Delay (s)		60.5			126.1			59.4			75.0	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM Average Control Delay	90.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	917	54	24	2249	138	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	997	59	26	2445	150	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.54	
vC, conflicting volume			1055		2271	498
vC1, stage 1 conf vol					997	
vC2, stage 2 conf vol					1274	
vCu, unblocked vol			1055		1658	498
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		44	93
cM capacity (veh/h)			655		266	517

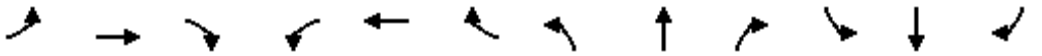
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	498	498	59	26	1222	1222	150	34
Volume Left	0	0	0	26	0	0	150	0
Volume Right	0	0	59	0	0	0	0	34
cSH	1700	1700	1700	655	1700	1700	266	517
Volume to Capacity	0.29	0.29	0.03	0.04	0.72	0.72	0.56	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	24.2	1.6
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	34.7	12.4
Lane LOS				B			D	B
Approach Delay (s)	0.0			0.1			30.6	
Approach LOS							D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		



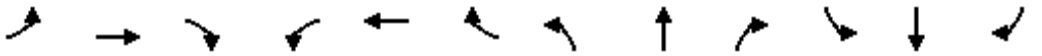
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	735	229	179	1789	117	291	317	104	79	909	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	170	3592	1607	395	3592	1607	216	3592	1607	1030	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	799	249	195	1945	127	316	345	113	86	988	221
RTOR Reduction (vph)	0	0	116	0	0	65	0	0	66	0	0	14
Lane Group Flow (vph)	37	799	133	195	1945	62	316	345	47	86	988	207
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Effective Green, g (s)	44.5	44.5	44.5	55.5	55.5	55.5	49.5	49.5	49.5	31.0	31.0	31.0
Actuated g/C Ratio	0.37	0.37	0.37	0.46	0.46	0.46	0.41	0.41	0.41	0.26	0.26	0.26
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	1332	596	264	1661	743	280	1482	663	266	928	415
v/s Ratio Prot		0.22		0.04	c0.54		c0.14	0.10			0.28	
v/s Ratio Perm	0.22		0.08	0.30		0.04	c0.33		0.03	0.08		0.13
v/c Ratio	0.59	0.60	0.22	0.74	1.17	0.08	1.13	0.23	0.07	0.32	1.06	0.50
Uniform Delay, d1	30.4	30.5	25.9	23.4	32.2	18.0	34.8	22.9	21.3	36.0	44.5	37.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.3	2.0	0.9	10.3	83.8	0.2	93.0	0.4	0.2	3.2	48.3	4.2
Delay (s)	64.7	32.5	26.8	33.7	116.0	18.3	127.8	23.3	21.5	39.2	92.8	42.1
Level of Service	E	C	C	C	F	B	F	C	C	D	F	D
Approach Delay (s)		32.3			103.5			65.7			80.6	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM Average Control Delay	78.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



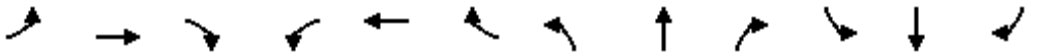
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	738	156	460	1965	46	41	254	85	59	1250	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.13	1.00	1.00	0.09	1.00	1.00	0.57	1.00	1.00
Satd. Flow (perm)	204	3592	1607	251	3592	1607	176	3592	1607	1084	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	802	170	500	2136	50	45	276	92	64	1359	288
RTOR Reduction (vph)	0	0	39	0	0	15	0	0	62	0	0	4
Lane Group Flow (vph)	67	802	131	500	2136	35	45	276	30	64	1359	284
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	37.1	37.1	37.1	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	37.1	37.1	37.1	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.29	0.29	0.29	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1025	459	520	2017	902	58	1188	532	359	1188	532
v/s Ratio Prot		0.22		0.24	c0.59			0.08			c0.38	
v/s Ratio Perm	c0.33		0.08	0.30		0.02	0.26		0.02	0.06		0.18
v/c Ratio	1.16	0.78	0.29	0.96	1.06	0.04	0.78	0.23	0.06	0.18	1.14	0.53
Uniform Delay, d1	46.5	42.7	36.1	35.6	28.5	12.8	39.2	31.5	29.7	30.9	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.90	1.59	1.73	0.93	0.66	0.46	1.00	1.00	1.00
Incremental Delay, d2	166.6	6.0	1.6	5.5	27.9	0.0	46.7	0.1	0.0	0.2	75.2	1.0
Delay (s)	213.1	48.7	37.7	37.5	73.3	22.1	82.9	20.8	13.7	31.2	118.7	36.4
Level of Service	F	D	D	D	E	C	F	C	B	C	F	D
Approach Delay (s)		57.5			65.6			26.0			101.5	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM Average Control Delay	71.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



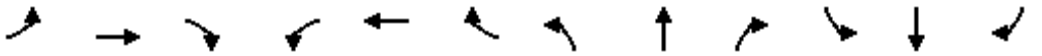
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	747	53	25	2300	81	127	11	45	177	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.31	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	583	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	812	58	27	2500	88	138	12	49	192	38	122
RTOR Reduction (vph)	0	0	18	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	51	812	40	27	2500	80	138	25	0	192	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Effective Green, g (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.28	0.28		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2216	991	360	2216	991	370	458		229	320	272
v/s Ratio Prot		0.23			c0.70		c0.03	0.02			0.02	
v/s Ratio Perm	0.54		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.88	0.37	0.04	0.07	1.13	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	20.8	12.3	9.8	10.0	24.9	10.0	37.0	34.7		52.3	45.8	46.9
Progression Factor	1.46	0.31	0.05	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	70.8	0.3	0.1	0.4	64.1	0.2	0.6	0.1		22.6	0.2	0.5
Delay (s)	101.2	4.2	0.6	10.4	89.0	10.2	37.7	34.7		74.9	45.9	47.4
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.3			85.5			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	64.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



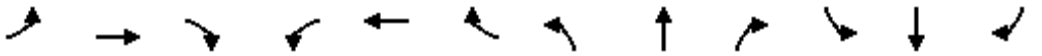
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	8	45	168	15	136	84	1171	319	100	725	31
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1651		1796	1635		1796	3592	1607	1796	3592	1607
Flt Permitted	0.55	1.00		0.72	1.00		0.34	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1043	1651		1360	1635		642	3592	1607	348	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	9	49	183	16	148	91	1273	347	109	788	34
RTOR Reduction (vph)	0	40	0	0	67	0	0	0	58	0	0	9
Lane Group Flow (vph)	18	18	0	183	97	0	91	1273	289	109	788	25
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.2	24.2		22.7	22.7		92.8	92.8	92.8	92.8	92.8	92.8
Effective Green, g (s)	24.2	24.2		22.7	22.7		92.8	92.8	92.8	92.8	92.8	92.8
Actuated g/C Ratio	0.19	0.19		0.17	0.17		0.71	0.71	0.71	0.71	0.71	0.71
Clearance Time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	307		237	285		458	2564	1147	248	2564	1147
v/s Ratio Prot		0.01			0.06			c0.35			0.22	
v/s Ratio Perm	0.02			c0.13			0.14		0.18	0.31		0.02
v/c Ratio	0.09	0.06		0.77	0.34		0.20	0.50	0.25	0.44	0.31	0.02
Uniform Delay, d1	43.8	43.5		51.2	47.1		6.2	8.2	6.5	7.8	6.8	5.4
Progression Factor	1.00	1.00		1.00	1.00		0.25	0.23	0.20	0.53	0.42	0.22
Incremental Delay, d2	0.2	0.1		14.4	0.7		0.8	0.6	0.4	5.1	0.3	0.0
Delay (s)	44.0	43.6		65.6	47.8		2.4	2.5	1.7	9.3	3.2	1.2
Level of Service	D	D		E	D		A	A	A	A	A	A
Approach Delay (s)		43.7			57.2			2.3			3.8	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



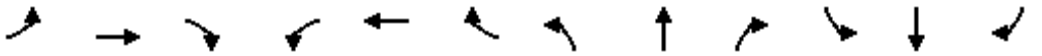
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	26	3	0	3	49	1574	6	6	982	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt		0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1607		1796	1607		1796	3592	1607	1796	3592	
Flt Permitted		1.00		1.00	1.00		0.27	1.00	1.00	0.11	1.00	
Satd. Flow (perm)		1607		1891	1607		502	3592	1607	213	3592	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	28	3	0	3	53	1711	7	7	1067	0
RTOR Reduction (vph)	0	27	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1	0	3	0	0	53	1711	6	7	1067	0
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		2.4		2.4	2.4		48.6	48.6	48.6	48.6	48.6	
Effective Green, g (s)		2.4		2.4	2.4		48.6	48.6	48.6	48.6	48.6	
Actuated g/C Ratio		0.04		0.04	0.04		0.75	0.75	0.75	0.75	0.75	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		59		70	59		375	2686	1202	159	2686	
v/s Ratio Prot		0.00			0.00			c0.48			0.30	
v/s Ratio Perm				c0.00			0.11		0.00	0.03		
v/c Ratio		0.02		0.04	0.00		0.14	0.64	0.00	0.04	0.40	
Uniform Delay, d1		30.2		30.2	30.1		2.3	4.0	2.1	2.1	2.9	
Progression Factor		1.00		1.00	1.00		0.06	0.08	0.01	0.79	0.66	
Incremental Delay, d2		0.1		0.3	0.0		0.7	1.0	0.0	0.5	0.4	
Delay (s)		30.3		30.4	30.2		0.8	1.3	0.0	2.2	2.4	
Level of Service		C		C	C		A	A	A	A	A	
Approach Delay (s)		30.3			30.3			1.3			2.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



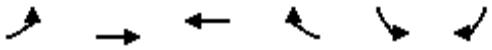
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1628	35	12	1011	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.25	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		480	3592	1607	202	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1770	38	13	1099	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1770	32	13	1099	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		377	2818	1261	158	2818	1261
v/s Ratio Prot		0.00			0.00			c0.49			0.31	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.06		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.63	0.03	0.08	0.39	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	3.0	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.21	2.21	1.40	1.24	1.50	1.44
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.0	0.1	0.0	1.0	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		1.9	6.7	2.2	3.0	3.6	2.2
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			6.5			3.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



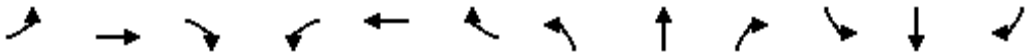
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	365	1470	198	169	809	54	145	1252	363	119	795	176
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.13	1.00	1.00	0.15	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	273	3592	1607	242	3592	1607	282	3592	1607	175	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	1598	215	184	879	59	158	1361	395	129	864	191
RTOR Reduction (vph)	0	0	35	0	0	20	0	0	73	0	0	59
Lane Group Flow (vph)	397	1598	180	184	879	39	158	1361	322	129	864	132
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.3	43.3	43.3
Effective Green, g (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	50.3	43.3	43.3
Actuated g/C Ratio	0.33	0.33	0.33	0.30	0.27	0.27	0.46	0.37	0.37	0.39	0.33	0.33
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	1202	538	169	986	441	271	1340	600	155	1196	535
v/s Ratio Prot	c0.17	0.44		c0.07	0.24		0.05	c0.38		c0.04	0.24	
v/s Ratio Perm	c0.31		0.11	0.26		0.02	0.21		0.20	0.28		0.08
v/c Ratio	1.44	1.33	0.33	1.09	0.89	0.09	0.58	1.02	0.54	0.83	0.72	0.25
Uniform Delay, d1	36.8	43.2	32.4	56.1	45.3	35.0	24.4	40.8	31.9	32.7	38.1	31.5
Progression Factor	1.13	0.71	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.71	0.60
Incremental Delay, d2	210.6	152.2	0.2	94.9	10.2	0.1	3.2	28.6	3.4	29.1	3.7	1.1
Delay (s)	252.3	182.9	22.0	151.1	55.5	35.1	27.6	69.3	35.3	69.1	30.7	20.0
Level of Service	F	F	C	F	E	D	C	E	D	E	C	C
Approach Delay (s)		179.7			70.1			58.9			33.2	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	97.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



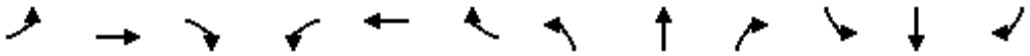
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1988	1045	31	77	47
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.24	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	446	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	2161	1136	34	84	51
RTOR Reduction (vph)	0	0	0	5	0	46
Lane Group Flow (vph)	53	2161	1136	29	84	5
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	103.9	103.9	103.9	103.9	12.1	12.1
Effective Green, g (s)	103.9	103.9	103.9	103.9	12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.09	0.09
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	2871	2871	1284	167	150
v/s Ratio Prot		c0.60	0.32		c0.05	
v/s Ratio Perm	0.12			0.02		0.00
v/c Ratio	0.15	0.75	0.40	0.02	0.50	0.03
Uniform Delay, d1	3.0	6.6	3.8	2.7	56.1	53.6
Progression Factor	0.89	1.47	0.53	0.44	1.00	1.00
Incremental Delay, d2	0.6	1.2	0.3	0.0	2.4	0.1
Delay (s)	3.2	10.9	2.3	1.2	58.5	53.7
Level of Service	A	B	A	A	E	D
Approach Delay (s)		10.7	2.2		56.7	
Approach LOS		B	A		E	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



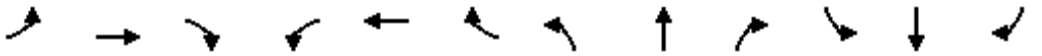
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1962	11	15	1070	0	1	0	26	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00	1.00				
Frt		1.00	0.85	1.00	1.00		1.00	0.85				
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00				
Satd. Flow (prot)		3592	1607	1796	3592		1796	1607				
Flt Permitted		1.00	1.00	0.05	1.00		0.76	1.00				
Satd. Flow (perm)		3592	1607	97	3592		1432	1607				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2133	12	16	1163	0	1	0	28	0	0	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	2133	11	16	1163	0	1	5	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)		100.5	100.5	100.5	100.5		17.0	17.0				
Effective Green, g (s)		100.5	100.5	100.5	100.5		17.0	17.0				
Actuated g/C Ratio		0.77	0.77	0.77	0.77		0.13	0.13				
Clearance Time (s)		5.5	5.5	5.5	5.5		7.0	7.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		2777	1242	75	2777		187	210				
v/s Ratio Prot		c0.59			0.32			c0.00				
v/s Ratio Perm			0.01	0.16			0.00					
v/c Ratio		0.77	0.01	0.21	0.42		0.01	0.03				
Uniform Delay, d1		8.2	3.4	4.0	4.9		49.1	49.3				
Progression Factor		0.50	0.53	0.28	0.14		1.00	1.00				
Incremental Delay, d2		1.0	0.0	1.3	0.1		0.1	0.2				
Delay (s)		5.1	1.8	2.5	0.8		49.2	49.5				
Level of Service		A	A	A	A		D	D				
Approach Delay (s)		5.1			0.8			49.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1955	22	12	1051	8	15	0	7	11	2	15
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5	7.5	7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1700	1527	1796	1638	
Flt Permitted	0.22	1.00	1.00	0.07	1.00	1.00		0.73	1.00	0.75	1.00	
Satd. Flow (perm)	418	3592	1607	139	3592	1607		1292	1527	1410	1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2125	24	13	1142	9	16	0	8	12	2	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	1	7	0	15	0
Lane Group Flow (vph)	7	2125	22	13	1142	8	0	16	0	12	3	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0	6.0	6.0	6.0	
Effective Green, g (s)	109.5	109.5	109.5	102.8	102.8	102.8		6.0	6.0	6.0	6.0	
Actuated g/C Ratio	0.84	0.84	0.84	0.79	0.79	0.79		0.05	0.05	0.05	0.05	
Clearance Time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5	7.5	7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	365	3026	1354	110	2840	1271		60	70	65	76	
v/s Ratio Prot	0.00	c0.59			0.32						0.00	
v/s Ratio Perm	0.02		0.01	0.09		0.01		c0.01	0.00	0.01		
v/c Ratio	0.02	0.70	0.02	0.12	0.40	0.01		0.27	0.00	0.18	0.04	
Uniform Delay, d1	2.2	4.0	1.6	3.1	4.2	2.9		59.9	59.2	59.6	59.2	
Progression Factor	0.54	1.94	0.34	0.22	0.18	0.12		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	2.0	0.4	0.0		2.4	0.0	1.4	0.2	
Delay (s)	1.2	7.8	0.6	2.7	1.1	0.4		62.3	59.2	61.0	59.4	
Level of Service	A	A	A	A	A	A		E	E	E	E	
Approach Delay (s)		7.7			1.1			61.4			60.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



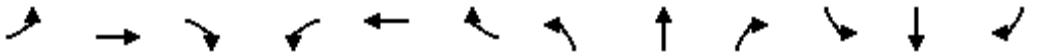
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1527	169	163	830	214	219	1204	370	123	437	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00	0.40	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	350	3592	1607	151	3592	1607	760	3592	1607	189	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1660	184	177	902	233	238	1309	402	134	475	89
RTOR Reduction (vph)	0	0	58	0	0	80	0	0	91	0	0	46
Lane Group Flow (vph)	272	1660	126	177	902	153	238	1309	311	134	475	43
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Effective Green, g (s)	58.0	50.0	50.0	58.0	50.0	50.0	48.0	40.0	40.0	48.0	40.0	40.0
Actuated g/C Ratio	0.45	0.38	0.38	0.45	0.38	0.38	0.37	0.31	0.31	0.37	0.31	0.31
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	1382	618	169	1382	618	344	1105	494	169	1105	494
v/s Ratio Prot	c0.07	c0.46		0.06	0.25		0.04	c0.36		c0.05	0.13	
v/s Ratio Perm	0.43		0.08	0.40		0.10	0.21		0.19	0.24		0.03
v/c Ratio	1.11	1.20	0.20	1.05	0.65	0.25	0.69	1.18	0.63	0.79	0.43	0.09
Uniform Delay, d1	32.6	40.0	26.7	34.2	32.9	27.2	32.7	45.0	38.6	33.3	35.9	32.0
Progression Factor	1.00	1.00	1.00	1.96	0.49	0.42	1.00	1.00	1.00	0.96	0.94	1.14
Incremental Delay, d2	90.3	97.7	0.7	81.0	2.3	0.9	5.9	92.5	2.6	21.8	0.3	0.1
Delay (s)	122.8	137.7	27.5	147.9	18.4	12.4	38.6	137.5	41.3	53.8	33.9	36.4
Level of Service	F	F	C	F	B	B	D	F	D	D	C	D
Approach Delay (s)		126.2			34.8			105.6			38.1	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	89.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1861	143	17	1112	26	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2023	155	18	1209	28	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.85	
vC, conflicting volume			2178		2664	1011
vC1, stage 1 conf vol					2023	
vC2, stage 2 conf vol					641	
vCu, unblocked vol			2178		2603	1011
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			92		67	90
cM capacity (veh/h)			241		85	237

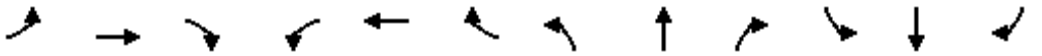
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1011	1011	155	18	604	604	28	23
Volume Left	0	0	0	18	0	0	28	0
Volume Right	0	0	155	0	0	0	0	23
cSH	1700	1700	1700	241	1700	1700	85	237
Volume to Capacity	0.59	0.59	0.09	0.08	0.36	0.36	0.33	0.10
Queue Length 95th (m)	0.0	0.0	0.0	1.9	0.0	0.0	9.6	2.4
Control Delay (s)	0.0	0.0	0.0	21.2	0.0	0.0	66.9	21.8
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.3			46.7	
Approach LOS							E	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		



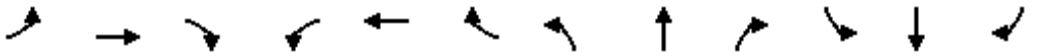
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1729	261	93	863	70	271	584	165	99	411	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.29	1.00	1.00	0.06	1.00	1.00	0.33	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	548	3592	1607	115	3592	1607	629	3592	1607	737	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1879	284	101	938	76	295	635	179	108	447	22
RTOR Reduction (vph)	0	0	52	0	0	33	0	0	78	0	0	17
Lane Group Flow (vph)	39	1879	232	101	938	43	295	635	101	108	447	5
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	1713	766	155	2017	902	266	1160	519	176	857	383
v/s Ratio Prot		c0.52		c0.04	0.26		c0.06	0.18			0.12	
v/s Ratio Perm	0.07		0.14	0.33		0.03	c0.30		0.06	0.15		0.00
v/c Ratio	0.15	1.10	0.30	0.65	0.47	0.05	1.11	0.55	0.19	0.61	0.52	0.01
Uniform Delay, d1	19.1	34.0	20.8	28.9	16.9	12.8	43.5	36.2	31.8	44.2	43.1	37.8
Progression Factor	0.81	0.92	0.79	1.00	1.00	1.00	0.76	0.82	0.87	1.00	1.00	1.00
Incremental Delay, d2	0.9	50.9	0.7	9.4	0.8	0.1	84.7	1.7	0.7	15.0	2.3	0.1
Delay (s)	16.4	82.3	17.2	38.3	17.7	12.9	117.8	31.4	28.4	59.1	45.3	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		72.7			19.2			53.9			47.6	
Approach LOS		E			B			D			D	

Intersection Summary			
HCM Average Control Delay	53.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1750	96	105	951	76	208	1018	414	62	379	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.07	1.00	1.00	0.36	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	248	3592	1607	142	3592	1607	677	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1902	104	114	1034	83	226	1107	450	67	412	118
RTOR Reduction (vph)	0	0	30	0	0	49	0	0	87	0	0	90
Lane Group Flow (vph)	224	1902	74	114	1034	34	226	1107	363	67	412	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	61.2	53.4	53.4	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	61.2	53.4	53.4	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	1627	728	166	1475	660	322	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.53		0.04	0.29		c0.05	c0.31		0.02	0.11	
v/s Ratio Perm	0.34		0.05	0.28		0.02	0.19		0.23	0.14		0.02
v/c Ratio	0.76	1.17	0.10	0.69	0.70	0.05	0.70	1.09	0.80	0.56	0.48	0.07
Uniform Delay, d1	21.6	35.5	20.4	29.4	31.7	23.1	33.9	46.5	43.1	38.5	42.3	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.60	0.21	1.29	1.27	1.38	1.00	1.00	1.00
Incremental Delay, d2	11.3	83.1	0.3	10.7	2.7	0.1	5.8	52.4	8.0	6.0	0.4	0.1
Delay (s)	32.8	118.6	20.7	53.7	21.8	5.0	49.5	111.7	67.4	44.5	42.7	38.2
Level of Service	C	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		105.4			23.6			92.6			42.0	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	77.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



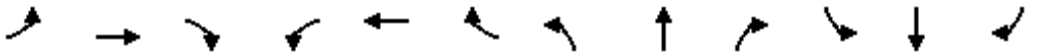
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1814	108	36	908	240	63	40	41	183	26	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.26	1.00	1.00	0.05	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	497	3592	1607	101	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1972	117	39	987	261	68	43	45	199	28	103
RTOR Reduction (vph)	0	0	13	0	0	72	0	13	0	0	0	84
Lane Group Flow (vph)	142	1972	104	39	987	189	68	75	0	199	28	19
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.4	91.4	91.4	91.4	91.4	91.4	24.6	24.6		24.6	24.6	24.6
Effective Green, g (s)	91.4	91.4	91.4	91.4	91.4	91.4	24.6	24.6		24.6	24.6	24.6
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	349	2525	1130	71	2525	1130	264	330		250	358	304
v/s Ratio Prot		c0.55			0.27			0.04			0.01	
v/s Ratio Perm	0.29		0.06	0.39		0.12	0.05			c0.15		0.01
v/c Ratio	0.41	0.78	0.09	0.55	0.39	0.17	0.26	0.23		0.80	0.08	0.06
Uniform Delay, d1	8.0	12.7	6.1	9.3	7.9	6.5	44.9	44.6		50.3	43.4	43.3
Progression Factor	1.47	1.39	1.88	0.93	0.66	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.0	23.2	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.1	17.9	11.6	31.9	5.6	0.6	45.4	45.0		66.2	43.5	43.3
Level of Service	B	B	B	C	A	A	D	D		E	D	D
Approach Delay (s)		17.2			5.4			45.2			57.2	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix K – Synchro Output
2024 Total Condition

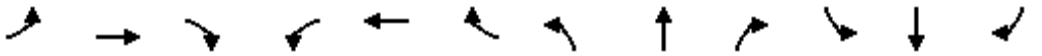
This appendix contains the following outputs in order:

- Scenario C, Total AM;
- Scenario C, Total PM;
- Scenario D, Total AM;
- Scenario D, Total PM.



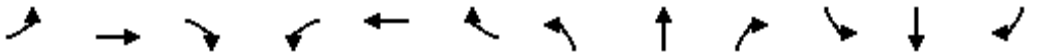
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	10	45	362	3	305	12	433	65	194	1208	9
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1659		1796	1609		1796	3592	1607	1796	3592	1607
Flt Permitted	0.40	1.00		0.72	1.00		0.12	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	754	1659		1357	1609		235	3592	1607	888	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	11	49	393	3	332	13	471	71	211	1313	10
RTOR Reduction (vph)	0	17	0	0	198	0	0	0	32	0	0	2
Lane Group Flow (vph)	38	43	0	393	137	0	13	471	39	211	1313	8
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	44.1	44.1		44.1	44.1		71.4	71.4	71.4	71.4	71.4	71.4
Effective Green, g (s)	44.1	44.1		44.1	44.1		71.4	71.4	71.4	71.4	71.4	71.4
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	563		460	546		129	1973	883	488	1973	883
v/s Ratio Prot		0.03			0.09			0.13			c0.37	
v/s Ratio Perm	0.05			c0.29			0.06		0.02	0.24		0.01
v/c Ratio	0.15	0.08		0.85	0.25		0.10	0.24	0.04	0.43	0.67	0.01
Uniform Delay, d1	29.9	29.1		40.0	31.0		14.0	15.2	13.5	17.3	20.8	13.3
Progression Factor	1.00	1.00		1.00	1.00		1.04	0.95	1.39	0.33	0.37	0.14
Incremental Delay, d2	0.3	0.1		14.3	0.2		1.5	0.3	0.1	1.1	0.7	0.0
Delay (s)	30.2	29.2		54.3	31.3		16.1	14.7	19.0	6.7	8.4	1.9
Level of Service	C	C		D	C		B	B	B	A	A	A
Approach Delay (s)		29.6			43.7			15.2			8.1	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



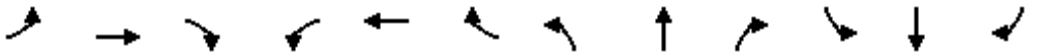
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1	23	3	0	3	6	621	1	1	1784	1
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.86		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1618		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1891	1618		1891	1607		157	3592	1607	747	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1	25	3	0	3	7	675	1	1	1939	1
RTOR Reduction (vph)	0	11	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	15	0	3	0	0	7	675	1	1	1939	1
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	2.9	2.9		2.9	2.9		51.1	51.1	51.1	51.1	51.1	51.1
Effective Green, g (s)	2.9	2.9		2.9	2.9		51.1	51.1	51.1	51.1	51.1	51.1
Actuated g/C Ratio	0.04	0.04		0.04	0.04		0.79	0.79	0.79	0.79	0.79	0.79
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	72		84	72		123	2824	1263	587	2824	1263
v/s Ratio Prot		c0.01			0.00			0.19			c0.54	
v/s Ratio Perm	0.00			0.00			0.04		0.00	0.00		0.00
v/c Ratio	0.02	0.20		0.04	0.00		0.06	0.24	0.00	0.00	0.69	0.00
Uniform Delay, d1	29.7	29.9		29.7	29.7		1.6	1.8	1.5	1.5	3.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.33	0.31	0.31	0.81	1.01	0.81
Incremental Delay, d2	0.1	1.4		0.2	0.0		0.9	0.2	0.0	0.0	1.1	0.0
Delay (s)	29.8	31.3		29.9	29.7		1.4	0.8	0.5	1.2	4.4	1.2
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		31.2			29.8			0.8			4.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



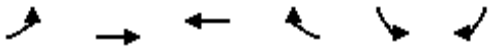
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	628	4	1	1810	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		149	3592	1607	741	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	683	4	1	1967	3
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	11	0	3	0	0	1	683	3	1	1967	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		117	2818	1261	581	2818	1261
v/s Ratio Prot		0.01			0.00			0.19			c0.55	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.14		0.03	0.00		0.01	0.24	0.00	0.00	0.70	0.00
Uniform Delay, d1	29.8	29.8		29.6	29.6		1.5	1.9	1.5	1.5	3.3	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.42	0.79	0.35	1.41	1.58	1.53
Incremental Delay, d2	1.1	0.9		0.2	0.0		0.1	0.2	0.0	0.0	1.2	0.0
Delay (s)	30.9	30.6		29.8	29.6		0.8	1.6	0.5	2.1	6.4	2.3
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.8			29.7			1.6			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



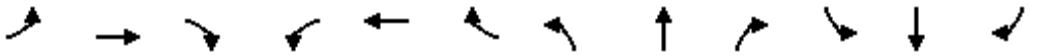
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	675	153	233	1306	44	174	528	144	103	1362	481
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.13	1.00	1.00	0.12	1.00	1.00	0.07	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	248	3592	1607	221	3592	1607	136	3592	1607	768	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	734	166	253	1420	48	189	574	157	112	1480	523
RTOR Reduction (vph)	0	0	59	0	0	10	0	0	79	0	0	102
Lane Group Flow (vph)	177	734	107	253	1420	38	189	574	78	112	1480	421
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.5	55.5	55.5	58.5	51.5	51.5
Effective Green, g (s)	38.5	30.5	30.5	48.5	36.5	36.5	66.5	55.5	55.5	58.5	51.5	51.5
Actuated g/C Ratio	0.30	0.23	0.23	0.37	0.28	0.28	0.51	0.43	0.43	0.45	0.40	0.40
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	843	377	252	1009	451	210	1534	686	401	1423	637
v/s Ratio Prot	0.06	0.20		c0.11	c0.40		c0.08	0.16		0.02	c0.41	
v/s Ratio Perm	0.25		0.07	0.27		0.02	0.38		0.05	0.11		0.26
v/c Ratio	1.05	0.87	0.28	1.00	1.41	0.08	0.90	0.37	0.11	0.28	1.04	0.66
Uniform Delay, d1	41.7	47.9	40.8	36.2	46.8	34.4	37.1	25.4	22.4	21.0	39.2	32.1
Progression Factor	1.67	1.35	1.77	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.10	1.18
Incremental Delay, d2	80.9	9.4	0.4	57.7	189.3	0.1	36.0	0.7	0.3	0.3	32.9	4.4
Delay (s)	150.5	73.9	72.6	93.9	236.0	34.5	73.1	26.1	22.8	22.3	76.2	42.2
Level of Service	F	E	E	F	F	C	E	C	C	C	E	D
Approach Delay (s)		86.3			209.5			35.2			64.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM Average Control Delay	106.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



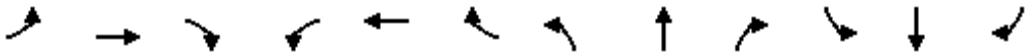
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	905	2054	23	82	173
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	79	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	984	2233	25	89	188
RTOR Reduction (vph)	0	0	0	2	0	136
Lane Group Flow (vph)	86	984	2233	23	89	52
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	103.5	103.5	92.1	92.1	12.5	12.5
Effective Green, g (s)	103.5	103.5	92.1	92.1	12.5	12.5
Actuated g/C Ratio	0.80	0.80	0.71	0.71	0.10	0.10
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	161	2860	2545	1138	173	155
v/s Ratio Prot	c0.03	0.27	c0.62		c0.05	
v/s Ratio Perm	0.40			0.01		0.03
v/c Ratio	0.53	0.34	0.88	0.02	0.51	0.33
Uniform Delay, d1	30.7	3.7	14.6	5.6	55.9	54.9
Progression Factor	2.29	0.08	1.81	1.05	1.00	1.00
Incremental Delay, d2	3.0	0.3	0.5	0.0	2.6	1.3
Delay (s)	73.5	0.6	26.9	5.9	58.4	56.1
Level of Service	E	A	C	A	E	E
Approach Delay (s)		6.5	26.6		56.9	
Approach LOS		A	C		E	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



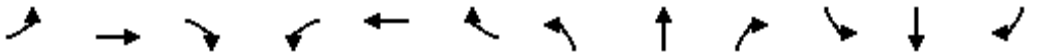
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	919	4	11	2196	4	8	0	29	15	0	28
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1607		1796	1607	
Flt Permitted	0.11	1.00	1.00	0.24	1.00	1.00	0.74	1.00		0.74	1.00	
Satd. Flow (perm)	207	3592	1607	449	3592	1607	1395	1607		1392	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	999	4	12	2387	4	9	0	32	16	0	30
RTOR Reduction (vph)	0	0	2	0	0	1	0	23	0	0	2	0
Lane Group Flow (vph)	9	999	2	12	2387	3	9	9	0	16	28	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	36.5	36.5	36.5	36.5	36.5	36.5	17.5	17.5		17.5	17.5	
Effective Green, g (s)	36.5	36.5	36.5	36.5	36.5	36.5	17.5	17.5		17.5	17.5	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.27	0.27		0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	2017	902	252	2017	902	376	433		375	433	
v/s Ratio Prot		0.28			c0.66			0.01			c0.02	
v/s Ratio Perm	0.04		0.00	0.03		0.00	0.01			0.01		
v/c Ratio	0.08	0.50	0.00	0.05	1.18	0.00	0.02	0.02		0.04	0.06	
Uniform Delay, d1	6.5	8.7	6.3	6.4	14.2	6.3	17.5	17.4		17.6	17.7	
Progression Factor	0.66	0.53	0.74	0.82	1.43	0.84	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2	0.0	0.0	85.4	0.0	0.1	0.1		0.2	0.3	
Delay (s)	4.6	4.8	4.6	5.3	105.8	5.3	17.6	17.5		17.8	17.9	
Level of Service	A	A	A	A	F	A	B	B		B	B	
Approach Delay (s)		4.8			105.1			17.5			17.9	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM Average Control Delay	73.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	909	17	7	2219	6	46	0	8	13	0	35
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1776		1796	1607	
Flt Permitted	0.04	1.00	1.00	0.29	1.00	1.00		0.73		0.80	1.00	
Satd. Flow (perm)	74	3592	1607	548	3592	1607		1355		1507	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	988	18	8	2412	7	50	0	9	14	0	38
RTOR Reduction (vph)	0	0	3	0	0	0	0	6	0	0	35	0
Lane Group Flow (vph)	20	988	15	8	2412	7	0	53	0	14	3	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	106.0	106.0	106.0	98.4	98.4	98.4		9.5		9.5	9.5	
Effective Green, g (s)	106.0	106.0	106.0	98.4	98.4	98.4		9.5		9.5	9.5	
Actuated g/C Ratio	0.82	0.82	0.82	0.76	0.76	0.76		0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	108	2929	1310	415	2719	1216		99		110	117	
v/s Ratio Prot	0.01	c0.28			c0.67						0.00	
v/s Ratio Perm	0.15		0.01	0.01		0.00		c0.04		0.01		
v/c Ratio	0.19	0.34	0.01	0.02	0.89	0.01		0.53		0.13	0.02	
Uniform Delay, d1	24.3	3.1	2.2	3.9	11.7	3.9		58.1		56.4	55.9	
Progression Factor	4.00	0.30	0.03	0.16	0.88	0.14		1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.2	0.0	0.0	0.5	0.0		5.4		0.5	0.1	
Delay (s)	97.6	1.1	0.1	0.6	10.8	0.6		63.5		56.9	56.0	
Level of Service	F	A	A	A	B	A		E		E	E	
Approach Delay (s)		3.0			10.7			63.5			56.3	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



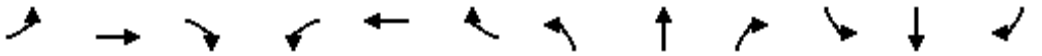
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	695	235	445	1678	135	132	324	127	202	1349	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.12	1.00	1.00	0.10	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	265	3592	1607	233	3592	1607	198	3592	1607	864	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	755	255	484	1824	147	143	352	138	220	1466	286
RTOR Reduction (vph)	0	0	89	0	0	24	0	0	97	0	0	48
Lane Group Flow (vph)	74	755	166	484	1824	123	143	352	41	220	1466	238
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.7	38.2	38.2	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5	28.5	59.5	51.1	51.1	43.7	38.2	38.2	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22	0.22	0.46	0.39	0.39	0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	787	352	431	1412	632	134	1055	472	450	1243	556
v/s Ratio Prot	0.02	0.21		c0.23	c0.51		c0.05	0.10		0.05	c0.41	
v/s Ratio Perm	0.14		0.10	0.28		0.08	0.31		0.03	0.16		0.15
v/c Ratio	0.62	0.96	0.47	1.12	1.29	0.19	1.07	0.33	0.09	0.49	1.18	0.43
Uniform Delay, d1	40.2	50.2	44.2	39.6	39.5	25.9	40.9	35.9	33.3	25.2	42.5	32.6
Progression Factor	1.00	1.00	1.00	1.12	1.07	1.07	1.00	1.00	1.00	0.77	0.73	0.63
Incremental Delay, d2	9.7	23.6	4.5	71.3	134.3	0.4	96.8	0.2	0.1	0.7	88.3	0.5
Delay (s)	49.9	73.8	48.7	115.6	176.4	28.0	137.7	36.1	33.3	20.1	119.4	21.0
Level of Service	D	E	D	F	F	C	F	D	C	C	F	C
Approach Delay (s)		66.2			155.5			58.5			94.1	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	110.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	112.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	939	61	25	2314	160	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1021	66	27	2515	174	36
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1087		2333	510
vC1, stage 1 conf vol					1021	
vC2, stage 2 conf vol					1312	
vCu, unblocked vol			1087		1668	510
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		32	93
cM capacity (veh/h)			638		254	508

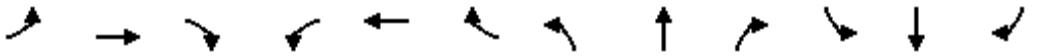
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	510	510	66	27	1258	1258	174	36
Volume Left	0	0	0	27	0	0	174	0
Volume Right	0	0	66	0	0	0	0	36
cSH	1700	1700	1700	638	1700	1700	254	508
Volume to Capacity	0.30	0.30	0.04	0.04	0.74	0.74	0.68	0.07
Queue Length 95th (m)	0.0	0.0	0.0	1.0	0.0	0.0	34.1	1.7
Control Delay (s)	0.0	0.0	0.0	10.9	0.0	0.0	45.1	12.6
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			39.6	
Approach LOS							E	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		



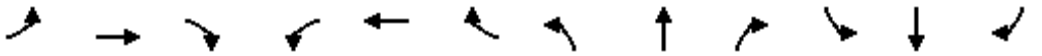
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	753	229	181	1841	117	292	336	111	79	954	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.22	1.00	1.00	0.11	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	144	3592	1607	409	3592	1607	207	3592	1607	1010	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	818	249	197	2001	127	317	365	121	86	1037	221
RTOR Reduction (vph)	0	0	104	0	0	58	0	0	75	0	0	9
Lane Group Flow (vph)	37	818	145	197	2001	69	317	365	46	86	1037	212
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	302	1810	810	238	1368	612	253	898	402
v/s Ratio Prot		0.23		0.05	c0.56		c0.13	0.10			0.29	
v/s Ratio Perm	0.26		0.09	0.28		0.04	c0.37		0.03	0.09		0.13
v/c Ratio	0.64	0.56	0.22	0.65	1.11	0.09	1.33	0.27	0.08	0.34	1.15	0.53
Uniform Delay, d1	31.1	29.9	25.4	20.4	32.2	16.7	36.8	27.7	25.7	40.0	48.8	42.1
Progression Factor	0.97	0.95	1.36	1.00	1.00	1.00	1.32	1.07	1.88	1.00	1.00	1.00
Incremental Delay, d2	40.9	1.5	0.7	5.0	56.3	0.2	174.6	0.5	0.2	3.6	82.3	4.9
Delay (s)	71.0	29.8	35.4	25.4	88.5	16.9	223.1	30.2	48.5	43.6	131.1	47.0
Level of Service	E	C	D	C	F	B	F	C	D	D	F	D
Approach Delay (s)		32.4			79.3			109.1			111.6	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	82.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



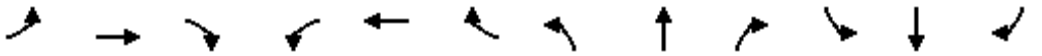
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	766	159	460	2040	47	52	269	85	60	1313	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.11	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	207	3592	1607	213	3592	1607	176	3592	1607	1055	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	833	173	500	2217	51	57	292	92	65	1427	288
RTOR Reduction (vph)	0	0	37	0	0	15	0	0	62	0	0	3
Lane Group Flow (vph)	67	833	136	500	2217	36	57	292	30	65	1427	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1011	452	514	2017	902	58	1188	532	349	1188	532
v/s Ratio Prot		0.23		0.24	c0.62			0.08			c0.40	
v/s Ratio Perm	0.32		0.08	0.30		0.02	0.32		0.02	0.06		0.18
v/c Ratio	1.16	0.82	0.30	0.97	1.10	0.04	0.98	0.25	0.06	0.19	1.20	0.54
Uniform Delay, d1	46.7	43.7	36.7	37.7	28.5	12.8	43.1	31.7	29.7	31.0	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.83	1.58	1.73	0.95	0.66	0.47	1.00	1.00	1.00
Incremental Delay, d2	166.6	7.6	1.7	6.9	45.5	0.0	111.2	0.1	0.0	0.3	98.8	1.0
Delay (s)	213.3	51.3	38.4	38.0	90.6	22.1	152.3	20.9	14.0	31.3	142.3	36.4
Level of Service	F	D	D	D	F	C	F	C	B	C	F	D
Approach Delay (s)		59.3			79.8			36.4			121.1	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM Average Control Delay	85.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	146.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



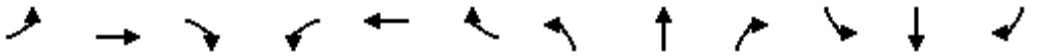
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	776	53	25	2388	82	127	11	45	177	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	560	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	843	58	27	2596	89	138	12	49	192	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	52	843	41	27	2596	81	138	25	0	192	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Effective Green, g (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.28	0.28		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2216	991	345	2216	991	370	458		229	320	272
v/s Ratio Prot		0.23			c0.72		c0.03	0.02			0.02	
v/s Ratio Perm	0.55		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.90	0.38	0.04	0.08	1.17	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	21.3	12.5	9.8	10.0	24.9	10.0	37.0	34.7		52.3	45.8	46.9
Progression Factor	1.46	0.30	0.04	1.53	1.36	1.69	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	71.8	0.3	0.1	0.0	77.7	0.0	0.6	0.1		22.6	0.2	0.5
Delay (s)	102.9	4.0	0.5	15.4	111.5	17.0	37.7	34.7		74.9	45.9	47.4
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.2			107.4			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	78.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



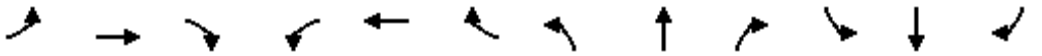
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	6	26	173	11	140	47	1232	319	100	764	36
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1664		1796	1628		1796	3592	1607	1796	3592	1607
Flt Permitted	0.55	1.00		0.73	1.00		0.32	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	1045	1664		1388	1628		610	3592	1607	317	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	7	28	188	12	152	51	1339	347	109	830	39
RTOR Reduction (vph)	0	23	0	0	58	0	0	0	55	0	0	10
Lane Group Flow (vph)	21	12	0	188	106	0	51	1339	292	109	830	29
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.3	24.3		22.8	22.8		92.7	92.7	92.7	92.7	92.7	92.7
Effective Green, g (s)	24.3	24.3		22.8	22.8		92.7	92.7	92.7	92.7	92.7	92.7
Actuated g/C Ratio	0.19	0.19		0.18	0.18		0.71	0.71	0.71	0.71	0.71	0.71
Clearance Time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	311		243	286		435	2561	1146	226	2561	1146
v/s Ratio Prot		0.01			0.07			c0.37			0.23	
v/s Ratio Perm	0.02			c0.14			0.08		0.18	0.34		0.02
v/c Ratio	0.11	0.04		0.77	0.37		0.12	0.52	0.25	0.48	0.32	0.03
Uniform Delay, d1	43.9	43.3		51.1	47.3		5.8	8.5	6.5	8.2	7.0	5.4
Progression Factor	1.00	1.00		1.00	1.00		0.28	0.25	0.24	0.56	0.44	0.21
Incremental Delay, d2	0.2	0.1		14.2	0.8		0.5	0.7	0.5	6.6	0.3	0.0
Delay (s)	44.1	43.3		65.3	48.1		2.1	2.8	2.1	11.1	3.3	1.2
Level of Service	D	D		E	D		A	A	A	B	A	A
Approach Delay (s)		43.6			57.3			2.6			4.1	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



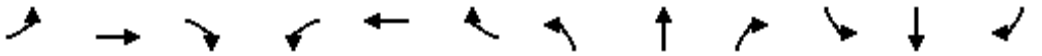
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	13	3	1	3	24	1618	6	6	1016	2
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.86		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1626		1796	1678		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.26	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1891	1626		1891	1678		485	3592	1607	204	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	14	3	1	3	26	1759	7	7	1104	2
RTOR Reduction (vph)	0	14	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	1	1	0	3	1	0	26	1759	6	7	1104	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	1.4	1.4		1.4	1.4		49.6	49.6	49.6	49.6	49.6	49.6
Effective Green, g (s)	1.4	1.4		1.4	1.4		49.6	49.6	49.6	49.6	49.6	49.6
Actuated g/C Ratio	0.02	0.02		0.02	0.02		0.76	0.76	0.76	0.76	0.76	0.76
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	35		41	36		370	2741	1226	156	2741	1226
v/s Ratio Prot		0.00			0.00			c0.49			0.31	
v/s Ratio Perm	0.00			c0.00			0.05		0.00	0.03		0.00
v/c Ratio	0.02	0.04		0.07	0.03		0.07	0.64	0.00	0.04	0.40	0.00
Uniform Delay, d1	31.1	31.1		31.2	31.1		1.9	3.6	1.8	1.9	2.6	1.8
Progression Factor	1.00	1.00		1.00	1.00		0.08	0.10	0.01	0.84	0.73	0.85
Incremental Delay, d2	0.2	0.4		0.8	0.3		0.3	1.0	0.0	0.5	0.4	0.0
Delay (s)	31.4	31.6		31.9	31.5		0.5	1.3	0.0	2.1	2.3	1.6
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		31.6			31.7			1.3			2.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	1.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



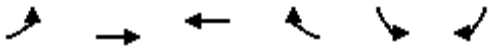
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1648	35	12	1032	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.25	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		467	3592	1607	196	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1791	38	13	1122	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1791	32	13	1122	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		366	2818	1261	154	2818	1261
v/s Ratio Prot		0.00			0.00			c0.50			0.31	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.07		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.64	0.03	0.08	0.40	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	3.0	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.26	2.50	1.47	1.43	1.66	1.76
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.0	0.1	0.0	1.0	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		2.0	7.6	2.3	3.3	4.1	2.7
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			7.4			4.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



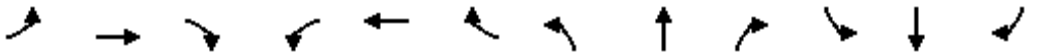
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	312	1529	209	169	860	54	165	1300	363	119	828	150
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00	1.00	0.13	1.00	1.00	0.13	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	273	3592	1607	242	3592	1607	238	3592	1607	179	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	339	1662	227	184	935	59	179	1413	395	129	900	163
RTOR Reduction (vph)	0	0	35	0	0	19	0	0	73	0	0	49
Lane Group Flow (vph)	339	1662	192	184	935	40	179	1413	322	129	900	114
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	49.2	42.2	42.2
Effective Green, g (s)	43.5	43.5	43.5	39.2	35.7	35.7	59.5	48.5	48.5	49.2	42.2	42.2
Actuated g/C Ratio	0.33	0.33	0.33	0.30	0.27	0.27	0.46	0.37	0.37	0.38	0.32	0.32
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	1202	538	169	986	441	268	1340	600	155	1166	522
v/s Ratio Prot	0.15	c0.46		c0.07	0.26		0.07	c0.39		c0.04	0.25	
v/s Ratio Perm	0.26		0.12	0.26		0.02	0.24		0.20	0.27		0.07
v/c Ratio	1.23	1.38	0.36	1.09	0.95	0.09	0.67	1.05	0.54	0.83	0.77	0.22
Uniform Delay, d1	36.8	43.2	32.7	56.1	46.2	35.1	25.5	40.8	31.9	33.1	39.6	31.9
Progression Factor	1.09	0.73	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.23	0.71	0.61
Incremental Delay, d2	121.9	175.7	0.3	94.9	17.3	0.1	6.2	40.3	3.4	29.1	4.8	0.9
Delay (s)	161.9	207.1	22.7	151.1	63.6	35.2	31.7	81.1	35.3	69.9	33.0	20.3
Level of Service	F	F	C	F	E	D	C	F	D	E	C	C
Approach Delay (s)		181.4			75.8			67.5			35.3	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM Average Control Delay	101.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



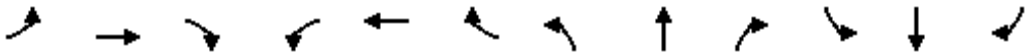
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	166	2007	1078	58	92	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1796	3592	3592	1607	1796	1607
Flt Permitted	0.22	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	425	3592	3592	1607	1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	2182	1172	63	100	122
RTOR Reduction (vph)	0	0	0	8	0	91
Lane Group Flow (vph)	180	2182	1172	55	100	31
Turn Type	Perm			Perm		Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	103.0	103.0	103.0	103.0	13.0	13.0
Effective Green, g (s)	103.0	103.0	103.0	103.0	13.0	13.0
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.10	0.10
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337	2846	2846	1273	180	161
v/s Ratio Prot		c0.61	0.33		c0.06	
v/s Ratio Perm	0.42			0.03		0.02
v/c Ratio	0.53	0.77	0.41	0.04	0.56	0.19
Uniform Delay, d1	4.9	7.1	4.2	2.9	55.7	53.7
Progression Factor	1.34	1.50	0.57	0.48	1.00	1.00
Incremental Delay, d2	3.6	1.2	0.2	0.0	3.7	0.6
Delay (s)	10.1	12.0	2.6	1.4	59.4	54.3
Level of Service	B	B	A	A	E	D
Approach Delay (s)		11.8	2.6		56.6	
Approach LOS		B	A		E	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



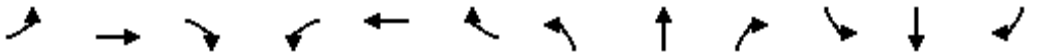
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	2086	11	15	1146	15	1	0	26	8	0	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5	7.0	7.0		5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1607		1796	1607	
Flt Permitted	0.20	1.00	1.00	0.04	1.00	1.00	0.75	1.00		0.74	1.00	
Satd. Flow (perm)	376	3592	1607	75	3592	1607	1411	1607		1397	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	2267	12	16	1246	16	1	0	28	9	0	17
RTOR Reduction (vph)	0	0	1	0	0	3	0	17	0	0	15	0
Lane Group Flow (vph)	32	2267	11	16	1246	13	1	11	0	9	2	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	100.5	100.5	100.5	100.5	100.5	100.5	17.0	17.0		18.5	18.5	
Effective Green, g (s)	100.5	100.5	100.5	100.5	100.5	100.5	17.0	17.0		18.5	18.5	
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.77	0.77	0.13	0.13		0.14	0.14	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	7.0	7.0		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	291	2777	1242	58	2777	1242	185	210		199	229	
v/s Ratio Prot		c0.63			0.35			c0.01			0.00	
v/s Ratio Perm	0.09		0.01	0.21		0.01	0.00			0.01		
v/c Ratio	0.11	0.82	0.01	0.28	0.45	0.01	0.01	0.05		0.05	0.01	
Uniform Delay, d1	3.7	9.1	3.4	4.3	5.1	3.4	49.1	49.4		48.1	47.9	
Progression Factor	0.48	0.45	0.49	0.52	0.18	0.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.3	0.0	2.4	0.1	0.0	0.1	0.5		0.4	0.1	
Delay (s)	1.9	5.4	1.6	4.6	1.0	0.0	49.2	49.9		48.6	48.0	
Level of Service	A	A	A	A	A	A	D	D		D	D	
Approach Delay (s)		5.3			1.1			49.9			48.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	2102	22	12	1131	19	15	0	7	17	2	31
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607		1747		1796	1623	
Flt Permitted	0.19	1.00	1.00	0.05	1.00	1.00		0.78		0.74	1.00	
Satd. Flow (perm)	360	3592	1607	104	3592	1607		1404		1402	1623	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	2285	24	13	1229	21	16	0	8	18	2	34
RTOR Reduction (vph)	0	0	2	0	0	2	0	8	0	0	32	0
Lane Group Flow (vph)	38	2285	22	13	1229	19	0	16	0	18	4	0
Turn Type	pm+pt		Perm	Perm		Perm	Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	107.5	107.5	107.5	97.1	97.1	97.1		8.0		8.0	8.0	
Effective Green, g (s)	107.5	107.5	107.5	97.1	97.1	97.1		8.0		8.0	8.0	
Actuated g/C Ratio	0.83	0.83	0.83	0.75	0.75	0.75		0.06		0.06	0.06	
Clearance Time (s)	5.5	7.0	7.0	7.0	7.0	7.0		7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	352	2970	1329	78	2683	1200		86		86	100	
v/s Ratio Prot	0.00	c0.64			0.34						0.00	
v/s Ratio Perm	0.09		0.01	0.13		0.01		0.01		c0.01		
v/c Ratio	0.11	0.77	0.02	0.17	0.46	0.02		0.19		0.21	0.04	
Uniform Delay, d1	3.2	5.4	2.0	4.8	6.3	4.2		57.9		58.0	57.4	
Progression Factor	0.63	2.09	0.46	0.37	0.37	0.29		1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2	0.0	4.2	0.5	0.0		1.1		1.2	0.2	
Delay (s)	2.0	11.4	0.9	5.9	2.9	1.3		59.0		59.2	57.6	
Level of Service	A	B	A	A	A	A		E		E	E	
Approach Delay (s)		11.1			2.9			59.0			58.1	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



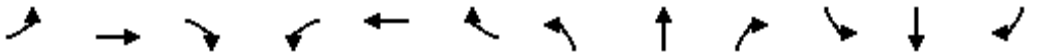
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1634	169	184	889	225	219	1270	409	142	457	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00	1.00	0.10	1.00	1.00	0.32	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	173	3592	1607	190	3592	1607	612	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1776	184	200	966	245	238	1380	445	154	497	89
RTOR Reduction (vph)	0	0	54	0	0	77	0	0	95	0	0	44
Lane Group Flow (vph)	272	1776	130	200	966	168	238	1380	350	154	497	45
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	61.3	45.7	45.7	51.4	39.8	39.8	52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	45.7	45.7	51.4	39.8	39.8	52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.35	0.35	0.40	0.31	0.31	0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1263	565	218	1100	492	373	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.49		0.08	0.27		0.07	c0.38		c0.05	0.14	
v/s Ratio Perm	0.31		0.08	0.28		0.10	0.19		0.22	0.30		0.03
v/c Ratio	0.91	1.41	0.23	0.92	0.88	0.34	0.64	1.16	0.66	1.12	0.51	0.10
Uniform Delay, d1	37.6	42.1	29.7	33.6	42.8	34.9	27.3	43.5	37.2	42.4	40.3	35.7
Progression Factor	1.00	1.00	1.00	1.48	0.58	0.49	1.00	1.00	1.00	0.90	0.90	0.98
Incremental Delay, d2	29.0	187.6	0.9	37.0	9.5	1.8	3.6	82.3	2.9	113.7	0.5	0.1
Delay (s)	66.6	229.7	30.7	86.6	34.2	18.8	30.8	125.8	40.1	151.7	36.7	35.0
Level of Service	E	F	C	F	C	B	C	F	D	F	D	C
Approach Delay (s)		193.4			38.9			96.4			60.4	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM Average Control Delay	113.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1913	167	19	1140	40	22
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2079	182	21	1239	43	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.84	
vC, conflicting volume			2261		2740	1040
vC1, stage 1 conf vol					2079	
vC2, stage 2 conf vol					661	
vCu, unblocked vol			2261		2691	1040
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		45	89
cM capacity (veh/h)			223		79	227

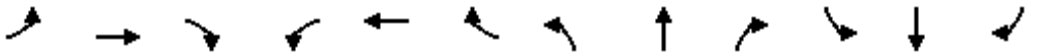
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1040	1040	182	21	620	620	43	24
Volume Left	0	0	0	21	0	0	43	0
Volume Right	0	0	182	0	0	0	0	24
cSH	1700	1700	1700	223	1700	1700	79	227
Volume to Capacity	0.61	0.61	0.11	0.09	0.36	0.36	0.55	0.11
Queue Length 95th (m)	0.0	0.0	0.0	2.3	0.0	0.0	18.1	2.6
Control Delay (s)	0.0	0.0	0.0	22.8	0.0	0.0	95.5	22.7
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.4			69.7	
Approach LOS							F	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		



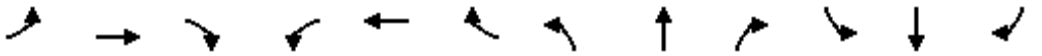
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1778	262	101	885	70	272	609	169	99	431	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.28	1.00	1.00	0.06	1.00	1.00	0.31	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	528	3592	1607	115	3592	1607	596	3592	1607	692	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1933	285	110	962	76	296	662	184	108	468	22
RTOR Reduction (vph)	0	0	51	0	0	31	0	0	77	0	0	16
Lane Group Flow (vph)	39	1933	234	110	962	45	296	662	107	108	468	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	1713	766	155	2017	902	257	1160	519	165	857	383
v/s Ratio Prot		c0.54		c0.04	0.27		c0.06	0.18			0.13	
v/s Ratio Perm	0.07		0.15	0.36		0.03	c0.31		0.07	0.16		0.00
v/c Ratio	0.15	1.13	0.31	0.71	0.48	0.05	1.15	0.57	0.21	0.65	0.55	0.02
Uniform Delay, d1	19.2	34.0	20.8	29.0	17.1	12.9	43.4	36.5	31.9	44.7	43.3	37.8
Progression Factor	0.79	0.91	0.76	1.00	1.00	1.00	0.73	0.79	0.81	1.00	1.00	1.00
Incremental Delay, d2	0.9	63.5	0.7	13.9	0.8	0.1	100.1	1.8	0.8	18.5	2.5	0.1
Delay (s)	16.1	94.3	16.6	42.9	17.9	13.0	131.9	30.6	26.8	63.1	45.8	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		83.1			19.9			56.2			48.7	
Approach LOS		F			B			E			D	

Intersection Summary			
HCM Average Control Delay	59.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



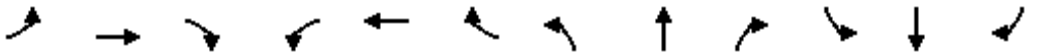
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1820	108	106	989	77	214	1068	414	64	396	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.12	1.00	1.00	0.08	1.00	1.00	0.34	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	219	3592	1607	142	3592	1607	648	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1978	117	115	1075	84	233	1161	450	70	430	118
RTOR Reduction (vph)	0	0	32	0	0	50	0	0	83	0	0	90
Lane Group Flow (vph)	224	1978	85	115	1075	34	233	1161	367	70	430	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	284	1627	728	166	1467	656	314	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.55		0.04	0.30		c0.06	c0.32		0.02	0.12	
v/s Ratio Perm	0.35		0.05	0.28		0.02	0.20		0.23	0.14		0.02
v/c Ratio	0.79	1.22	0.12	0.69	0.73	0.05	0.74	1.14	0.80	0.59	0.50	0.07
Uniform Delay, d1	23.4	35.5	20.5	29.5	32.5	23.2	34.6	46.5	43.2	38.6	42.6	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.61	0.26	1.08	1.06	1.10	1.00	1.00	1.00
Incremental Delay, d2	13.5	103.0	0.3	11.3	3.1	0.1	7.6	72.5	8.3	7.2	0.5	0.1
Delay (s)	36.9	138.5	20.9	54.3	22.8	6.1	44.8	121.6	55.8	45.8	43.0	38.2
Level of Service	D	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		122.8			24.5			95.8			42.4	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	85.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



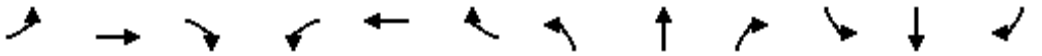
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	1891	108	36	948	241	63	40	41	184	26	96
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.25	1.00	1.00	0.04	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	470	3592	1607	83	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	2055	117	39	1030	262	68	43	45	200	28	104
RTOR Reduction (vph)	0	0	12	0	0	69	0	11	0	0	0	84
Lane Group Flow (vph)	143	2055	105	39	1030	193	68	77	0	200	28	20
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.3	91.3	91.3	91.3	91.3	91.3	24.7	24.7		24.7	24.7	24.7
Effective Green, g (s)	91.3	91.3	91.3	91.3	91.3	91.3	24.7	24.7		24.7	24.7	24.7
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	330	2523	1129	58	2523	1129	265	332		251	359	305
v/s Ratio Prot		c0.57			0.29			0.04			0.01	
v/s Ratio Perm	0.30		0.07	0.47		0.12	0.05			c0.15		0.01
v/c Ratio	0.43	0.81	0.09	0.67	0.41	0.17	0.26	0.23		0.80	0.08	0.06
Uniform Delay, d1	8.3	13.5	6.2	10.9	8.1	6.5	44.8	44.6		50.3	43.3	43.2
Progression Factor	1.45	1.41	1.87	0.96	0.65	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.0	41.3	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.4	19.3	11.5	51.7	5.7	0.6	45.3	45.0		66.2	43.4	43.3
Level of Service	B	B	B	D	A	A	D	D		E	D	D
Approach Delay (s)		18.4			6.0			45.1			57.1	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	118.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



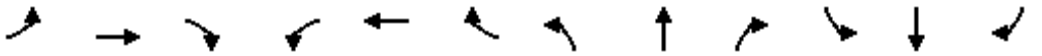
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	10	45	362	3	305	12	433	65	194	1208	9
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1659		1796	1609		1796	3592	1607	1796	3592	1607
Flt Permitted	0.40	1.00		0.72	1.00		0.12	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	754	1659		1357	1609		235	3592	1607	888	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	11	49	393	3	332	13	471	71	211	1313	10
RTOR Reduction (vph)	0	17	0	0	198	0	0	0	32	0	0	2
Lane Group Flow (vph)	38	43	0	393	137	0	13	471	39	211	1313	8
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	44.1	44.1		44.1	44.1		71.4	71.4	71.4	71.4	71.4	71.4
Effective Green, g (s)	44.1	44.1		44.1	44.1		71.4	71.4	71.4	71.4	71.4	71.4
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	563		460	546		129	1973	883	488	1973	883
v/s Ratio Prot		0.03			0.09			0.13			c0.37	
v/s Ratio Perm	0.05			c0.29			0.06		0.02	0.24		0.01
v/c Ratio	0.15	0.08		0.85	0.25		0.10	0.24	0.04	0.43	0.67	0.01
Uniform Delay, d1	29.9	29.1		40.0	31.0		14.0	15.2	13.5	17.3	20.8	13.3
Progression Factor	1.00	1.00		1.00	1.00		0.94	0.87	1.15	0.33	0.37	0.14
Incremental Delay, d2	0.3	0.1		14.3	0.2		1.5	0.3	0.1	1.1	0.7	0.0
Delay (s)	30.2	29.2		54.3	31.3		14.7	13.4	15.7	6.7	8.4	1.9
Level of Service	C	C		D	C		B	B	B	A	A	A
Approach Delay (s)		29.6			43.7			13.7			8.1	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



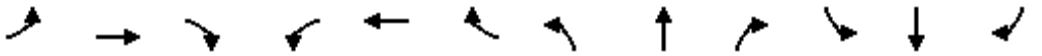
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1	23	3	0	3	6	621	1	1	1784	1
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.86		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1618		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	1891	1618		1891	1607		157	3592	1607	747	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1	25	3	0	3	7	675	1	1	1939	1
RTOR Reduction (vph)	0	11	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	15	0	3	0	0	7	675	1	1	1939	1
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	2.9	2.9		2.9	2.9		51.1	51.1	51.1	51.1	51.1	51.1
Effective Green, g (s)	2.9	2.9		2.9	2.9		51.1	51.1	51.1	51.1	51.1	51.1
Actuated g/C Ratio	0.04	0.04		0.04	0.04		0.79	0.79	0.79	0.79	0.79	0.79
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	72		84	72		123	2824	1263	587	2824	1263
v/s Ratio Prot		c0.01			0.00			0.19			c0.54	
v/s Ratio Perm	0.00			0.00			0.04		0.00	0.00		0.00
v/c Ratio	0.02	0.20		0.04	0.00		0.06	0.24	0.00	0.00	0.69	0.00
Uniform Delay, d1	29.7	29.9		29.7	29.7		1.6	1.8	1.5	1.5	3.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.36	0.34	0.31	0.81	1.01	0.81
Incremental Delay, d2	0.1	1.4		0.2	0.0		0.9	0.2	0.0	0.0	1.1	0.0
Delay (s)	29.8	31.3		29.9	29.7		1.4	0.8	0.5	1.2	4.4	1.2
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		31.2			29.8			0.8			4.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



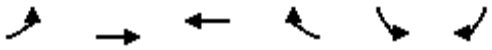
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	0	19	3	0	6	1	628	4	1	1810	3
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.08	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		149	3592	1607	741	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	21	3	0	7	1	683	4	1	1967	3
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	1	0	0	1
Lane Group Flow (vph)	17	11	0	3	0	0	1	683	3	1	1967	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		117	2818	1261	581	2818	1261
v/s Ratio Prot		0.01			0.00			0.19			c0.55	
v/s Ratio Perm	c0.01			0.00			0.01		0.00	0.00		0.00
v/c Ratio	0.20	0.14		0.03	0.00		0.01	0.24	0.00	0.00	0.70	0.00
Uniform Delay, d1	29.8	29.8		29.6	29.6		1.5	1.9	1.5	1.5	3.3	1.5
Progression Factor	1.00	1.00		1.00	1.00		0.45	0.93	0.39	1.41	1.58	1.53
Incremental Delay, d2	1.1	0.9		0.2	0.0		0.1	0.2	0.0	0.0	1.2	0.0
Delay (s)	30.9	30.6		29.8	29.6		0.8	1.9	0.6	2.1	6.4	2.3
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.8			29.7			1.9			6.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



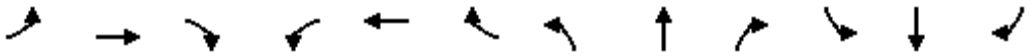
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	675	153	233	1306	44	174	528	144	103	1362	481
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.97		1.00	1.00		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5018		1796	5136		1796	4995		1796	4959	
Flt Permitted	0.13	1.00		0.14	1.00		0.07	1.00		0.35	1.00	
Satd. Flow (perm)	248	5018		262	5136		136	4995		665	4959	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	734	166	253	1420	48	189	574	157	112	1480	523
RTOR Reduction (vph)	0	28	0	0	3	0	0	38	0	0	49	0
Lane Group Flow (vph)	177	872	0	253	1465	0	189	693	0	112	1954	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.5	30.5		48.5	36.5		66.5	55.5		58.5	51.5	
Effective Green, g (s)	38.5	30.5		48.5	36.5		66.5	55.5		58.5	51.5	
Actuated g/C Ratio	0.30	0.23		0.37	0.28		0.51	0.43		0.45	0.40	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	1177		263	1442		210	2132		360	1965	
v/s Ratio Prot	0.06	0.17		c0.10	c0.29		c0.08	0.14		0.02	c0.39	
v/s Ratio Perm	0.25			0.26			0.38			0.12		
v/c Ratio	1.05	0.74		0.96	1.02		0.90	0.32		0.31	0.99	
Uniform Delay, d1	41.7	46.1		32.2	46.8		37.0	24.8		21.0	39.1	
Progression Factor	1.71	1.40		1.00	1.00		1.00	1.00		1.05	1.11	
Incremental Delay, d2	81.7	2.5		44.8	27.8		36.0	0.4		0.4	17.2	
Delay (s)	153.1	67.0		77.0	74.5		73.0	25.2		22.3	60.5	
Level of Service	F	E		E	E		E	C		C	E	
Approach Delay (s)		81.1			74.9			35.0			58.5	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM Average Control Delay	63.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



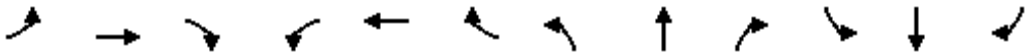
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	905	2054	23	82	173
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5153		1796	1607
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	94	5161	5153		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	984	2233	25	89	188
RTOR Reduction (vph)	0	0	1	0	0	136
Lane Group Flow (vph)	86	984	2257	0	89	52
Turn Type	pm+pt					Perm
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	103.5	103.5	92.1		12.5	12.5
Effective Green, g (s)	103.5	103.5	92.1		12.5	12.5
Actuated g/C Ratio	0.80	0.80	0.71		0.10	0.10
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	172	4109	3651		173	155
v/s Ratio Prot	c0.03	0.19	c0.44		c0.05	
v/s Ratio Perm	0.37					0.03
v/c Ratio	0.50	0.24	0.62		0.51	0.33
Uniform Delay, d1	11.9	3.3	9.8		55.9	54.9
Progression Factor	2.70	0.09	1.62		1.00	1.00
Incremental Delay, d2	2.2	0.1	0.3		2.6	1.3
Delay (s)	34.3	0.4	16.2		58.4	56.1
Level of Service	C	A	B		E	E
Approach Delay (s)		3.2	16.2		56.9	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



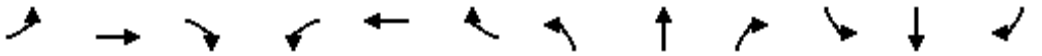
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	919	4	11	2196	4	8	0	29	15	0	28
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5158		1796	5160		1796	1607		1796	1607	
Flt Permitted	0.11	1.00		0.26	1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	207	5158		491	5160		1395	1607		1392	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	999	4	12	2387	4	9	0	32	16	0	30
RTOR Reduction (vph)	0	0	0	0	0	0	0	23	0	0	2	0
Lane Group Flow (vph)	9	1003	0	12	2391	0	9	9	0	16	28	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.5	36.5		36.5	36.5		17.5	17.5		17.5	17.5	
Effective Green, g (s)	36.5	36.5		36.5	36.5		17.5	17.5		17.5	17.5	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.27	0.27		0.27	0.27	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	2896		276	2898		376	433		375	433	
v/s Ratio Prot		0.19			c0.46			0.01			c0.02	
v/s Ratio Perm	0.04			0.02			0.01			0.01		
v/c Ratio	0.08	0.35		0.04	0.82		0.02	0.02		0.04	0.06	
Uniform Delay, d1	6.5	7.8		6.4	11.6		17.5	17.4		17.6	17.7	
Progression Factor	0.57	0.52		0.74	1.36		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		0.1	1.6		0.1	0.1		0.2	0.3	
Delay (s)	4.0	4.1		4.8	17.5		17.6	17.5		17.8	17.9	
Level of Service	A	A		A	B		B	B		B	B	
Approach Delay (s)		4.1			17.4			17.5			17.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	909	17	7	2219	6	46	0	8	13	0	35
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.98		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.96		0.95	1.00	
Satd. Flow (prot)	1796	5147		1796	5159			1776		1796	1607	
Flt Permitted	0.04	1.00		0.27	1.00			0.73		0.80	1.00	
Satd. Flow (perm)	83	5147		515	5159			1355		1507	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	988	18	8	2412	7	50	0	9	14	0	38
RTOR Reduction (vph)	0	1	0	0	0	0	0	6	0	0	35	0
Lane Group Flow (vph)	20	1005	0	8	2419	0	0	53	0	14	3	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	106.0	106.0		98.4	98.4			9.5		9.5	9.5	
Effective Green, g (s)	106.0	106.0		98.4	98.4			9.5		9.5	9.5	
Actuated g/C Ratio	0.82	0.82		0.76	0.76			0.07		0.07	0.07	
Clearance Time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	115	4197		390	3905			99		110	117	
v/s Ratio Prot	0.00	c0.20			c0.47						0.00	
v/s Ratio Perm	0.14			0.02				c0.04		0.01		
v/c Ratio	0.17	0.24		0.02	0.62			0.53		0.13	0.02	
Uniform Delay, d1	5.8	2.8		3.9	7.2			58.1		56.4	55.9	
Progression Factor	2.63	0.32		0.17	0.48			1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.4			5.4		0.5	0.1	
Delay (s)	15.8	1.0		0.7	3.9			63.5		56.9	56.0	
Level of Service	B	A		A	A			E		E	E	
Approach Delay (s)		1.2			3.8			63.5			56.3	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



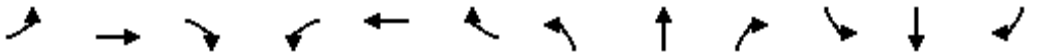
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	695	235	445	1678	135	132	324	127	202	1349	263
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	4966		1796	5103		1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00		0.12	1.00		0.10	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	265	4966		233	5103		198	3592	1607	864	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	755	255	484	1824	147	143	352	138	220	1466	286
RTOR Reduction (vph)	0	47	0	0	7	0	0	0	97	0	0	48
Lane Group Flow (vph)	74	963	0	484	1964	0	143	352	41	220	1466	238
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.9	28.5		59.5	51.1		43.7	38.2	38.2	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5		59.5	51.1		43.7	38.2	38.2	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22		0.46	0.39		0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	1089		431	2006		134	1055	472	450	1243	556
v/s Ratio Prot	0.02	0.19		c0.23	0.38		c0.05	0.10		0.05	c0.41	
v/s Ratio Perm	0.14			c0.28			0.31		0.03	0.16		0.15
v/c Ratio	0.62	0.88		1.12	0.98		1.07	0.33	0.09	0.49	1.18	0.43
Uniform Delay, d1	39.8	49.2		39.5	38.9		40.9	35.9	33.3	25.2	42.5	32.6
Progression Factor	1.00	1.00		0.93	1.08		1.00	1.00	1.00	0.77	0.73	0.63
Incremental Delay, d2	9.7	10.5		77.7	13.9		96.8	0.2	0.1	0.7	88.3	0.5
Delay (s)	49.5	59.7		114.3	55.9		137.7	36.1	33.3	20.1	119.4	21.0
Level of Service	D	E		F	E		F	D	C	C	F	C
Approach Delay (s)		59.0			67.4			58.5			94.1	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	73.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	939	61	25	2314	160	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1021	66	27	2515	174	36
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1087		2333	510
vC1, stage 1 conf vol					1021	
vC2, stage 2 conf vol					1312	
vCu, unblocked vol			1087		1668	510
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		32	93
cM capacity (veh/h)			638		254	508

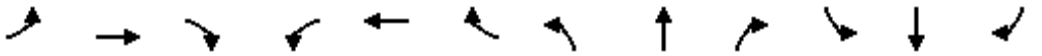
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	510	510	66	27	1258	1258	174	36
Volume Left	0	0	0	27	0	0	174	0
Volume Right	0	0	66	0	0	0	0	36
cSH	1700	1700	1700	638	1700	1700	254	508
Volume to Capacity	0.30	0.30	0.04	0.04	0.74	0.74	0.68	0.07
Queue Length 95th (m)	0.0	0.0	0.0	1.0	0.0	0.0	34.1	1.7
Control Delay (s)	0.0	0.0	0.0	10.9	0.0	0.0	45.1	12.6
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			39.6	
Approach LOS							E	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		



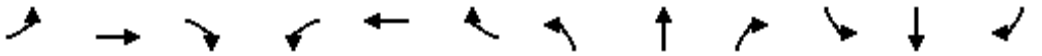
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	753	229	181	1841	117	292	336	111	79	954	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.22	1.00	1.00	0.11	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	144	3592	1607	409	3592	1607	207	3592	1607	1010	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	818	249	197	2001	127	317	365	121	86	1037	221
RTOR Reduction (vph)	0	0	104	0	0	58	0	0	75	0	0	9
Lane Group Flow (vph)	37	818	145	197	2001	69	317	365	46	86	1037	212
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	302	1810	810	238	1368	612	253	898	402
v/s Ratio Prot		0.23		0.05	c0.56		c0.13	0.10			0.29	
v/s Ratio Perm	0.26		0.09	0.28		0.04	c0.37		0.03	0.09		0.13
v/c Ratio	0.64	0.56	0.22	0.65	1.11	0.09	1.33	0.27	0.08	0.34	1.15	0.53
Uniform Delay, d1	31.1	29.9	25.4	20.4	32.2	16.7	36.8	27.7	25.7	40.0	48.8	42.1
Progression Factor	0.95	0.94	1.37	1.00	1.00	1.00	1.28	1.05	1.80	1.00	1.00	1.00
Incremental Delay, d2	40.9	1.5	0.7	5.0	56.3	0.2	174.6	0.5	0.2	3.6	82.3	4.9
Delay (s)	70.4	29.7	35.5	25.4	88.5	16.9	221.5	29.5	46.5	43.6	131.1	47.0
Level of Service	E	C	D	C	F	B	F	C	D	D	F	D
Approach Delay (s)		32.4			79.3			107.9			111.6	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	81.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



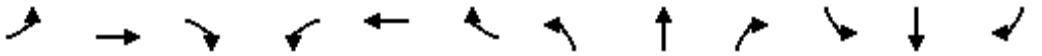
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	766	159	460	2040	47	52	269	85	60	1313	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.11	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	207	3592	1607	213	3592	1607	176	3592	1607	1055	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	833	173	500	2217	51	57	292	92	65	1427	288
RTOR Reduction (vph)	0	0	37	0	0	15	0	0	62	0	0	3
Lane Group Flow (vph)	67	833	136	500	2217	36	57	292	30	65	1427	285
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.6	36.6	36.6	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1011	452	514	2017	902	58	1188	532	349	1188	532
v/s Ratio Prot		0.23		0.24	c0.62			0.08			c0.40	
v/s Ratio Perm	0.32		0.08	0.30		0.02	0.32		0.02	0.06		0.18
v/c Ratio	1.16	0.82	0.30	0.97	1.10	0.04	0.98	0.25	0.06	0.19	1.20	0.54
Uniform Delay, d1	46.7	43.7	36.7	37.7	28.5	12.8	43.1	31.7	29.7	31.0	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.83	1.58	1.73	0.89	0.62	0.63	1.00	1.00	1.00
Incremental Delay, d2	166.6	7.6	1.7	6.9	45.5	0.0	111.2	0.1	0.0	0.3	98.8	1.0
Delay (s)	213.3	51.3	38.4	38.0	90.6	22.1	149.5	19.8	18.8	31.3	142.3	36.4
Level of Service	F	D	D	D	F	C	F	B	B	C	F	D
Approach Delay (s)		59.3			79.8			36.4			121.1	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM Average Control Delay	85.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	146.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



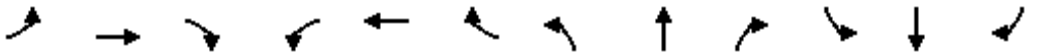
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	776	53	25	2388	82	127	11	45	177	35	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1663		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.30	1.00	1.00	0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	94	3592	1607	560	3592	1607	1171	1663		1356	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	843	58	27	2596	89	138	12	49	192	38	122
RTOR Reduction (vph)	0	0	17	0	0	8	0	36	0	0	0	52
Lane Group Flow (vph)	52	843	41	27	2596	81	138	25	0	192	38	70
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Effective Green, g (s)	80.2	80.2	80.2	80.2	80.2	80.2	35.8	35.8		22.0	22.0	22.0
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.28	0.28		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2216	991	345	2216	991	370	458		229	320	272
v/s Ratio Prot		0.23			c0.72		c0.03	0.02			0.02	
v/s Ratio Perm	0.55		0.03	0.05		0.05	0.07			c0.14		0.04
v/c Ratio	0.90	0.38	0.04	0.08	1.17	0.08	0.37	0.06		0.84	0.12	0.26
Uniform Delay, d1	21.3	12.5	9.8	10.0	24.9	10.0	37.0	34.7		52.3	45.8	46.9
Progression Factor	1.47	0.30	0.05	1.53	1.36	1.69	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	71.8	0.3	0.1	0.0	77.7	0.0	0.6	0.1		22.6	0.2	0.5
Delay (s)	103.2	4.1	0.6	15.4	111.5	17.0	37.7	34.7		74.9	45.9	47.4
Level of Service	F	A	A	B	F	B	D	C		E	D	D
Approach Delay (s)		9.3			107.4			36.8			62.3	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	78.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



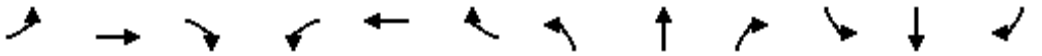
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	6	26	173	11	140	47	1232	319	100	764	36
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1664		1796	1628		1796	3592	1607	1796	3592	1607
Flt Permitted	0.55	1.00		0.73	1.00		0.32	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	1045	1664		1388	1628		610	3592	1607	317	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	7	28	188	12	152	51	1339	347	109	830	39
RTOR Reduction (vph)	0	23	0	0	58	0	0	0	55	0	0	10
Lane Group Flow (vph)	21	12	0	188	106	0	51	1339	292	109	830	29
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.3	24.3		22.8	22.8		92.7	92.7	92.7	92.7	92.7	92.7
Effective Green, g (s)	24.3	24.3		22.8	22.8		92.7	92.7	92.7	92.7	92.7	92.7
Actuated g/C Ratio	0.19	0.19		0.18	0.18		0.71	0.71	0.71	0.71	0.71	0.71
Clearance Time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	311		243	286		435	2561	1146	226	2561	1146
v/s Ratio Prot		0.01			0.07			c0.37			0.23	
v/s Ratio Perm	0.02			c0.14			0.08		0.18	0.34		0.02
v/c Ratio	0.11	0.04		0.77	0.37		0.12	0.52	0.25	0.48	0.32	0.03
Uniform Delay, d1	43.9	43.3		51.1	47.3		5.8	8.5	6.5	8.2	7.0	5.4
Progression Factor	1.00	1.00		1.00	1.00		0.31	0.28	0.25	0.56	0.44	0.21
Incremental Delay, d2	0.2	0.1		14.2	0.8		0.5	0.7	0.5	6.6	0.3	0.0
Delay (s)	44.1	43.3		65.3	48.1		2.3	3.1	2.1	11.1	3.3	1.2
Level of Service	D	D		E	D		A	A	A	B	A	A
Approach Delay (s)		43.6			57.3			2.9			4.1	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



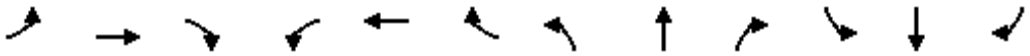
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	13	3	1	3	24	1618	6	6	1016	2
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.86		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1626		1796	1678		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.26	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1891	1626		1891	1678		485	3592	1607	204	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	14	3	1	3	26	1759	7	7	1104	2
RTOR Reduction (vph)	0	14	0	0	3	0	0	0	1	0	0	0
Lane Group Flow (vph)	1	1	0	3	1	0	26	1759	6	7	1104	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	1.4	1.4		1.4	1.4		49.6	49.6	49.6	49.6	49.6	49.6
Effective Green, g (s)	1.4	1.4		1.4	1.4		49.6	49.6	49.6	49.6	49.6	49.6
Actuated g/C Ratio	0.02	0.02		0.02	0.02		0.76	0.76	0.76	0.76	0.76	0.76
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	41	35		41	36		370	2741	1226	156	2741	1226
v/s Ratio Prot		0.00			0.00			c0.49			0.31	
v/s Ratio Perm	0.00			c0.00			0.05		0.00	0.03		0.00
v/c Ratio	0.02	0.04		0.07	0.03		0.07	0.64	0.00	0.04	0.40	0.00
Uniform Delay, d1	31.1	31.1		31.2	31.1		1.9	3.6	1.8	1.9	2.6	1.8
Progression Factor	1.00	1.00		1.00	1.00		0.08	0.15	0.01	0.84	0.73	0.85
Incremental Delay, d2	0.2	0.4		0.8	0.3		0.3	1.0	0.0	0.5	0.4	0.0
Delay (s)	31.4	31.6		31.9	31.5		0.5	1.5	0.0	2.1	2.3	1.6
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		31.6			31.7			1.5			2.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



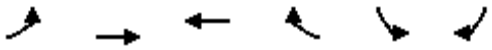
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	0	9	17	0	6	15	1648	35	12	1032	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1607		1796	1607		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.25	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1891	1607		1891	1607		467	3592	1607	196	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	10	18	0	7	16	1791	38	13	1122	17
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	6	0	0	4
Lane Group Flow (vph)	9	0	0	18	0	0	16	1791	32	13	1122	13
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	74		87	74		366	2818	1261	154	2818	1261
v/s Ratio Prot		0.00			0.00			c0.50			0.31	
v/s Ratio Perm	0.00			c0.01			0.03		0.02	0.07		0.01
v/c Ratio	0.10	0.01		0.21	0.00		0.04	0.64	0.03	0.08	0.40	0.01
Uniform Delay, d1	29.7	29.6		29.9	29.6		1.6	3.0	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.28	2.41	1.42	1.43	1.66	1.76
Incremental Delay, d2	0.5	0.0		1.2	0.0		0.1	0.3	0.0	1.0	0.4	0.0
Delay (s)	30.2	29.6		31.0	29.6		2.1	7.6	2.2	3.3	4.1	2.7
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.9			30.6			7.4			4.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



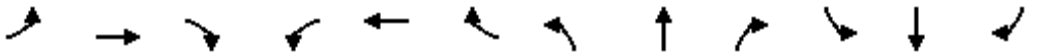
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	312	1529	209	169	860	54	165	1300	363	119	828	150
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5068		1796	5115		1796	4992		1796	5042	
Flt Permitted	0.14	1.00		0.13	1.00		0.14	1.00		0.09	1.00	
Satd. Flow (perm)	273	5068		242	5115		269	4992		178	5042	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	339	1662	227	184	935	59	179	1413	395	129	900	163
RTOR Reduction (vph)	0	13	0	0	5	0	0	39	0	0	19	0
Lane Group Flow (vph)	339	1876	0	184	989	0	179	1769	0	129	1044	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	43.5		39.2	35.7		59.5	48.5		49.4	42.4	
Effective Green, g (s)	43.5	43.5		39.2	35.7		59.5	48.5		49.4	42.4	
Actuated g/C Ratio	0.33	0.33		0.30	0.27		0.46	0.37		0.38	0.33	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1696		169	1405		277	1862		155	1644	
v/s Ratio Prot	c0.15	0.37		c0.07	0.19		0.07	c0.35		c0.04	0.21	
v/s Ratio Perm	c0.26			0.26			0.23			0.27		
v/c Ratio	1.23	1.11		1.09	0.70		0.65	0.95		0.83	0.64	
Uniform Delay, d1	36.4	43.2		56.1	42.4		23.8	39.6		32.1	37.2	
Progression Factor	0.80	0.41		1.00	1.00		1.00	1.00		1.25	0.72	
Incremental Delay, d2	127.2	55.9		94.9	1.6		5.1	12.0		29.1	1.8	
Delay (s)	156.3	73.6		151.1	44.0		28.9	51.6		69.1	28.5	
Level of Service	F	E		F	D		C	D		E	C	
Approach Delay (s)		86.2			60.7			49.5			32.9	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM Average Control Delay	60.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



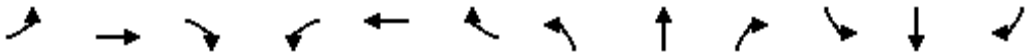
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	166	2007	1078	58	92	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5122		1796	1607
Flt Permitted	0.21	1.00	1.00		0.95	1.00
Satd. Flow (perm)	398	5161	5122		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	2182	1172	63	100	122
RTOR Reduction (vph)	0	0	3	0	0	91
Lane Group Flow (vph)	180	2182	1232	0	100	31
Turn Type	Perm					Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	103.0	103.0	103.0		13.0	13.0
Effective Green, g (s)	103.0	103.0	103.0		13.0	13.0
Actuated g/C Ratio	0.79	0.79	0.79		0.10	0.10
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	315	4089	4058		180	161
v/s Ratio Prot		0.42	0.24		c0.06	
v/s Ratio Perm	c0.45					0.02
v/c Ratio	0.57	0.53	0.30		0.56	0.19
Uniform Delay, d1	5.1	4.9	3.7		55.7	53.7
Progression Factor	1.68	1.14	0.47		1.00	1.00
Incremental Delay, d2	6.2	0.4	0.1		3.7	0.6
Delay (s)	14.8	6.0	1.9		59.4	54.3
Level of Service	B	A	A		E	D
Approach Delay (s)		6.6	1.9		56.6	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



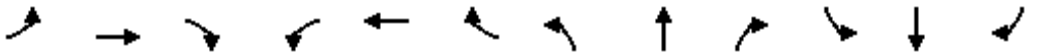
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	2086	11	15	1146	15	1	0	26	8	0	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		7.0	7.0		5.5	5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5157		1796	5151		1796	1607		1796	1607	
Flt Permitted	0.19	1.00		0.05	1.00		0.75	1.00		0.74	1.00	
Satd. Flow (perm)	360	5157		91	5151		1411	1607		1397	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	2267	12	16	1246	16	1	0	28	9	0	17
RTOR Reduction (vph)	0	1	0	0	1	0	0	16	0	0	13	0
Lane Group Flow (vph)	32	2278	0	16	1261	0	1	12	0	9	4	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	91.1	91.1		91.1	91.1		26.4	26.4		27.9	27.9	
Effective Green, g (s)	91.1	91.1		91.1	91.1		26.4	26.4		27.9	27.9	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.20	0.20		0.21	0.21	
Clearance Time (s)	5.5	5.5		5.5	5.5		7.0	7.0		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	3614		64	3610		287	326		300	345	
v/s Ratio Prot		c0.44			0.24			c0.01			0.00	
v/s Ratio Perm	0.09			0.18			0.00			0.01		
v/c Ratio	0.13	0.63		0.25	0.35		0.00	0.04		0.03	0.01	
Uniform Delay, d1	6.4	10.4		7.1	7.7		41.3	41.6		40.4	40.2	
Progression Factor	0.43	0.36		0.42	0.19		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3		2.0	0.1		0.0	0.2		0.2	0.1	
Delay (s)	2.9	4.0		5.0	1.5		41.3	41.8		40.5	40.2	
Level of Service	A	A		A	A		D	D		D	D	
Approach Delay (s)		4.0			1.6			41.8			40.3	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	2102	22	12	1131	19	15	0	7	17	2	31
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1796	5153		1796	5148			1747		1796	1623	
Flt Permitted	0.19	1.00		0.07	1.00			0.78		0.74	1.00	
Satd. Flow (perm)	361	5153		124	5148			1404		1402	1623	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	2285	24	13	1229	21	16	0	8	18	2	34
RTOR Reduction (vph)	0	0	0	0	1	0	0	8	0	0	32	0
Lane Group Flow (vph)	38	2309	0	13	1249	0	0	16	0	18	4	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	107.5	107.5		97.1	97.1			8.0		8.0	8.0	
Effective Green, g (s)	107.5	107.5		97.1	97.1			8.0		8.0	8.0	
Actuated g/C Ratio	0.83	0.83		0.75	0.75			0.06		0.06	0.06	
Clearance Time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	353	4261		93	3845			86		86	100	
v/s Ratio Prot	0.00	c0.45			0.24						0.00	
v/s Ratio Perm	0.08			0.10				0.01		c0.01		
v/c Ratio	0.11	0.54		0.14	0.32			0.19		0.21	0.04	
Uniform Delay, d1	2.4	3.5		4.6	5.5			57.9		58.0	57.4	
Progression Factor	0.63	0.63		0.38	0.40			1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		3.0	0.2			1.1		1.2	0.2	
Delay (s)	1.5	2.3		4.8	2.4			59.0		59.2	57.6	
Level of Service	A	A		A	A			E		E	E	
Approach Delay (s)		2.3			2.5			59.0			58.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



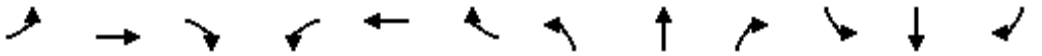
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1634	169	184	889	225	219	1270	409	142	457	82
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	5088		1796	5005		1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00		0.10	1.00		0.32	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	174	5088		190	5005		612	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1776	184	200	966	245	238	1380	445	154	497	89
RTOR Reduction (vph)	0	10	0	0	33	0	0	0	95	0	0	44
Lane Group Flow (vph)	272	1950	0	200	1178	0	238	1380	350	154	497	45
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	61.3	45.7		51.4	39.8		52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	45.7		51.4	39.8		52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.35		0.40	0.31		0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1789		218	1532		373	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.38		0.08	0.24		0.07	c0.38		c0.05	0.14	
v/s Ratio Perm	0.31			0.28			0.19		0.22	0.30		0.03
v/c Ratio	0.91	1.09		0.92	0.77		0.64	1.16	0.66	1.12	0.51	0.10
Uniform Delay, d1	36.8	42.1		33.6	40.9		27.3	43.5	37.2	42.4	40.3	35.7
Progression Factor	1.00	1.00		1.56	0.47		1.00	1.00	1.00	0.90	0.90	0.98
Incremental Delay, d2	29.0	50.4		37.9	3.7		3.6	82.3	2.9	113.7	0.5	0.1
Delay (s)	65.8	92.5		90.4	22.9		30.8	125.8	40.1	151.7	36.7	35.0
Level of Service	E	F		F	C		C	F	D	F	D	C
Approach Delay (s)		89.3			32.5			96.4			60.4	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM Average Control Delay	75.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1913	167	19	1140	40	22
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2079	182	21	1239	43	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.84	
vC, conflicting volume			2261		2740	1040
vC1, stage 1 conf vol					2079	
vC2, stage 2 conf vol					661	
vCu, unblocked vol			2261		2691	1040
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		45	89
cM capacity (veh/h)			223		79	227

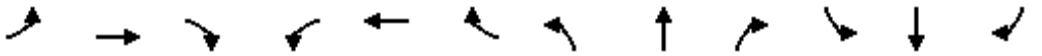
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1040	1040	182	21	620	620	43	24
Volume Left	0	0	0	21	0	0	43	0
Volume Right	0	0	182	0	0	0	0	24
cSH	1700	1700	1700	223	1700	1700	79	227
Volume to Capacity	0.61	0.61	0.11	0.09	0.36	0.36	0.55	0.11
Queue Length 95th (m)	0.0	0.0	0.0	2.3	0.0	0.0	18.1	2.6
Control Delay (s)	0.0	0.0	0.0	22.8	0.0	0.0	95.5	22.7
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.4			69.7	
Approach LOS							F	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		



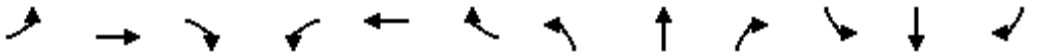
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1778	262	101	885	70	272	609	169	99	431	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.28	1.00	1.00	0.06	1.00	1.00	0.31	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	528	3592	1607	115	3592	1607	596	3592	1607	692	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1933	285	110	962	76	296	662	184	108	468	22
RTOR Reduction (vph)	0	0	51	0	0	31	0	0	77	0	0	16
Lane Group Flow (vph)	39	1933	234	110	962	45	296	662	107	108	468	6
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	1713	766	155	2017	902	257	1160	519	165	857	383
v/s Ratio Prot		c0.54		c0.04	0.27		c0.06	0.18			0.13	
v/s Ratio Perm	0.07		0.15	0.36		0.03	c0.31		0.07	0.16		0.00
v/c Ratio	0.15	1.13	0.31	0.71	0.48	0.05	1.15	0.57	0.21	0.65	0.55	0.02
Uniform Delay, d1	19.2	34.0	20.8	29.0	17.1	12.9	43.4	36.5	31.9	44.7	43.3	37.8
Progression Factor	0.79	0.91	0.76	1.00	1.00	1.00	0.75	0.81	0.81	1.00	1.00	1.00
Incremental Delay, d2	0.9	63.5	0.7	13.9	0.8	0.1	100.1	1.8	0.8	18.5	2.5	0.1
Delay (s)	16.1	94.3	16.6	42.9	17.9	13.0	132.8	31.2	26.5	63.1	45.8	37.9
Level of Service	B	F	B	D	B	B	F	C	C	E	D	D
Approach Delay (s)		83.1			19.9			56.8			48.7	
Approach LOS		F			B			E			D	

Intersection Summary			
HCM Average Control Delay	59.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	1820	108	106	989	77	214	1068	414	64	396	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.12	1.00	1.00	0.08	1.00	1.00	0.34	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	219	3592	1607	142	3592	1607	648	3592	1607	242	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	1978	117	115	1075	84	233	1161	450	70	430	118
RTOR Reduction (vph)	0	0	32	0	0	50	0	0	83	0	0	90
Lane Group Flow (vph)	224	1978	85	115	1075	34	233	1161	367	70	430	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Effective Green, g (s)	70.7	58.9	58.9	60.9	53.1	53.1	45.3	36.9	36.9	35.7	31.3	31.3
Actuated g/C Ratio	0.54	0.45	0.45	0.47	0.41	0.41	0.35	0.28	0.28	0.27	0.24	0.24
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	284	1627	728	166	1467	656	314	1020	456	119	865	387
v/s Ratio Prot	c0.08	c0.55		0.04	0.30		c0.06	c0.32		0.02	0.12	
v/s Ratio Perm	0.35		0.05	0.28		0.02	0.20		0.23	0.14		0.02
v/c Ratio	0.79	1.22	0.12	0.69	0.73	0.05	0.74	1.14	0.80	0.59	0.50	0.07
Uniform Delay, d1	23.4	35.5	20.5	29.5	32.5	23.2	34.6	46.5	43.2	38.6	42.6	38.1
Progression Factor	1.00	1.00	1.00	1.46	0.61	0.26	1.07	1.05	1.09	1.00	1.00	1.00
Incremental Delay, d2	13.5	103.0	0.3	11.3	3.1	0.1	7.6	72.5	8.3	7.2	0.5	0.1
Delay (s)	36.9	138.5	20.9	54.3	22.8	6.1	44.5	121.4	55.5	45.8	43.0	38.2
Level of Service	D	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		122.8			24.5			95.6			42.4	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	85.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



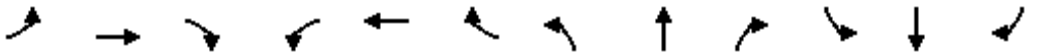
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	1891	108	36	948	241	63	40	41	184	26	96
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1746		1796	1891	1607
Flt Permitted	0.25	1.00	1.00	0.04	1.00	1.00	0.74	1.00		0.70	1.00	1.00
Satd. Flow (perm)	470	3592	1607	83	3592	1607	1397	1746		1323	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	2055	117	39	1030	262	68	43	45	200	28	104
RTOR Reduction (vph)	0	0	12	0	0	78	0	11	0	0	0	84
Lane Group Flow (vph)	143	2055	105	39	1030	184	68	77	0	200	28	20
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	91.3	91.3	91.3	91.3	91.3	91.3	24.7	24.7		24.7	24.7	24.7
Effective Green, g (s)	91.3	91.3	91.3	91.3	91.3	91.3	24.7	24.7		24.7	24.7	24.7
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.19	0.19		0.19	0.19	0.19
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	330	2523	1129	58	2523	1129	265	332		251	359	305
v/s Ratio Prot		c0.57			0.29			0.04			0.01	
v/s Ratio Perm	0.30		0.07	0.47		0.11	0.05			c0.15		0.01
v/c Ratio	0.43	0.81	0.09	0.67	0.41	0.16	0.26	0.23		0.80	0.08	0.06
Uniform Delay, d1	8.3	13.5	6.2	10.9	8.1	6.5	44.8	44.6		50.3	43.3	43.2
Progression Factor	1.45	1.41	1.87	0.96	0.65	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.0	41.3	0.4	0.3	0.5	0.4		15.9	0.1	0.1
Delay (s)	12.4	19.3	11.5	51.7	5.7	0.6	45.3	45.0		66.2	43.4	43.3
Level of Service	B	B	B	D	A	A	D	D		E	D	D
Approach Delay (s)		18.5			6.0			45.1			57.1	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	118.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix L – Synchro Output
2026 Total Condition

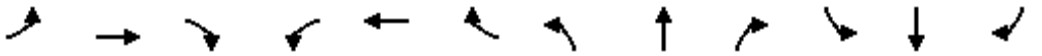
This appendix contains the following outputs in order:

- Scenario E, Total AM;
- Scenario E, Total PM.



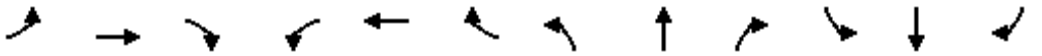
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	25	19	369	7	311	6	472	65	194	1255	16
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1766		1796	1614		1796	3592	1607	1796	3592	1607
Flt Permitted	0.39	1.00		0.73	1.00		0.11	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	732	1766		1372	1614		209	3592	1607	839	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	27	21	401	8	338	7	513	71	211	1364	17
RTOR Reduction (vph)	0	14	0	0	175	0	0	0	31	0	0	3
Lane Group Flow (vph)	63	34	0	401	171	0	7	513	40	211	1364	14
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	44.5	44.5		44.5	44.5		71.0	71.0	71.0	71.0	71.0	71.0
Effective Green, g (s)	44.5	44.5		44.5	44.5		71.0	71.0	71.0	71.0	71.0	71.0
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.55	0.55	0.55	0.55	0.55	0.55
Clearance Time (s)	7.0	7.0		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	605		470	552		114	1962	878	458	1962	878
v/s Ratio Prot		0.02			0.11			0.14			c0.38	
v/s Ratio Perm	0.09			c0.29			0.03		0.02	0.25		0.01
v/c Ratio	0.25	0.06		0.85	0.31		0.06	0.26	0.05	0.46	0.70	0.02
Uniform Delay, d1	30.8	28.7		39.7	31.5		13.9	15.6	13.7	17.9	21.6	13.5
Progression Factor	1.00	1.00		1.00	1.00		1.09	0.93	1.38	0.35	0.39	0.16
Incremental Delay, d2	0.5	0.0		14.0	0.3		1.0	0.3	0.1	1.1	0.7	0.0
Delay (s)	31.3	28.7		53.7	31.8		16.1	14.8	19.0	7.3	9.1	2.1
Level of Service	C	C		D	C		B	B	B	A	A	A
Approach Delay (s)		30.2			43.5			15.3			8.8	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



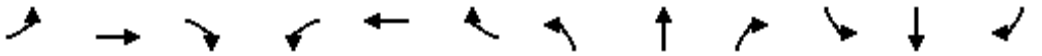
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	8	20	3	2	3	5	647	1	1	1824	5
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1689		1796	1720		1796	3592	1607	1796	3592	1607
Flt Permitted	0.93	1.00		0.93	1.00		0.08	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1759	1689		1759	1720		152	3592	1607	727	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	9	22	3	2	3	5	703	1	1	1983	5
RTOR Reduction (vph)	0	9	0	0	3	0	0	0	0	0	0	1
Lane Group Flow (vph)	18	22	0	3	2	0	5	703	1	1	1983	4
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	4.3	4.3		4.3	4.3		49.7	49.7	49.7	49.7	49.7	49.7
Effective Green, g (s)	4.3	4.3		4.3	4.3		49.7	49.7	49.7	49.7	49.7	49.7
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.76	0.76	0.76	0.76	0.76	0.76
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	112		116	114		116	2746	1229	556	2746	1229
v/s Ratio Prot		c0.01			0.00			0.20			c0.55	
v/s Ratio Perm	0.01			0.00			0.03		0.00	0.00		0.00
v/c Ratio	0.16	0.19		0.03	0.02		0.04	0.26	0.00	0.00	0.72	0.00
Uniform Delay, d1	28.6	28.7		28.4	28.4		1.9	2.2	1.8	1.8	4.0	1.8
Progression Factor	1.00	1.00		1.00	1.00		0.38	0.36	0.33	0.86	1.06	0.80
Incremental Delay, d2	0.6	0.8		0.1	0.1		0.7	0.2	0.0	0.0	1.3	0.0
Delay (s)	29.3	29.6		28.5	28.4		1.4	1.0	0.6	1.6	5.6	1.4
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.4			28.5			1.0			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



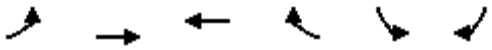
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	5	32	3	1	6	4	640	4	1	1843	6
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1642		1796	1642		1796	3592	1607	1796	3592	1607
Flt Permitted	0.83	1.00		0.83	1.00		0.08	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1575	1642		1575	1642		154	3592	1607	732	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	5	35	3	1	7	4	696	4	1	2003	7
RTOR Reduction (vph)	0	9	0	0	6	0	0	0	1	0	0	2
Lane Group Flow (vph)	32	31	0	3	2	0	4	696	3	1	2003	5
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	4.8	4.8		4.8	4.8		49.2	49.2	49.2	49.2	49.2	49.2
Effective Green, g (s)	4.8	4.8		4.8	4.8		49.2	49.2	49.2	49.2	49.2	49.2
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.76	0.76	0.76	0.76	0.76	0.76
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	121		116	121		117	2719	1216	554	2719	1216
v/s Ratio Prot		0.02			0.00			0.19			c0.56	
v/s Ratio Perm	c0.02			0.00			0.03		0.00	0.00		0.00
v/c Ratio	0.28	0.25		0.03	0.01		0.03	0.26	0.00	0.00	0.74	0.00
Uniform Delay, d1	28.5	28.4		27.9	27.9		2.0	2.4	1.9	1.9	4.3	1.9
Progression Factor	1.00	1.00		1.00	1.00		0.60	1.00	0.49	1.50	1.57	1.78
Incremental Delay, d2	1.3	1.1		0.1	0.0		0.5	0.2	0.0	0.0	1.4	0.0
Delay (s)	29.8	29.5		28.0	27.9		1.6	2.6	0.9	2.9	8.2	3.4
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		29.6			28.0			2.6			8.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



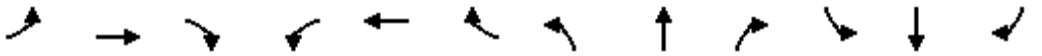
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	739	238	233	1347	44	199	542	144	103	1389	480
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.96		1.00	1.00		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	4972		1796	5137		1796	4998		1796	4962	
Flt Permitted	0.13	1.00		0.12	1.00		0.07	1.00		0.34	1.00	
Satd. Flow (perm)	248	4972		219	5137		136	4998		650	4962	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	803	259	253	1464	48	216	589	157	112	1510	522
RTOR Reduction (vph)	0	45	0	0	3	0	0	37	0	0	48	0
Lane Group Flow (vph)	174	1017	0	253	1509	0	216	709	0	112	1984	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.5	30.5		48.5	36.5		66.5	55.5		58.5	51.5	
Effective Green, g (s)	38.5	30.5		48.5	36.5		66.5	55.5		58.5	51.5	
Actuated g/C Ratio	0.30	0.23		0.37	0.28		0.51	0.43		0.45	0.40	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	1167		252	1442		210	2134		354	1966	
v/s Ratio Prot	0.06	0.20		c0.11	c0.29		c0.09	0.14		0.02	0.40	
v/s Ratio Perm	0.24			0.27			c0.44			0.13		
v/c Ratio	1.03	0.87		1.00	1.05		1.03	0.33		0.32	1.01	
Uniform Delay, d1	41.7	47.9		36.4	46.8		39.8	24.9		21.0	39.2	
Progression Factor	1.64	1.35		1.00	1.00		1.00	1.00		1.07	1.12	
Incremental Delay, d2	76.4	7.2		57.7	36.9		69.7	0.4		0.4	20.1	
Delay (s)	144.8	72.0		94.1	83.6		109.6	25.3		22.9	64.1	
Level of Service	F	E		F	F		F	C		C	E	
Approach Delay (s)		82.3			85.1			44.2			61.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM Average Control Delay	70.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



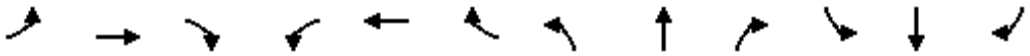
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	78	1026	2125	29	104	167
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5151		1796	1607
Flt Permitted	0.04	1.00	1.00		0.95	1.00
Satd. Flow (perm)	81	5161	5151		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	1115	2310	32	113	182
RTOR Reduction (vph)	0	0	1	0	0	134
Lane Group Flow (vph)	85	1115	2341	0	113	48
Turn Type	pm+pt					Perm
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	102.2	102.2	90.8		13.8	13.8
Effective Green, g (s)	102.2	102.2	90.8		13.8	13.8
Actuated g/C Ratio	0.79	0.79	0.70		0.11	0.11
Clearance Time (s)	4.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	161	4057	3598		191	171
v/s Ratio Prot	c0.03	0.22	c0.45		c0.06	
v/s Ratio Perm	0.39					0.03
v/c Ratio	0.53	0.27	0.65		0.59	0.28
Uniform Delay, d1	17.2	3.8	10.8		55.4	53.5
Progression Factor	2.06	0.22	1.60		1.00	1.00
Incremental Delay, d2	3.0	0.2	0.3		4.8	0.9
Delay (s)	38.5	1.0	17.6		60.3	54.4
Level of Service	D	A	B		E	D
Approach Delay (s)		3.7	17.6		56.7	
Approach LOS		A	B		E	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



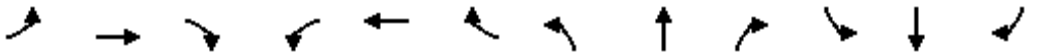
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	989	4	11	2248	19	8	0	29	71	0	129
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5158		1796	5155		1796	1607		1796	1607	
Flt Permitted	0.11	1.00		0.24	1.00		0.67	1.00		0.74	1.00	
Satd. Flow (perm)	207	5158		445	5155		1262	1607		1392	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	1075	4	12	2443	21	9	0	32	77	0	140
RTOR Reduction (vph)	0	0	0	0	1	0	0	23	0	0	1	0
Lane Group Flow (vph)	35	1079	0	12	2463	0	9	9	0	77	139	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.5	36.5		36.5	36.5		17.5	17.5		17.5	17.5	
Effective Green, g (s)	36.5	36.5		36.5	36.5		17.5	17.5		17.5	17.5	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.27	0.27		0.27	0.27	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	2896		250	2895		340	433		375	433	
v/s Ratio Prot		0.21			c0.48			0.01			c0.09	
v/s Ratio Perm	0.17			0.03			0.01			0.06		
v/c Ratio	0.30	0.37		0.05	0.85		0.03	0.02		0.21	0.32	
Uniform Delay, d1	7.5	7.9		6.4	12.0		17.5	17.4		18.4	19.0	
Progression Factor	0.60	0.53		0.80	1.32		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.1		0.1	2.0		0.1	0.1		1.2	1.9	
Delay (s)	6.0	4.3		5.2	17.9		17.6	17.5		19.6	20.9	
Level of Service	A	A		A	B		B	B		B	C	
Approach Delay (s)		4.3			17.8			17.6			20.5	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	949	17	7	2355	24	46	1	8	68	3	132
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.98		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.96		0.95	1.00	
Satd. Flow (prot)	1796	5148		1796	5153			1778		1796	1613	
Flt Permitted	0.04	1.00		0.26	1.00			0.52		0.78	1.00	
Satd. Flow (perm)	78	5148		492	5153			966		1473	1613	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	1032	18	8	2560	26	50	1	9	74	3	143
RTOR Reduction (vph)	0	1	0	0	1	0	0	6	0	0	88	0
Lane Group Flow (vph)	52	1049	0	8	2585	0	0	54	0	74	58	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	102.4	102.4		93.3	93.3			13.1		13.1	13.1	
Effective Green, g (s)	102.4	102.4		93.3	93.3			13.1		13.1	13.1	
Actuated g/C Ratio	0.79	0.79		0.72	0.72			0.10		0.10	0.10	
Clearance Time (s)	4.0	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	129	4055		353	3698			97		148	163	
v/s Ratio Prot	c0.02	0.20			c0.50						0.04	
v/s Ratio Perm	0.30			0.02				c0.06		0.05		
v/c Ratio	0.40	0.26		0.02	0.70			0.55		0.50	0.36	
Uniform Delay, d1	12.3	3.7		5.3	10.4			55.7		55.3	54.5	
Progression Factor	4.00	0.29		0.33	0.60			1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.1		0.1	0.6			6.7		2.6	1.3	
Delay (s)	50.5	1.2		1.8	6.8			62.3		58.0	55.8	
Level of Service	D	A		A	A			E		E	E	
Approach Delay (s)		3.5			6.8			62.3			56.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



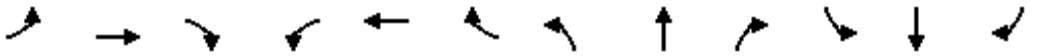
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	744	235	522	1838	122	132	342	148	199	1425	269
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	4976		1796	5113		1796	3592	1607	1796	3592	1607
Flt Permitted	0.14	1.00		0.12	1.00		0.10	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	265	4976		233	5113		197	3592	1607	833	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	809	255	567	1998	133	143	372	161	216	1549	292
RTOR Reduction (vph)	0	44	0	0	5	0	0	0	114	0	0	46
Lane Group Flow (vph)	76	1020	0	567	2126	0	143	372	47	216	1549	246
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Effective Green, g (s)	32.9	28.5		59.5	51.1		43.8	38.3	38.3	54.5	45.0	45.0
Actuated g/C Ratio	0.25	0.22		0.46	0.39		0.34	0.29	0.29	0.42	0.35	0.35
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	1091		431	2010		134	1058	473	440	1243	556
v/s Ratio Prot	0.02	0.21		c0.27	0.42		c0.05	0.10		0.05	c0.43	
v/s Ratio Perm	0.14			c0.33			0.31		0.03	0.16		0.15
v/c Ratio	0.64	0.94		1.32	1.06		1.07	0.35	0.10	0.49	1.25	0.44
Uniform Delay, d1	40.3	49.8		39.6	39.5		40.9	36.1	33.3	25.2	42.5	32.8
Progression Factor	1.00	1.00		1.07	1.00		1.00	1.00	1.00	0.78	0.74	0.65
Incremental Delay, d2	10.7	15.5		153.9	34.9		96.8	0.2	0.1	0.7	116.7	0.5
Delay (s)	51.0	65.4		196.4	74.5		137.7	36.3	33.4	20.4	148.2	21.8
Level of Service	D	E		F	E		F	D	C	C	F	C
Approach Delay (s)		64.4			100.1			57.1			116.9	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	94.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	980	59	25	2369	159	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1065	64	27	2575	173	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.50	
vC, conflicting volume			1129		2407	533
vC1, stage 1 conf vol					1065	
vC2, stage 2 conf vol					1342	
vCu, unblocked vol			1129		1817	533
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			96		29	92
cM capacity (veh/h)			614		242	492

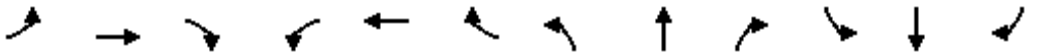
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	533	533	64	27	1288	1288	173	38
Volume Left	0	0	0	27	0	0	173	0
Volume Right	0	0	64	0	0	0	0	38
cSH	1700	1700	1700	614	1700	1700	242	492
Volume to Capacity	0.31	0.31	0.04	0.04	0.76	0.76	0.71	0.08
Queue Length 95th (m)	0.0	0.0	0.0	1.1	0.0	0.0	36.5	1.9
Control Delay (s)	0.0	0.0	0.0	11.1	0.0	0.0	49.8	12.9
Lane LOS				B			E	B
Approach Delay (s)	0.0			0.1			43.2	
Approach LOS							E	

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		



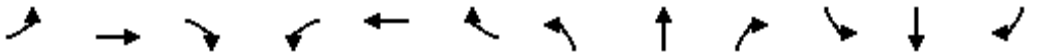
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	769	230	188	1878	117	295	364	136	79	991	203
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.08	1.00	1.00	0.21	1.00	1.00	0.11	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	144	3592	1607	394	3592	1607	207	3592	1607	980	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	836	250	204	2041	127	321	396	148	86	1077	221
RTOR Reduction (vph)	0	0	103	0	0	57	0	0	92	0	0	8
Lane Group Flow (vph)	37	836	147	204	2041	70	321	396	56	86	1077	213
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Effective Green, g (s)	52.5	52.5	52.5	65.5	65.5	65.5	49.5	49.5	49.5	32.5	32.5	32.5
Actuated g/C Ratio	0.40	0.40	0.40	0.50	0.50	0.50	0.38	0.38	0.38	0.25	0.25	0.25
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1451	649	296	1810	810	238	1368	612	245	898	402
v/s Ratio Prot		0.23		0.05	c0.57		c0.14	0.11			0.30	
v/s Ratio Perm	0.26		0.09	0.30		0.04	c0.38		0.04	0.09		0.13
v/c Ratio	0.64	0.58	0.23	0.69	1.13	0.09	1.35	0.29	0.09	0.35	1.20	0.53
Uniform Delay, d1	31.1	30.1	25.4	20.7	32.2	16.7	36.8	28.0	25.8	40.1	48.8	42.1
Progression Factor	0.94	0.92	1.27	1.00	1.00	1.00	1.31	1.04	1.85	1.00	1.00	1.00
Incremental Delay, d2	40.7	1.6	0.8	6.5	65.2	0.2	181.3	0.5	0.3	3.9	100.5	4.9
Delay (s)	69.9	29.1	33.1	27.2	97.4	16.9	229.5	29.6	48.0	44.0	149.2	47.1
Level of Service	E	C	C	C	F	B	F	C	D	D	F	D
Approach Delay (s)		31.3			87.1			106.9			126.4	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM Average Control Delay	88.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	127.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



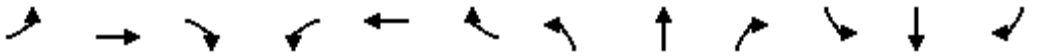
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	840	158	473	2291	68	46	270	89	66	1355	265
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.11	1.00	1.00	0.10	1.00	1.00	0.09	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	210	3592	1607	189	3592	1607	176	3592	1607	1054	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	913	172	514	2490	74	50	293	97	72	1473	288
RTOR Reduction (vph)	0	0	33	0	0	20	0	0	65	0	0	1
Lane Group Flow (vph)	67	913	139	514	2490	54	50	293	32	72	1473	287
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	36.0	36.0	36.0	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Effective Green, g (s)	36.0	36.0	36.0	73.0	73.0	73.0	43.0	43.0	43.0	43.0	43.0	43.0
Actuated g/C Ratio	0.28	0.28	0.28	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	995	445	514	2017	902	58	1188	532	349	1188	532
v/s Ratio Prot		0.25		0.25	c0.69			0.08			c0.41	
v/s Ratio Perm	0.32		0.09	0.31		0.03	0.28		0.02	0.07		0.18
v/c Ratio	1.16	0.92	0.31	1.00	1.23	0.06	0.86	0.25	0.06	0.21	1.24	0.54
Uniform Delay, d1	47.0	45.6	37.2	39.7	28.5	12.9	40.7	31.7	29.7	31.2	43.5	35.4
Progression Factor	1.00	1.00	1.00	0.77	1.38	1.48	0.89	0.59	0.54	1.00	1.00	1.00
Incremental Delay, d2	166.6	14.5	1.8	11.9	105.9	0.0	70.3	0.1	0.0	0.3	115.3	1.1
Delay (s)	213.6	60.0	39.0	42.5	145.3	19.1	106.4	18.7	16.1	31.5	158.8	36.5
Level of Service	F	E	D	D	F	B	F	B	B	C	F	D
Approach Delay (s)		65.8			125.1			28.1			134.6	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM Average Control Delay	110.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	154.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



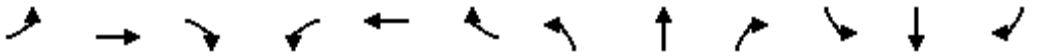
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	790	124	26	2440	79	369	21	48	176	38	112
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1694		1796	1891	1607
Flt Permitted	0.05	1.00	1.00	0.29	1.00	1.00	0.62	1.00		0.71	1.00	1.00
Satd. Flow (perm)	95	3592	1607	547	3592	1607	1169	1694		1339	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	859	135	28	2652	86	401	23	52	191	41	122
RTOR Reduction (vph)	0	0	39	0	0	8	0	38	0	0	0	12
Lane Group Flow (vph)	51	859	96	28	2652	78	401	37	0	191	41	110
Turn Type	Perm		Perm	Perm		Perm	pm+pt			Perm		Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	79.9	79.9	79.9	79.9	79.9	79.9	36.1	36.1		22.1	22.1	22.1
Effective Green, g (s)	79.9	79.9	79.9	79.9	79.9	79.9	36.1	36.1		22.1	22.1	22.1
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.28	0.28		0.17	0.17	0.17
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	58	2208	988	336	2208	988	373	470		228	321	273
v/s Ratio Prot		0.24			c0.74		c0.08	0.02			0.02	
v/s Ratio Perm	0.54		0.06	0.05		0.05	c0.22			0.14		0.07
v/c Ratio	0.88	0.39	0.10	0.08	1.20	0.08	1.08	0.08		0.84	0.13	0.40
Uniform Delay, d1	21.0	12.7	10.3	10.2	25.0	10.1	46.5	34.7		52.2	45.8	48.1
Progression Factor	1.42	0.30	0.03	1.54	1.35	1.69	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	60.7	0.3	0.1	0.0	90.9	0.0	68.1	0.1		22.6	0.2	1.0
Delay (s)	90.6	4.1	0.4	15.7	124.8	17.1	114.6	34.8		74.9	46.0	49.0
Level of Service	F	A	A	B	F	B	F	C		E	D	D
Approach Delay (s)		7.8			120.4			102.0			62.6	
Approach LOS		A			F			F			E	

Intersection Summary			
HCM Average Control Delay	88.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



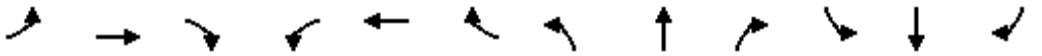
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	15	12	177	26	142	21	1286	319	100	814	57
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1763		1796	1651		1796	3592	1607	1796	3592	1607
Flt Permitted	0.51	1.00		0.74	1.00		0.30	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	965	1763		1396	1651		571	3592	1607	291	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	16	13	192	28	154	23	1398	347	109	885	62
RTOR Reduction (vph)	0	11	0	0	51	0	0	0	53	0	0	15
Lane Group Flow (vph)	36	18	0	192	131	0	23	1398	294	109	885	47
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.5	24.5		23.0	23.0		92.5	92.5	92.5	92.5	92.5	92.5
Effective Green, g (s)	24.5	24.5		23.0	23.0		92.5	92.5	92.5	92.5	92.5	92.5
Actuated g/C Ratio	0.19	0.19		0.18	0.18		0.71	0.71	0.71	0.71	0.71	0.71
Clearance Time (s)	5.5	5.5		7.0	7.0		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	182	332		247	292		406	2556	1143	207	2556	1143
v/s Ratio Prot		0.01			0.08			c0.39			0.25	
v/s Ratio Perm	0.04			c0.14			0.04		0.18	0.37		0.03
v/c Ratio	0.20	0.06		0.78	0.45		0.06	0.55	0.26	0.53	0.35	0.04
Uniform Delay, d1	44.5	43.3		51.1	47.8		5.6	8.9	6.6	8.6	7.2	5.6
Progression Factor	1.00	1.00		1.00	1.00		0.33	0.31	0.29	0.58	0.45	0.16
Incremental Delay, d2	0.5	0.1		14.2	1.1		0.2	0.7	0.5	8.3	0.3	0.1
Delay (s)	45.0	43.3		65.3	48.9		2.1	3.4	2.4	13.3	3.5	1.0
Level of Service	D	D		E	D		A	A	A	B	A	A
Approach Delay (s)		44.3			57.3			3.2			4.4	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



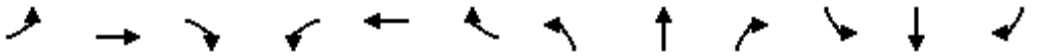
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	11	3	8	3	21	1654	6	6	1048	18
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.89		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1690		1796	1820		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.24	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1891	1690		1891	1820		458	3592	1607	183	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	12	3	9	3	23	1798	7	7	1139	20
RTOR Reduction (vph)	0	11	0	0	3	0	0	0	1	0	0	5
Lane Group Flow (vph)	11	6	0	3	9	0	23	1798	6	7	1139	15
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	2.8	2.8		2.8	2.8		48.2	48.2	48.2	48.2	48.2	48.2
Effective Green, g (s)	2.8	2.8		2.8	2.8		48.2	48.2	48.2	48.2	48.2	48.2
Actuated g/C Ratio	0.04	0.04		0.04	0.04		0.74	0.74	0.74	0.74	0.74	0.74
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	81	73		81	78		340	2664	1192	136	2664	1192
v/s Ratio Prot		0.00			0.01			c0.50			0.32	
v/s Ratio Perm	c0.01			0.00			0.05		0.00	0.04		0.01
v/c Ratio	0.14	0.08		0.04	0.12		0.07	0.67	0.01	0.05	0.43	0.01
Uniform Delay, d1	29.9	29.9		29.8	29.9		2.3	4.3	2.2	2.3	3.2	2.2
Progression Factor	1.00	1.00		1.00	1.00		0.07	0.19	0.02	0.85	0.70	0.75
Incremental Delay, d2	0.8	0.4		0.2	0.7		0.3	1.2	0.0	0.7	0.5	0.0
Delay (s)	30.7	30.3		30.0	30.6		0.5	2.0	0.0	2.6	2.7	1.7
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.5			30.5			2.0			2.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



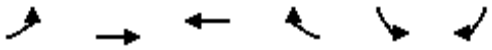
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	3	16	17	5	6	28	1673	35	12	1049	29
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.87		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	1649		1796	1725		1796	3592	1607	1796	3592	1607
Flt Permitted	1.00	1.00		1.00	1.00		0.24	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1891	1649		1891	1725		457	3592	1607	189	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	3	17	18	5	7	30	1818	38	13	1140	32
RTOR Reduction (vph)	0	16	0	0	7	0	0	0	6	0	0	7
Lane Group Flow (vph)	16	4	0	18	5	0	30	1818	32	13	1140	25
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Effective Green, g (s)	3.0	3.0		3.0	3.0		51.0	51.0	51.0	51.0	51.0	51.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.78	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	87	76		87	80		359	2818	1261	148	2818	1261
v/s Ratio Prot		0.00			0.00			c0.51			0.32	
v/s Ratio Perm	0.01			c0.01			0.07		0.02	0.07		0.02
v/c Ratio	0.18	0.05		0.21	0.07		0.08	0.65	0.03	0.09	0.40	0.02
Uniform Delay, d1	29.8	29.6		29.9	29.7		1.6	3.1	1.5	1.6	2.2	1.5
Progression Factor	1.00	1.00		1.00	1.00		1.35	2.48	1.41	1.62	1.82	2.24
Incremental Delay, d2	1.0	0.3		1.2	0.4		0.1	0.3	0.0	1.1	0.4	0.0
Delay (s)	30.8	29.9		31.0	30.0		2.3	7.9	2.2	3.7	4.4	3.5
Level of Service	C	C		C	C		A	A	A	A	A	A
Approach Delay (s)		30.3			30.6			7.7			4.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



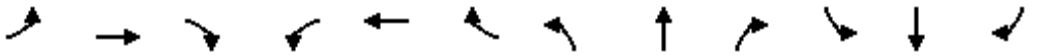
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1587	257	169	920	54	246	1324	363	119	846	147
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.91		1.00	0.91	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5053		1796	5118		1796	4994		1796	5046	
Flt Permitted	0.14	1.00		0.13	1.00		0.12	1.00		0.10	1.00	
Satd. Flow (perm)	273	5053		242	5118		231	4994		194	5046	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1725	279	184	1000	59	267	1439	395	129	920	160
RTOR Reduction (vph)	0	17	0	0	5	0	0	38	0	0	18	0
Lane Group Flow (vph)	338	1987	0	184	1054	0	267	1796	0	129	1062	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	43.5		39.2	35.7		59.5	48.5		45.9	38.9	
Effective Green, g (s)	43.5	43.5		39.2	35.7		59.5	48.5		45.9	38.9	
Actuated g/C Ratio	0.33	0.33		0.30	0.27		0.46	0.37		0.35	0.30	
Clearance Time (s)	4.0	7.5		4.0	7.5		4.0	7.5		4.0	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1691		169	1405		306	1863		155	1510	
v/s Ratio Prot	0.15	c0.39		c0.07	0.21		c0.11	c0.36		0.04	0.21	
v/s Ratio Perm	c0.26			0.26			0.29			0.25		
v/c Ratio	1.22	1.17		1.09	0.75		0.87	0.96		0.83	0.70	
Uniform Delay, d1	36.6	43.2		56.1	43.1		30.3	39.9		33.7	40.4	
Progression Factor	0.85	0.43		1.00	1.00		1.00	1.00		1.18	0.72	
Incremental Delay, d2	125.3	84.3		94.9	2.3		22.8	13.9		29.0	2.7	
Delay (s)	156.5	103.1		151.1	45.4		53.1	53.8		68.8	31.6	
Level of Service	F	F		F	D		D	D		E	C	
Approach Delay (s)		110.8			61.0			53.7			35.5	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM Average Control Delay	71.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



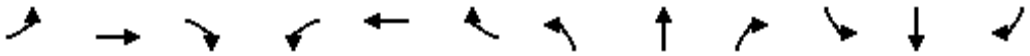
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	161	2103	1189	80	104	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1796	5161	5112		1796	1607
Flt Permitted	0.18	1.00	1.00		0.95	1.00
Satd. Flow (perm)	335	5161	5112		1796	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	2286	1292	87	113	118
RTOR Reduction (vph)	0	0	4	0	0	71
Lane Group Flow (vph)	175	2286	1375	0	113	47
Turn Type	Perm					Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	102.2	102.2	102.2		13.8	13.8
Effective Green, g (s)	102.2	102.2	102.2		13.8	13.8
Actuated g/C Ratio	0.79	0.79	0.79		0.11	0.11
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	263	4057	4019		191	171
v/s Ratio Prot		0.44	0.27		c0.06	
v/s Ratio Perm	c0.52					0.03
v/c Ratio	0.67	0.56	0.34		0.59	0.28
Uniform Delay, d1	6.2	5.3	4.1		55.4	53.5
Progression Factor	1.65	1.21	0.59		1.00	1.00
Incremental Delay, d2	10.6	0.5	0.1		4.8	0.9
Delay (s)	20.9	6.9	2.5		60.3	54.4
Level of Service	C	A	A		E	D
Approach Delay (s)		7.9	2.5		57.3	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



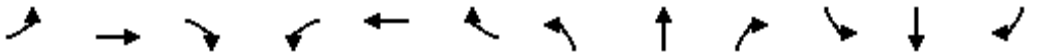
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	2150	11	15	1214	62	1	0	26	37	0	67
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	5.5		5.5	5.5		7.0	7.0		5.5	5.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1796	5157		1796	5124		1796	1607		1796	1607	
Flt Permitted	0.17	1.00		0.05	1.00		0.71	1.00		0.74	1.00	
Satd. Flow (perm)	314	5157		86	5124		1341	1607		1397	1607	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	2337	12	16	1320	67	1	0	28	40	0	73
RTOR Reduction (vph)	0	1	0	0	5	0	0	15	0	0	59	0
Lane Group Flow (vph)	134	2348	0	16	1382	0	1	13	0	40	14	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	93.9	93.9		93.9	93.9		23.6	23.6		25.1	25.1	
Effective Green, g (s)	93.9	93.9		93.9	93.9		23.6	23.6		25.1	25.1	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.18	0.18		0.19	0.19	
Clearance Time (s)	5.5	5.5		5.5	5.5		7.0	7.0		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	227	3725		62	3701		243	292		270	310	
v/s Ratio Prot		c0.46			0.27			0.01			0.01	
v/s Ratio Perm	0.43			0.19			0.00			c0.03		
v/c Ratio	0.59	0.63		0.26	0.37		0.00	0.05		0.15	0.05	
Uniform Delay, d1	8.7	9.2		6.2	6.9		43.6	43.9		43.6	42.7	
Progression Factor	0.56	0.37		0.36	0.16		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.3		2.1	0.1		0.0	0.3		1.2	0.3	
Delay (s)	8.2	3.7		4.3	1.2		43.6	44.2		44.7	43.0	
Level of Service	A	A		A	A		D	D		D	D	
Approach Delay (s)		3.9			1.2			44.2			43.6	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	2227	22	12	1199	70	15	3	7	50	4	89
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1796	5154		1796	5118			1763		1796	1618	
Flt Permitted	0.16	1.00		0.06	1.00			0.76		0.74	1.00	
Satd. Flow (perm)	296	5154		105	5118			1380		1398	1618	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	2421	24	13	1303	76	16	3	8	54	4	97
RTOR Reduction (vph)	0	0	0	0	2	0	0	5	0	0	88	0
Lane Group Flow (vph)	146	2445	0	13	1377	0	0	22	0	54	13	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	104.0	104.0		89.5	89.5			11.5		11.5	11.5	
Effective Green, g (s)	104.0	104.0		89.5	89.5			11.5		11.5	11.5	
Actuated g/C Ratio	0.80	0.80		0.69	0.69			0.09		0.09	0.09	
Clearance Time (s)	5.5	7.0		7.0	7.0			7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	341	4123		72	3524			122		124	143	
v/s Ratio Prot	0.03	c0.47			0.27						0.01	
v/s Ratio Perm	0.31			0.12				0.02		c0.04		
v/c Ratio	0.43	0.59		0.18	0.39			0.18		0.44	0.09	
Uniform Delay, d1	4.2	4.9		7.2	8.6			54.9		56.2	54.4	
Progression Factor	3.01	0.66		0.51	0.51			1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		5.2	0.3			0.7		2.4	0.3	
Delay (s)	12.7	3.3		8.9	4.7			55.6		58.6	54.7	
Level of Service	B	A		A	A			E		E	D	
Approach Delay (s)		3.9			4.7			55.6			56.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



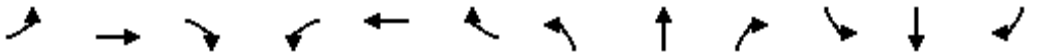
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	1787	169	227	976	218	219	1343	486	129	486	85
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	5094		1796	5020		1796	3592	1607	1796	3592	1607
Flt Permitted	0.09	1.00		0.10	1.00		0.30	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	173	5094		191	5020		567	3592	1607	216	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1942	184	247	1061	237	238	1460	528	140	528	92
RTOR Reduction (vph)	0	8	0	0	27	0	0	0	106	0	0	42
Lane Group Flow (vph)	277	2118	0	247	1271	0	238	1460	422	140	528	50
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	61.3	45.7		51.2	39.6		52.7	43.0	43.0	40.7	35.0	35.0
Effective Green, g (s)	61.3	45.7		51.2	39.6		52.7	43.0	43.0	40.7	35.0	35.0
Actuated g/C Ratio	0.47	0.35		0.39	0.30		0.41	0.33	0.33	0.31	0.27	0.27
Clearance Time (s)	4.0	8.0		4.0	8.0		4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	1791		218	1529		359	1188	532	137	967	433
v/s Ratio Prot	c0.12	c0.42		c0.10	0.25		0.07	c0.41		c0.04	0.15	
v/s Ratio Perm	0.31			0.34			0.20		0.26	0.28		0.03
v/c Ratio	0.91	1.18		1.13	0.83		0.66	1.23	0.79	1.02	0.55	0.11
Uniform Delay, d1	37.6	42.1		36.1	42.1		27.4	43.5	39.5	42.4	40.7	35.8
Progression Factor	1.00	1.00		1.35	0.52		1.00	1.00	1.00	0.87	0.90	0.92
Incremental Delay, d2	30.3	88.1		100.1	5.2		4.6	110.6	7.9	82.4	0.6	0.1
Delay (s)	67.9	130.3		148.9	26.9		32.0	154.1	47.4	119.3	37.1	33.1
Level of Service	E	F		F	C		C	F	D	F	D	C
Approach Delay (s)		123.1			46.4			115.7			51.8	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	95.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1967	165	21	1187	38	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2138	179	23	1290	41	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (m)				180		
pX, platoon unblocked					0.83	
vC, conflicting volume			2317		2829	1069
vC1, stage 1 conf vol					2138	
vC2, stage 2 conf vol					691	
vCu, unblocked vol			2317		2795	1069
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			89		44	88
cM capacity (veh/h)			212		74	217

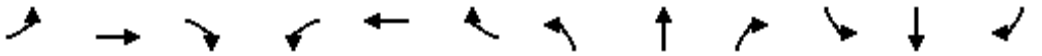
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	1069	1069	179	23	645	645	41	26
Volume Left	0	0	0	23	0	0	41	0
Volume Right	0	0	179	0	0	0	0	26
cSH	1700	1700	1700	212	1700	1700	74	217
Volume to Capacity	0.63	0.63	0.11	0.11	0.38	0.38	0.56	0.12
Queue Length 95th (m)	0.0	0.0	0.0	2.7	0.0	0.0	18.3	3.1
Control Delay (s)	0.0	0.0	0.0	24.0	0.0	0.0	104.1	23.8
Lane LOS				C			F	C
Approach Delay (s)	0.0			0.4			73.0	
Approach LOS							F	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		



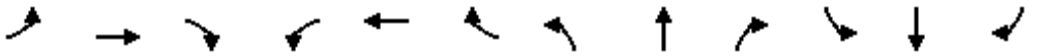
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1814	266	127	904	70	274	635	183	99	457	20
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.27	1.00	1.00	0.06	1.00	1.00	0.29	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	511	3592	1607	115	3592	1607	550	3592	1607	647	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1972	289	138	983	76	298	690	199	108	497	22
RTOR Reduction (vph)	0	0	50	0	0	28	0	0	77	0	0	15
Lane Group Flow (vph)	39	1972	239	138	983	48	298	690	122	108	497	7
Turn Type	Perm		Perm	pm+pt		Perm	pm+pt		Perm	Perm		Perm
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Effective Green, g (s)	62.0	62.0	62.0	73.0	73.0	73.0	42.0	42.0	42.0	31.0	31.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48	0.56	0.56	0.56	0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	1713	766	155	2017	902	245	1160	519	154	857	383
v/s Ratio Prot		c0.55		c0.05	0.27		c0.07	0.19			0.14	
v/s Ratio Perm	0.08		0.15	0.45		0.03	c0.33		0.08	0.17		0.00
v/c Ratio	0.16	1.15	0.31	0.89	0.49	0.05	1.22	0.59	0.23	0.70	0.58	0.02
Uniform Delay, d1	19.3	34.0	20.9	34.8	17.2	12.9	43.3	36.9	32.2	45.3	43.7	37.9
Progression Factor	0.78	0.88	0.73	1.00	1.00	1.00	0.77	0.82	0.81	1.00	1.00	1.00
Incremental Delay, d2	0.9	72.8	0.7	42.0	0.8	0.1	125.1	1.9	0.9	23.4	2.9	0.1
Delay (s)	15.8	102.8	16.0	76.8	18.0	13.0	158.3	32.2	27.1	68.6	46.6	37.9
Level of Service	B	F	B	E	B	B	F	C	C	E	D	D
Approach Delay (s)		90.4			24.5			63.0			50.1	
Approach LOS		F			C			E			D	

Intersection Summary			
HCM Average Control Delay	64.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	206	2078	102	113	1131	89	211	1098	428	83	398	109
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	3592	1607	1796	3592	1607
Flt Permitted	0.07	1.00	1.00	0.08	1.00	1.00	0.33	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	133	3592	1607	143	3592	1607	632	3592	1607	248	3592	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	2259	111	123	1229	97	229	1193	465	90	433	118
RTOR Reduction (vph)	0	0	27	0	0	51	0	0	86	0	0	90
Lane Group Flow (vph)	224	2259	84	123	1229	46	229	1193	380	90	433	28
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	71.5	59.6	59.6	60.8	52.9	52.9	44.5	35.0	35.0	36.0	30.5	30.5
Effective Green, g (s)	71.5	59.6	59.6	60.8	52.9	52.9	44.5	35.0	35.0	36.0	30.5	30.5
Actuated g/C Ratio	0.55	0.46	0.46	0.47	0.41	0.41	0.34	0.27	0.27	0.28	0.23	0.23
Clearance Time (s)	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	1647	737	167	1462	654	306	967	433	134	843	377
v/s Ratio Prot	c0.10	c0.63		0.04	0.34		c0.06	c0.33		0.03	0.12	
v/s Ratio Perm	0.38		0.05	0.30		0.03	0.20		0.24	0.16		0.02
v/c Ratio	0.86	1.37	0.11	0.74	0.84	0.07	0.75	1.23	0.88	0.67	0.51	0.07
Uniform Delay, d1	37.5	35.2	20.1	29.6	34.8	23.5	35.1	47.5	45.4	38.6	43.3	38.7
Progression Factor	1.00	1.00	1.00	1.23	0.62	0.24	1.07	1.05	1.09	1.00	1.00	1.00
Incremental Delay, d2	24.1	171.2	0.3	14.4	5.6	0.2	7.8	112.5	14.7	12.5	0.5	0.1
Delay (s)	61.6	206.4	20.4	51.0	27.2	5.8	45.4	162.3	64.1	51.1	43.8	38.8
Level of Service	E	F	C	D	C	A	D	F	E	D	D	D
Approach Delay (s)		185.9			27.8			123.9			43.9	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	119.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1931	364	39	966	239	207	46	43	181	36	95
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1796	3592	1607	1796	3592	1607	1796	1753		1796	1891	1607
Flt Permitted	0.24	1.00	1.00	0.04	1.00	1.00	0.73	1.00		0.69	1.00	1.00
Satd. Flow (perm)	455	3592	1607	84	3592	1607	1383	1753		1312	1891	1607
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	2099	396	42	1050	260	225	50	47	197	39	103
RTOR Reduction (vph)	0	0	42	0	0	80	0	10	0	0	0	83
Lane Group Flow (vph)	142	2099	354	42	1050	180	225	87	0	197	39	20
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	90.2	90.2	90.2	90.2	90.2	90.2	25.8	25.8		25.8	25.8	25.8
Effective Green, g (s)	90.2	90.2	90.2	90.2	90.2	90.2	25.8	25.8		25.8	25.8	25.8
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.20	0.20		0.20	0.20	0.20
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	316	2492	1115	58	2492	1115	274	348		260	375	319
v/s Ratio Prot		c0.58			0.29			0.05			0.02	
v/s Ratio Perm	0.31		0.22	0.50		0.11	c0.16			0.15		0.01
v/c Ratio	0.45	0.84	0.32	0.72	0.42	0.16	0.82	0.25		0.76	0.10	0.06
Uniform Delay, d1	8.9	14.7	7.8	12.2	8.6	6.9	49.9	44.0		49.2	42.6	42.3
Progression Factor	1.44	1.41	1.86	0.93	0.64	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.1	47.4	0.4	0.3	17.6	0.4		11.9	0.1	0.1
Delay (s)	13.2	21.1	14.6	58.8	5.9	0.6	67.5	44.3		61.1	42.8	42.4
Level of Service	B	C	B	E	A	A	E	D		E	D	D
Approach Delay (s)		19.7			6.5			60.5			53.3	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	120.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Table M1 (Stage 1 - Kennedy Road /Wilfred Murison)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**Kennedy Road**	**0perating Speed :**	**60**	**Kph**	**No. of lanes :**	**4**	**(Restricted Flow Conditions)**
Minor Street:	**Wilfred Murison**	**0perating Speed :**	**60**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2021**	**(Stage 1)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Northbound	R	1	6	2
		T	595	1654	562
		L	12	21	8
		Ped			
Minor Approach	Westbound	R	3	3	2
		T	0	0	0
		L	3	3	2
		Ped			
Major Approach	Southbound	R	0	6	2
		T	1730	982	678
		L	1	0	0
		Ped			
Minor Approach	Eastbound	R	48	0	12
		T	0	0	0
		L	0	26	7
		Ped			

Approach Lanes	**Minimum requirement More than 2 lanes Restricted Flow Conditions**		**AHV**	**% WARR.**	**120% SATIS.**	**100% SATIS.**
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1274**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**22**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		13%	**13%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1252**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**8**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		5%	**5%**		

All aprroach	2393	2701	1274
Minor approach	54	32	22
Major approach	2339	2669	1252
Major St. X'ings	3	29	8

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

	Free Flow			**Restricted Flow**		
	2 lanes	**4 lanes**	**"T"**	**2 lanes**	**4 lanes**	**"T"**
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M1

Table M2 (Stage 2 - Kennedy Road /Wilfred Murison)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**Kennedy Road**	**0perating Speed :**	**60**	**Kph**	**No. of lanes :**	**4**	**(Restricted Flow Conditions)**
Minor Street:	**Wilfred Murison**	**0perating Speed :**	**40**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2024**	**(Stage 2)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Northbound	R	1	1618	405
		T	621	1618	560
		L	6	24	8
		Ped			
Minor Approach	Westbound	R	3	3	2
		T	0	0	0
		L	3	3	2
		Ped			
Major Approach	Southbound	R	1	2	1
		T	1784	1019	701
		L	1	6	2
		Ped			
Minor Approach	Eastbound	R	2	13	4
		T	1	1	1
		L	23	1	6
		Ped			

Approach Lanes	**Minimum requirement More than 2 lanes Restricted Flow Conditions**		**AHV**	**% WARR.**	**120% SATIS.**	**100% SATIS.**
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1689**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**13**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		8%	**8%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1675**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**8**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		5%	**5%**		

All aprroach	2446	4308	1689
Minor approach	32	21	13
Major approach	2414	4287	1675
Major St. X'ings	27	5	8

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

	Free Flow			Restricted Flow		
	2 lanes	**4 lanes**	**"T"**	**2 lanes**	**4 lanes**	**"T"**
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M2

Table M3 (Stage 3 - Kennedy Road /Wilfred Murison)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**Kennedy Road**	**0perating Speed :**	**60**	**Kph**	**No. of lanes :**	**4**	**(Restricted Flow Conditions)**
Minor Street:	**Wilfred Murison**	**0perating Speed :**	**40**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2026**	**(Stage 3)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Northbound	R	5	6	3
		T	1824	1654	870
		L	1	21	6
		Ped			
Minor Approach	Westbound	R	3	3	2
		T	2	8	3
		L	133	3	34
		Ped			
Major Approach	Southbound	R	1	18	5
		T	647	1048	424
		L	5	6	3
		Ped			
Minor Approach	Eastbound	R	20	11	8
		T	8	5	3
		L	17	10	7
		Ped			

Approach Lanes	**Minimum requirement More than 2 lanes Restricted Flow Conditions**		**AHV**	**% WARR.**	**120% SATIS.**	**100% SATIS.**
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1365**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**56**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		33%	**33%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1309**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**45**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		26%	**26%**		

All aprroach	2666	2793	1365
Minor approach	183	40	56
Major approach	2483	2753	1309
Major St. X'ings	158	21	45

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

	Free Flow			**Restricted Flow**		
	2 lanes	**4 lanes**	**"T"**	**2 lanes**	**4 lanes**	**"T"**
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M3

Table M4 (Stage 1 -Major Mackenzie Dr./Prospectors Dr.)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**Major Mackenzie Dr.**	**0perating Speed :**	**80**	**Kph**	**No. of lanes :**	**4**	**(Free Flow Conditions)**
Minor Street:	**Propectors Dr.**	**0perating Speed :**	**60**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2021**	**(Stage 1)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Westbound	R	10	33	11
		T	2249	1112	840
		L	24	17	10
		Ped			
Minor Approach	Northbound	R	31	21	13
		T	0	0	0
		L	138	26	41
		Ped			
Major Approach	Eastbound	R	54	143	49
		T	917	1861	695
		L	7	22	7
		Ped			
Minor Approach	Southbound	R	22	14	9
		T	0	0	0
		L	33	20	13
		Ped			

	am PHV	pm PHV	AHV
All aprroach	3485	3269	1689
Minor approach	224	81	76
Major approach	3261	3188	1612
Major St. X'ings	171	46	54

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

Approach Lanes	Minimum requirement: More than 2 lanes (Free Flow Conditions)		AHV	% WARR.	120% SATIS.	100% SATIS.
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1689**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**76**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		64%	**64%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1612**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**54**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		45%	**45%**		

	Free Flow			Restricted Flow		
	2 lanes	4 lanes	"T"	2 lanes	4 lanes	"T"
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M4

Table M5 (Stage 2 -Major Mackenzie Dr./Prospectors Dr.)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**Major Mackenzie Dr.**	**0perating Speed :**	**80**	**Kph**	**No. of lanes :**	**4**	**(Free Flow Conditions)**
Minor Street:	**Propectors Dr.**	**0perating Speed :**	**60**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2024**	**(Stage 2)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Westbound	R	10	33	11
		T	2314	1140	864
		L	25	19	11
		Ped			
Minor Approach	Northbound	R	33	22	14
		T	0	0	0
		L	160	40	50
		Ped			
Major Approach	Eastbound	R	61	167	57
		T	939	1913	713
		L	7	22	7
		Ped			
Minor Approach	Southbound	R	22	14	9
		T	0	0	0
		L	33	20	13
		Ped			

	am PHV	pm PHV	AHV
All aprroach	3604	3390	1749
Minor approach	248	96	86
Major approach	3356	3294	1663
Major St. X'ings	193	60	63

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

Approach Lanes	Minimum requirement: More than 2 lanes (Free Flow Conditions)		AHV	% WARR.	120% SATIS.	100% SATIS.
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1749**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**86**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		72%	**72%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1663**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**63**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		53%	**53%**		

	Free Flow			Restricted Flow		
	2 lanes	4 lanes	"T"	2 lanes	4 lanes	"T"
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M5

Table M6(Stage3 -Major Mackenzie Dr./Prospectors Dr.)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• **DATA INPUT**

Major Street:	**Major Mackenzie Dr.**	**0perating Speed :**	**80**	**Kph**	**No. of lanes :**	**4**	**(Free Flow Conditions)**
Minor Street:	**Propectors Dr.**	**0perating Speed :**	**60**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2026**	**(Stage 3)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Westbound	R	10	33	11
		T	2369	1187	889
		L	25	21	12
		Ped			
Minor Approach	Northbound	R	35	24	15
		T	0	0	0
		L	159	38	49
		Ped			
Major Approach	Eastbound	R	59	165	56
		T	980	1967	737
		L	7	22	7
		Ped			
Minor Approach	Southbound	R	22	14	9
		T	0	0	0
		L	33	20	13
		Ped			

	am PHV	pm PHV	AHV
All aprroach	3699	3491	1798
Minor approach	249	96	86
Major approach	3450	3395	1711
Major St. X'ings	192	58	63

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

Approach Lanes	**Minimum requirement More than 2 lanes (Free Flow Conditions)**		**AHV**	**% WARR.**	**120% SATIS.**	**100% SATIS.**
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1798**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**86**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		72%	**72%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1711**		**No**	**No**
	120% fulfilled.	600	120%			
	100% fulfilled	480	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**63**			
	120% fulfilled.	120	0%			
	100% fulfilled	96	0%			
	below 100%		52%	**52%**		

	Free Flow			**Restricted Flow**		
	2 lanes	**4 lanes**	**"T"**	**2 lanes**	**4 lanes**	**"T"**
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If <u>not</u> warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M6

Table M7 Stage 3 -Major Mackenzie Dr./Prospectors Dr.)
Traffic Signal Warrant Analysis - Justification 7 (existing intersection, future conditions)

•••• DATA INPUT

Major Street:	**16th Avenue**	**0perating Speed :**	**60**	**Kph**	**No. of lanes :**	**4**	**(Restricted Flow Conditions)**
Minor Street:	**Propectors Dr.**	**0perating Speed :**	**60**	**Kph**			
"T" Intersect.	**N**	**("Y" or "N")**					
Year of Count	**2026**	**(Stage 3)**					

		App.	am PHV	pm PHV	AHV
Major Approach	Westbound	R	19	62	20
		T	2248	1214	866
		L	11	15	7
		Ped			
Minor Approach	Northbound	R	29	26	14
		T	0	0	0
		L	8	1	2
		Ped			
Major Approach	Eastbound	R	4	11	4
		T	989	2150	785
		L	32	123	39
		Ped			
Minor Approach	Southbound	R	129	67	49
		T	0	0	0
		L	71	37	27
		Ped			

All aprroach	3540	3706	1812		
Minor approach	237	131	92		
Major approach	3303	3575	1720		
Major St. X'ings	79	100	45		

NOTE: This sheet performs the calculations for signal justification #7. This justification is outlined in the Ontario Traffic Manual Book 12 (November 2007 ed.). The Average Hour Volumes (AHV) are based on 50% of the average of the Peak Hour Volumes (PHV).

Approach Lanes	**Minimum requirement More than 2 lanes Restricted Flow Conditions**		**AHV**	**% WARR.**	**120% SATIS.**	**100% SATIS.**
• WARRANT 1 - MINIMUM VEHICLE VOLUME						
Major Approaches (1A)	Volumes		**1812**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Minor Street both Approaches (1B)	Volumes		**92**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		54%	**54%**		
• WARRANT 2 - DELAY TO CROSS TRAFFIC						
Major Street Both Approach (2A)	Volumes		**1720**		**No**	**No**
	120% fulfilled.	900	120%			
	100% fulfilled	720	0%			
	below 100%		0%	**120%**		
Traffic Crossing Major Street (2B)	Volumes		**45**			
	120% fulfilled.	170	0%			
	100% fulfilled	136	0%			
	below 100%		26%	**26%**		

	Free Flow			**Restricted Flow**		
	2 lanes	**4 lanes**	**"T"**	**2 lanes**	**4 lanes**	**"T"**
1A	480	600		720	900	
1B	120		180	170		255
2A	480	600		720	900	
2B	50	120		75	170	

Notes 1B value will increase 50% when it is a "T" intersection. Basic value for FF = 120, RF= 170

CONCLUSION

TRAFFIC SIGNAL WARRANTED? : ***No***

If not warranted, protect for future signal? : ***No***

Note: This is a warrant analysis for an **existing intersection** under future conditions. Thus, a signal is warranted when any one warrant satisfies **120%**. A future signal should be protected for if any one warrant satisfies 100%.

Table M7