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Transportation Master Plan

Town of Calmar

September 2025





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Daniel Zeggelaar, P.Eng., PTOE, PTP, RSP1
Transportation Project Manager



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ACRONYMS

Acronym	Description
AADT	Average Annual Daily Traffic
ASP	Area Structure Plan
CVP	Community Vitalization Plan
ITE	Institute of Transportation Engineers
LOS	Level of Service
LUB	Land Use Bylaw
MDP	Municipal Development Plan
OF	Overhead Flashers
PCCG	Pedestrian Crossing Control Guide
RAU	Rural Arterial Undivided
ROW	Right of Way
RRFB	Rectangular Rapid Flashing Beacons
TAC	Transportation Association of Canada
TACGDG	TAC Geometric Design Guide
TEC	Transportation and Economic Corridors
TEC HGDG	TEC Highway Geometric Design Guide
TMP	Transportation Master Plan
UAD	Urban Arterial Divided
UAD	Urban Arterial Undivided
V/C	Volume to Capacity

UNITS

Unit	Description
m	Meters
s	Seconds
k/hr	Kilometers per hour
ha	Hectares
Vpd	Vehicles Per Day
%	Percent
\$	Dollars

1.0 Introduction

The Town of Calmar (Town) retained ISL Engineering and Land Services Ltd. (ISL) to complete a review of its existing transportation system, to assess the transportation networks capacity to service existing and future growth effectively. A review and assessment of the transportation system was conducted to generate this Transportation Master Plan (TMP).

1.1 Background

The original TMP was completed in 2001 (ISL, 2001). Since then, there has been continued development in the Town. To support growth and infrastructure performance in the Town, there is a need to update the previous master plan to reflect the current system conditions, assess the limitations of the existing system, and develop a capital improvement plan to accommodate future growth.

The updated TMP will help the Town assess the implications of servicing new developments by understanding the transportation network's current capacity and constraints.

1.2 Purpose of Study

The objectives of the Transportation Master Plan Update include the following:

- Review current and future land use and population.
- Conduct public engagement to receive feedback from residents and communicate the master plan update's objectives and preliminary results. Findings from public engagement are integrated into this TMP.
- Create a travel demand forecasting model to assess existing and future transportation system capacity and identify constraints.
- Complete a collision/safety review to understand trends and potential probable causes
- Review the downtown revitalization plan.
- Review traffic calming requirements.
- Review active transportation network to identify existing configuration and identify gaps.
- Complete site-specific reviews based on Town's staff and residents concerns.
- Review and recommendation options for servicing of short-term and long-term development objectives for the Town.
- Develop a 10-year Capital Improvement Plan.
- Prepare Class "D" cost estimates for the 10-year Capital Improvement Plan.
- Submit the TMP to Transportation and Economic Corridors (TEC) for endorsement. This document may be used to create a Highway Vicinity Management Agreement (HVMA), which could exempt the need for future transportation studies.

2.0 Land Use

Calmar's strategic policy direction for existing and future land use, transportation, and servicing stems from the Town's primary planning document: the 50-year (2018-2068) Municipal Development Plan (MDP). The MDP defines the Town's vision for the future, divides the community into several land use designation policy areas, and identifies transportation and servicing network efficiencies.

At a slightly more detailed level of policy for certain sub-areas of the Town, five (5) area structure plans (ASPs) are in effect – Thomas Creek, Southbridge, Hawks Landing, Engberg Estates, and Calmar Industrial (aka Hi-Way 39 Industrial Park).

To implement MDP and ASP policies, the Town's Land Use Bylaw (LUB) establishes provisions and regulations for development and divides Calmar into different land use districts. A solid understanding of existing and future land uses in Calmar is necessary for formulating assumptions in this TMP.

Planning hierarchy is shown below. A TMP is typically a non-statutory plan that is accepted or adopted by council for information.

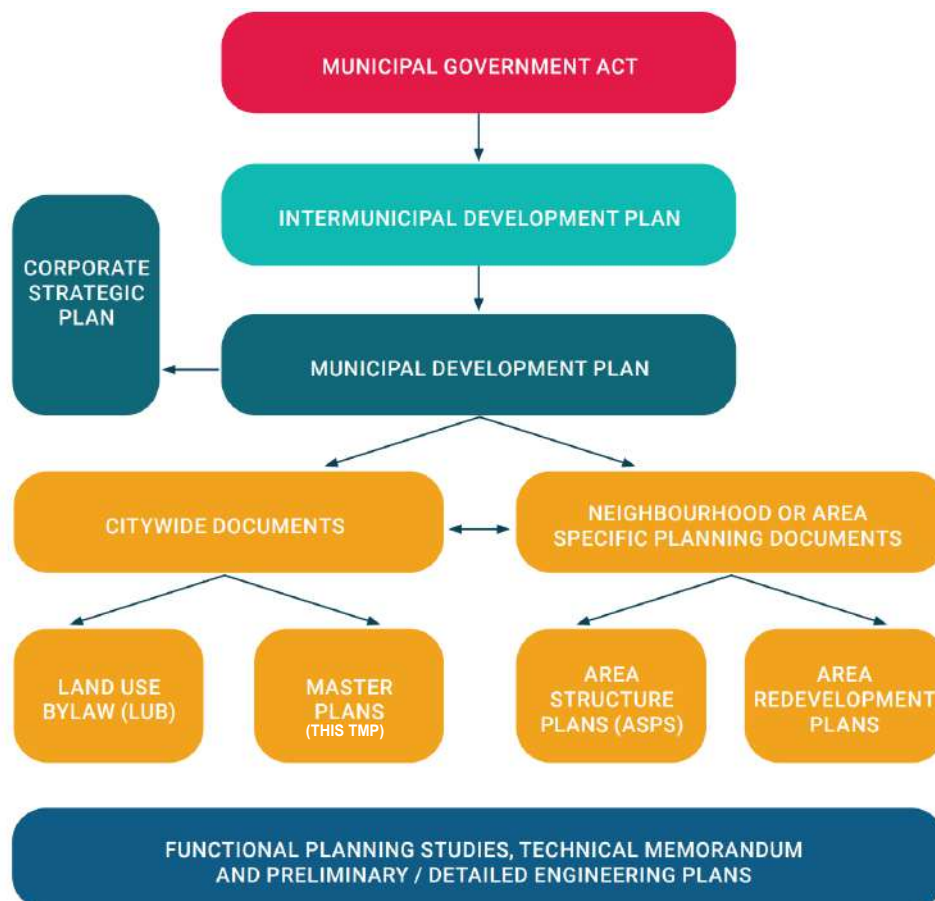


Figure 2.1: Planning Document Hierarchy

2.2 Existing Land Use

In the built-up portions of the Town, the predominant types of land use districts that apply are residential, commercial, industrial, and public in nature. In four undeveloped areas, the Urban Reserve District applies. Of these four areas, two have ASPs in effect to guide future redistricting in advance of subdivision and/or development. The existing land uses in Calmar's built-up area are illustrated in **Exhibit 2.1**. The Town's current land use district map from the LUB is provided in Appendix A.

2.3 Planned Future Land Use

The planned future land use is based on existing ASPs and the future land use concept from the MDP. Key areas include:

- In the southwest corner of the Town, the undeveloped SW 25 is designated for a mix of future park and industrial land uses. It is not yet subject to an ASP.
- To the north of the Canadian National rail line, NW 25 is predominantly a planned residential neighbourhood in the MDP with future commercial along the Highway 39 and future park to the west. NW 25 is subject to the Thomas Creek ASP.
- To the east of Thomas Creek, the undeveloped portions of NE 25 are planned as a residential neighbourhood in the MDP. Future development of the undeveloped lands is guided by the Southbridge ASP.
- In the southeast corner of Calmar, the MDP designates the undeveloped portions of NW 30 for future commercial along Highway 39 and special study area to the south. No ASP is in effect to the undeveloped lands in NW 30.
- In the northwest corner of the Town, undeveloped portions of SE 36 are designated as future/planned residential neighbourhood in the MDP. Undeveloped lands in SE 36 are subject to the Hawks Landing ASP.
- To the east of Hawks Landing, the undeveloped portions of SW 31 are designated as future residential neighbourhood in the Town's MDP. These lands are further subject to the Engberg ASP.
- In the northeast corner of Calmar, the MDP designates the undeveloped portions of SE 31 for future industrial. The subject lands are guided by the Calmar Industrial ASP, also known as the Hi-Way 39 Industrial Park ASP.

The MDP and ASP land use concepts are provided in **Appendix A**.

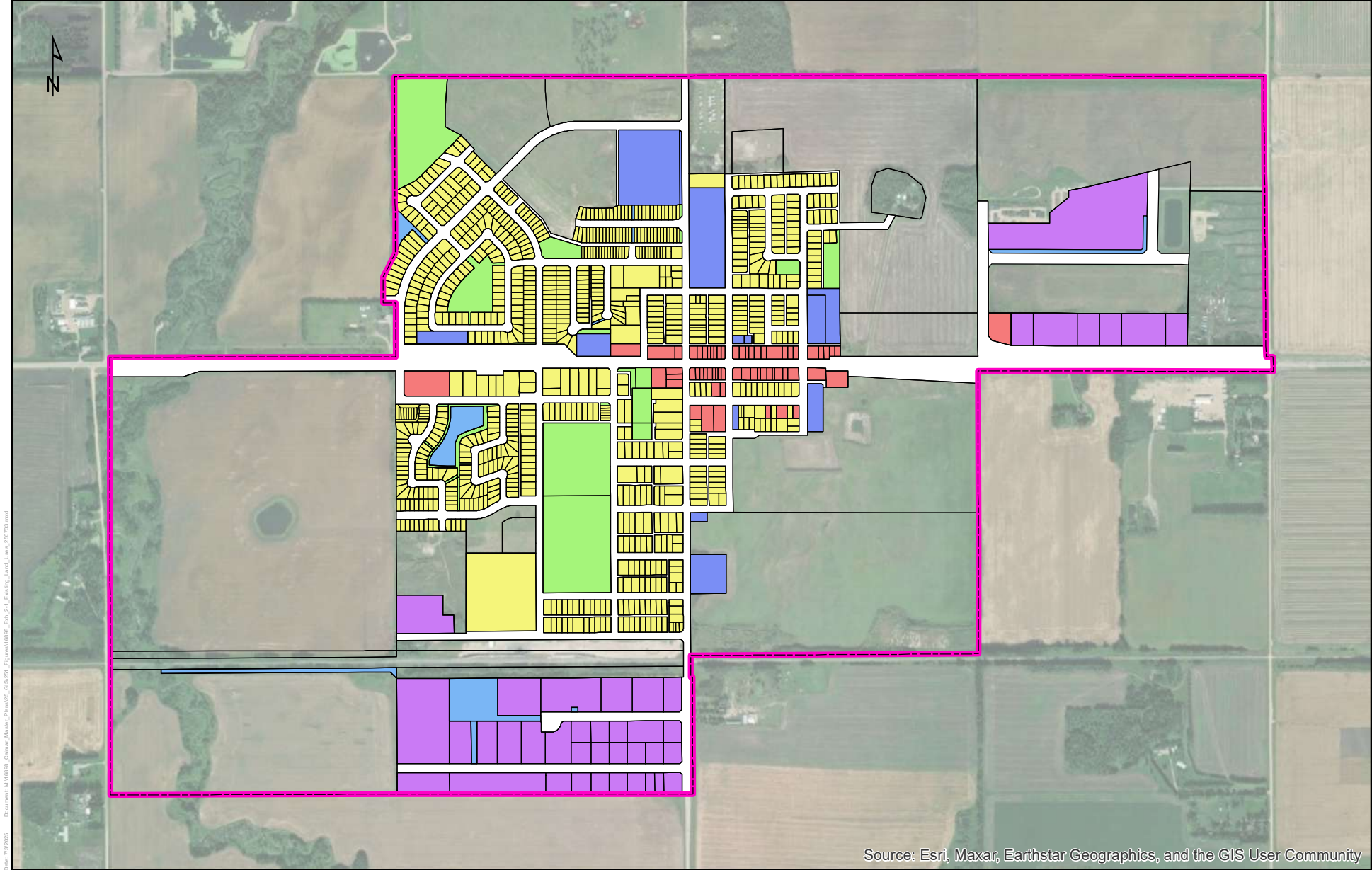
2.4 2045 Land Use Assumptions

A series of land use assumptions were made for the 2045 horizon of the TMP with assistance from Town staff. These assumptions are illustrated in **Exhibit 2.2** and summarized below by land use.

Residential Growth

In terms of future low density residential, it is assumed that the following will be subdivided:

- 65 lots in the Thomas Creek ASP;
- The remaining 82 lots in the Southbridge ASP; and
- 226 lots in the Hawks Landing ASP.



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Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

TOWN OF CALMAR

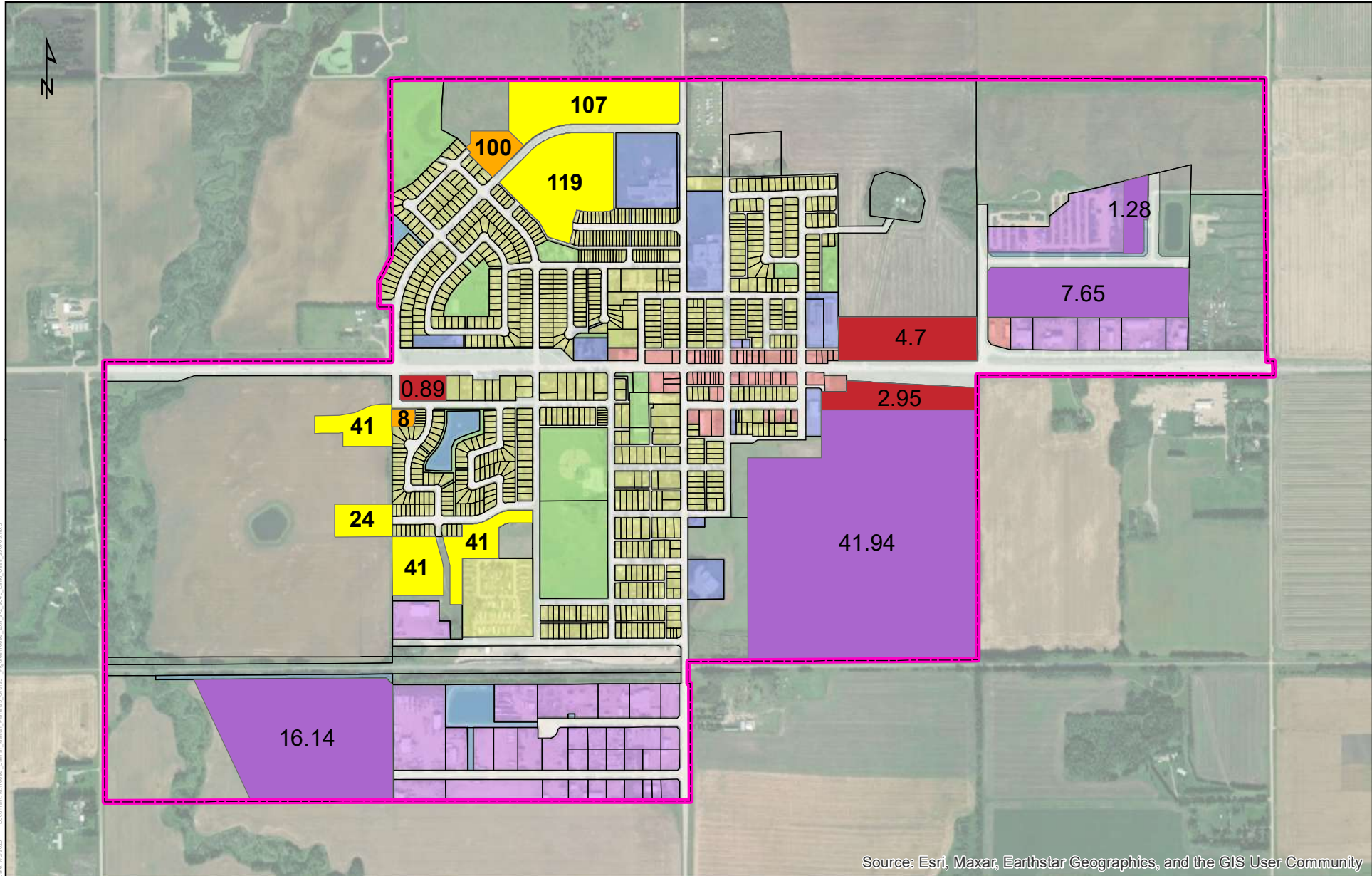
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Town	Absorbed Land (net)	Absorbed Overheads (net)
Parcel	Residential	Parks and Open Space
	Commercial	Public Utility
	Industrial	Circulation
	Institutional	

**TOWN OF CALMAR
TRANSPORTATION
MASTER PLAN**

EXHIBIT 2.1: EXISTING
LAND USES IN CALMAR'S
BUILT-UP AREA



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Absorbed Land (net)

- Residential
- Commercial
- Industrial
- Institutional

Absorbed Overheads (net)

- Parks and Open Space
- Public Utility
- Circulation

2045 Land Use Assumptions

- Low Density Residential (373 lots)
- Medium Density Residential (108 units)
- Commercial (8.55 gdha)
- Industrial (67.01 gdha)

**TOWN OF CALMAR
TRANSPORTATION
MASTER PLAN**

EXHIBIT 2.2:
2045 LAND USE
ASSUMPTIONS



In terms of medium density multi-unit residential, it is assumed that:

- The remaining eight (8) units in the Southbridge ASP will be developed; and
- 100 units in the Hawks Landing ASP will be developed.

Overall, there is anticipated to be 373 new low density residential lots subdivided and 108 medium density residential units developed by 2045 in Calmar.

Industrial Growth

In terms of industrial, it is assumed the following will be developed:

- The 16.14-ha site at the western terminus of 42 Avenue in southwest Calmar;
- Around 41.94 ha of land in the southeast corner of Calmar, south of Highway 39 and east of Highway 795; and
- A 7.65-ha strip and a 1.28-ha site, both east of 45 Street, in the southern portion of the Hi-Way 39 Industrial Park.

Commercial Growth

Overall, there is anticipated to be 8.54 ha of commercial land and 67.01 ha of industrial land developed by 2045 in Calmar.

In terms of commercial, it is assumed the following will be developed:

- The 0.89-ha site on the south side of Highway 39 east of Westview Drive;
- The 2.95-ha strip on the south side of Highway 39 between 47 Street and 45 Street; and
- The 4.70-ha strip on the north side of Highway 39 between 47 Street and 45 Street.

3.0 Existing Roadway Network

The following section describes the overall existing roadway network, including classifications, traffic volumes, collision history and speed limits.

3.1 Roadway Classifications

The core purpose of a roadway is to connect drivers from one location to another; however the form, function, and priorities of various roadways can differ greatly. Roadway classifications provide guidance on the intended use of a roadway. The Transportation Association of Canada (TAC) Geometric Design Guide (GDG) provides guidance describing a roadways classification to provide movement and access function, visualized in the following figure.

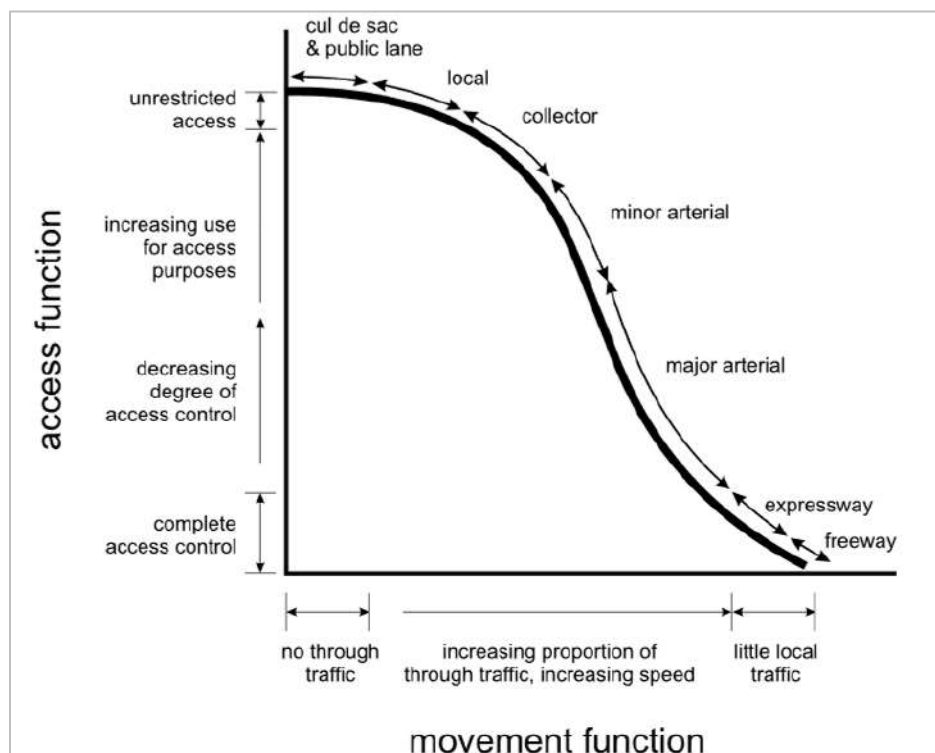


Figure 3.1: Access and Movement Function, By Roadway Classification (Source: TAC GDG)

Calmar's roadway classifications align with the TAC GDG and are defined as follows:

- **Arterial roads** provide high-capacity connections between neighborhoods, commercial centers, and regional destinations. They typically have slightly higher posted speeds and prioritize efficient movement of vehicles and goods. Provincial highways and the high-load corridor are classified as arterial roads within the town's classification system.
- **Collector roads** serve as intermediaries between local and arterial roads, channeling traffic from residential areas to the broader roadway network. They are designed to balance mobility and access.
- **Local roads** provide direct access to homes, parks, schools, and small businesses. These roads carry low traffic volumes—generally fewer than 1,000 vehicles per day—and are not intended for through traffic. Traffic typically operates as single file between parked vehicles on local roads.

Calmar's current roadway classification system is provided in the table below and illustrated on **Exhibit 3.1**.

Table 3.1: Town of Calmar Roadway Classifications

Classification	Daily Traffic Volume (vpd)	Target Posted Speed (km/h)	Right-of-Way Width (m)	Pavement Width (m)	Travel Lanes	Parking
Arterial	5,000-12,000	60	30.0	15.8	4	Not Permitted
Residential Collector	1,000-5,000	40	20.0	11.5	2	Permitted
Local Residential	Up to 1,000	40	18.0	10.0	2	Permitted
Local Industrial	N/A	40	30.0	9.0	2	Not Permitted
Industrial Collector	N/A	40	30.0	9.0	2	Not Permitted

TEC has jurisdiction over the 50 Avenue (Highway 39 outside Town limits) and 50 Street (Highway 795 outside of Town limits). This means the Town must adhere to TEC's standards for these roadways, including the types of improvements, traffic controls, access management, and other items. TEC has a separate classification system for Highways, defined in their Highway Geometric Design Guide (HGDG) and summarized below.

Functional Classification Code	Functional Classification Description	Core User Function	Flow Characteristics	Connections with	Typical Vehicle Volumes Served (veh/day)	Typical Design Speed	Number of Basic Lanes	Right-of-Way Width (m)
RFD	Rural Freeway Divided	Mobility is the primary consideration	Uninterrupted Flow	Freeways Arterials Collectors	≥ 8,000	110 – 130	4 – 8	110 – 130
RAD	Rural Arterial Divided	Mobility is the primary consideration	Uninterrupted Flow	Freeways Arterials Collectors Locals	3,000 – 20,000	120	4 – 6	120 – 130
RAU	Rural Arterial Undivided	Mobility is the priority with some consideration of Access	Uninterrupted Flow	Freeways Arterials Collectors Locals Driveways	400 – 10,000	110	2	50 – 60
RCU	Rural Collector Undivided	Mobility and Access of equal importance	Uninterrupted Flow	Freeways Arterials Collectors Locals Driveways	100 – 2,000	90 – 110	2	40 – 50
RLU	Rural Local Undivided	Access is the primary consideration	Interrupted Flow	Arterials Collectors Locals Driveways	< 1,000	60 – 90	2	40 – 50
UFD	Urban Freeway Divided	Mobility is the primary consideration	Uninterrupted Flow	Freeways Expressways Arterials	≥ 10,000	90 – 110	4 – 8	80 – 90
UED	Urban Expressway Divided	Mobility is the primary consideration	Interrupted Flow	Freeways Expressways Arterials	10,000 – 60,000	80 – 90	4 – 6	70 – 80
UAD	Urban Arterial Divided	Mobility is the priority with some consideration of Access	Interrupted Flow	Freeways Expressways Arterials Collectors	5,000 – 30,000	70 – 80	4 – 6	40 – 50
UAU	Urban Arterial Undivided	Mobility is the priority with some consideration of Access	Interrupted Flow	Freeways Expressways Arterials Collectors	1,000 – 15,000	70	2 – 4	30
UCU	Urban Collector Undivided	Mobility and Access of equal importance	Interrupted Flow	Arterials Collectors Locals Avenues/Lanes Driveways	300 – 8,000	70	2	30
ULU	Urban Local Undivided	Access is the primary consideration	Interrupted Flow	Collectors Locals Avenues/Lanes Driveways	< 1,000	60	1 – 2	20

Figure 3.2: Roadway Functional Characteristics (Source: TEC HGDG)

3.2 Primary Roadway Network

The Town's roadway network, shown in **Exhibit 3.1**, is a mix of rural roads with ditches and urban roads with curb and gutter. The Town's primary roadways are described in the following subsections.

50 Avenue (Highway 39 outside Town limits)

50 Avenue serves as both Calmar's main street and a vital segment of Highway 39, linking the Edmonton Region to Drayton Valley and several smaller communities. The highway begins in Leduc and passes through Calmar, Thorsby, and Warburg before meeting Highway 22 east of Drayton Valley. TEC currently classifies the highway as an Urban Arterial Undivided (UAU) within Calmar and is protecting the right-of-way to maintain this classification or upgrade it to an Urban Arterial Divided (UAD) where feasible. 50 Avenue accommodates over 8,000 vehicles per day and is part of the province's high-load corridor on Highway 39.

Within Calmar, the speed limit transitions from 100 km/h to 70 km/h at the eastern town boundary, then to 50 km/h through the urban core between 47 Street and 51 Street, where the road features one lane in each direction with wide parking lanes. West of 51 Street, it returns to a rural cross-section with shoulders and a parallel shared-use path to the north. The speed limit increases again to 70 km/h at Westview Drive, and to 100 km/h as it exits the town to the west.

All intersections along 50 Avenue prioritize through movement. In the developed urban area, between 47 and 51 Streets, sidewalks are present on both sides of 50 Avenue to accommodate pedestrians. Three (3) pedestrian crossings with overhead alternating flashing beacons are located at 47, 49, and 50 Streets, while side mounted rectangular rapid flashing beacons (RRFB) are installed at 51 Street, 52 Street, and Westview Drive.

50 Street (Highway 795 South of Calmar)

Within Calmar, 50 Street connects southern industrial and residential areas with 50 Avenue, residential areas to the north, and two (2) schools. South of 50 Avenue, 50 Street is part of Highway 795. Highway 795 connects Calmar to Highway 616, Highway 13, Highway 611, and ends at Highway 53 near Ponoka. TEC currently classifies the highway as Rural Arterial Undivided (RAU). From 44 Avenue to Calmar Elementary School (north of 53 Avenue), 50 Street has an urban section with 2 travel lanes, curbside parking, and sidewalks.

50 Street is stop controlled at 50 Avenue. At 51 and 52 Avenues (in front of Calmar Secondary School) there are 4-way stop-controlled intersections with marked crosswalks. South of 50 Avenue, 50 Street has a posted speed limit of 50 km/h. North of 50 Avenue, the posted speed limit is 30 km/h. Beyond the north Town limit, 50 Street continues to Township Road 502 with a rural gravel cross-section as Range Road 270.

45 Street

45 Street is currently classified as an industrial collector. It has a gravel surface with a rural cross-section and no speed limit sign, falling back to the Town's default speed limit of 50 km/h. It accommodates access to nine (9) industrial and agricultural parcels north of 50 Avenue, on Highway Avenue and 52 Avenue. 45 Street is stop controlled at 50 Avenue.

47 Street

47 Street is currently classified as a local residential roadway. It provides local access to several community amenities between 48a Avenue and 54 Avenue including Engberg Spray Park, Calmar Curling Club, and the Royal Canadian Legion with a posted speed limit of 30 km/h and an urban section with 2 through lanes, curbside parking, and sidewalks throughout. Between 48a Avenue and 51 Avenue there are several parking lot accesses for these amenities and commercial businesses. Between 49 Avenue and 50 Avenue, 47 Street has angle parking available on the west side to accommodate local businesses.

49 Street

49 Street is currently classified as a local residential roadway. It provides local residential access between 47 Avenue and 54 Avenue, providing access to Calmar Secondary School north of 51 Avenue. South of 50 Avenue, 49 Street accommodates two (2) travel lanes on a rural cross-section. North of 50 Avenue, it has an urban cross-section with 2 travel lanes, street parking, and sidewalks. Adjacent to 50 Avenue, 49 Street has angle parking available on the east side to accommodate local businesses.

49 Street is stop-controlled at 50 Avenue, with a flashing pedestrian signal available for pedestrians crossing 50 Avenue. The posted speed limit throughout 49 Street is 30 km/h.

51 Street

51 Street is offset on either side of 50 Avenue, with both segments classified as a local residential roadway with a posted speed limit of 30 km/h. South of 50 Avenue, 51 Street extends to 44 Avenue with a rural cross-section accommodating two (2) travel lanes, providing access to a park space including baseball diamonds and a playground.

North of 50 Avenue, 51 Street has an urban cross-section, with parking on both sides. Due to the relatively narrow cross-section (8.7 m rather than the current standard of 10 m), when vehicles are parked on both sides of the street, the centre lane functions with single file traffic. One sidewalk is situated on the east side of 51 Street north of 50 Avenue. Since this segment of 51 Street terminates at 51 Avenue, it has relatively low traffic volumes and functions mostly to connect residential properties to 50 Avenue.

52 Street

52 Street provides connectivity between 47 Avenue and Westview Crescent, across 50 Avenue and Westview Drive. South of 50 Avenue, 52 Street accommodates 2 travel lanes on a rural cross-section. North of 50 Avenue, it has an urban cross-section with 2 travel lanes, street parking, and sidewalks. 52 Street has a posted speed limit of 30 km/h through its entire length.

52 Street is stop-controlled at 50 Avenue with a flasher for pedestrians to cross 50 Avenue. Sidewalks along 52 Street connect to the shared pathway along 50 Avenue.

Westview Drive

Westview Drive provides access to residential neighborhoods on either side of 50 Street. Between 49 Avenue and 52 Street, Westview Drive accommodates 2 travel lanes with curbside parking and a boulevard sidewalk situated on the east side of the street. The sidewalk connects to the shared pathway along 50 Avenue and accommodates pedestrians crossing 50 Avenue with a rectangular rapid flashing beacon crossing.

3.3 Existing Traffic Volumes

The consolidated existing traffic volumes are shown in **Exhibit 3.2**. The traffic volumes are based on TEC's publicly available counts and supplemented by 12-hour traffic counts collected for the purposes of this TMP. The new 12-hour traffic counts were factored to design hourly volumes in accordance with TEC's requirements. Some inconsistencies were noted between the new factored counts and the TEC intersection volumes on 50 Avenue during the AM peak hour, likely due to the TEC count having been completed when school was out of session. The TEC data and design hourly volumes from the new counts were adjusted based on historic traffic volume trends to better reflect the anticipated conditions on 50 Avenue. The unadjusted TMP count data, TEC counts, and volume adjustments are provided in **Appendix B**.

3.4 Road Safety and Collision History

ISL gathered collision data from the Alberta Transportation and Economic Corridor's (TEC) Transportation Infrastructure Management System (TIMS) for the years between 2016 and 2020. The information provided by TIMS represents the best available information at the time of publishing.

The TIMS system focuses on provincial highway corridors, which include Highway 39 and Highway 795 within the vicinity of Calmar. No data is provided for municipal roadways within the Town limits. For the 5-year period, 14 collisions were reported to TEC and all were along the Highway 39 corridor.

Due to the limited number of collisions, it is difficult to generate many definitive conclusions as the occurrence of collisions contains a random element with high degrees of variation.

The number of collisions has slowly grown within the 5-year period (**Figure 3.3**) where data was made available. The increase from one (1) to a sustained four (4) collisions per year is concerning however it may be part of the natural variation and/or may be correlated with increases in traffic volumes. The Town and the Province are encouraged to continue their monitoring programs to assess whether the yearly collision frequency continues to rise or whether the events in 2019 and 2020 represent an abnormally high period.

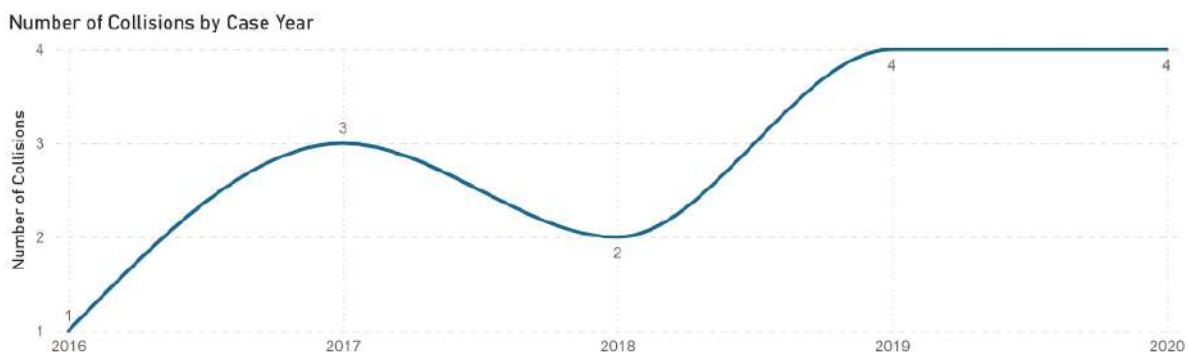
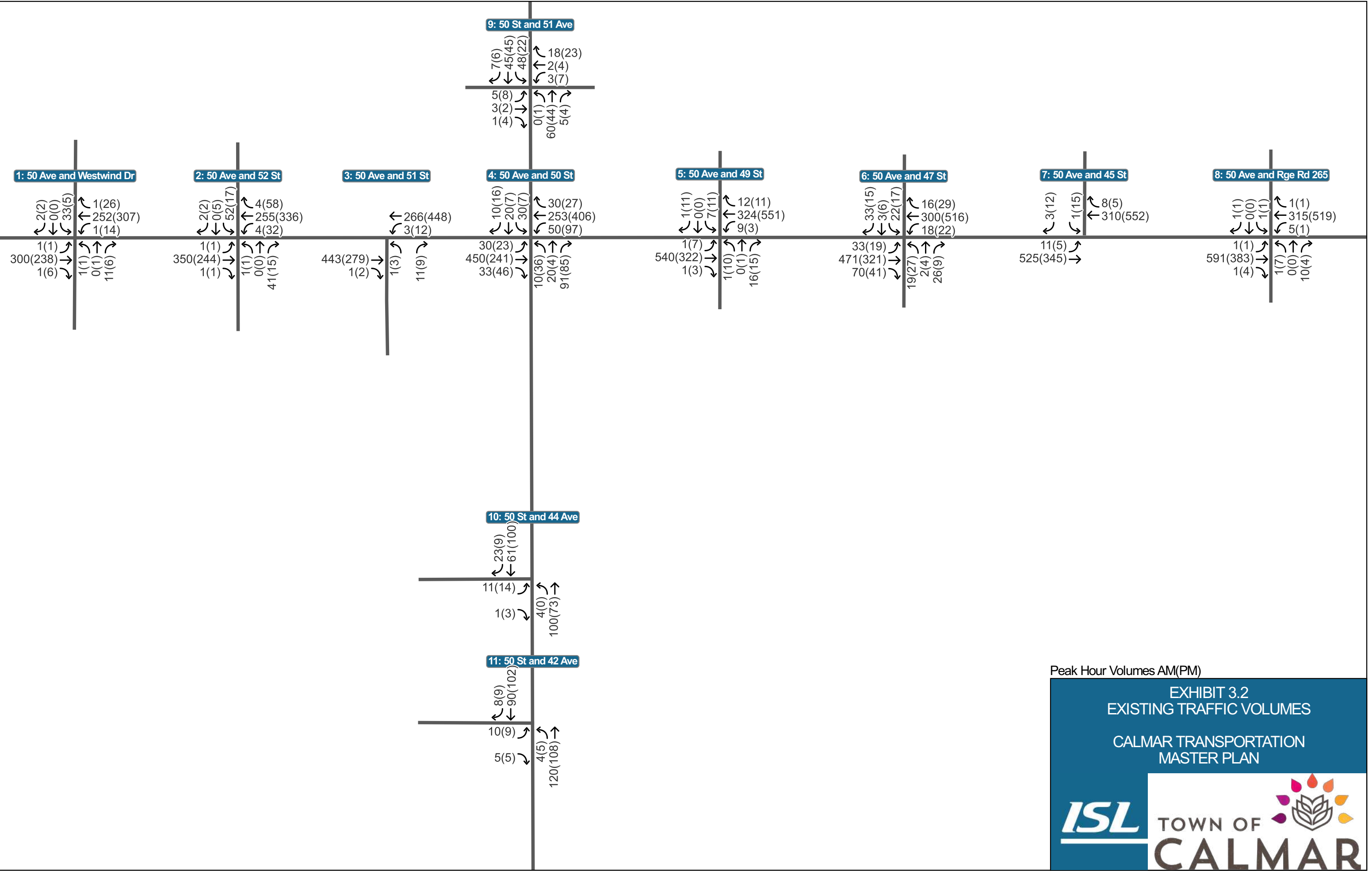


Figure 3.3: Number of Collisions by year

The seasonality of collisions history (**Figure 3.4**) follows a somewhat similar pattern to other municipalities that ISL has studied. Collisions frequency shows a somewhat higher spike in summer months, a dip in the spring/fall months and an increased spike in the winter months. Again, variation in



collision data across the province is high and definitive conclusions are hard to generate. Specifically, the collisions history shows an incident on May 2nd, 2017. Had this single event occurred a few days earlier, the chart below would show a somewhat flat pattern for spring/summer periods.

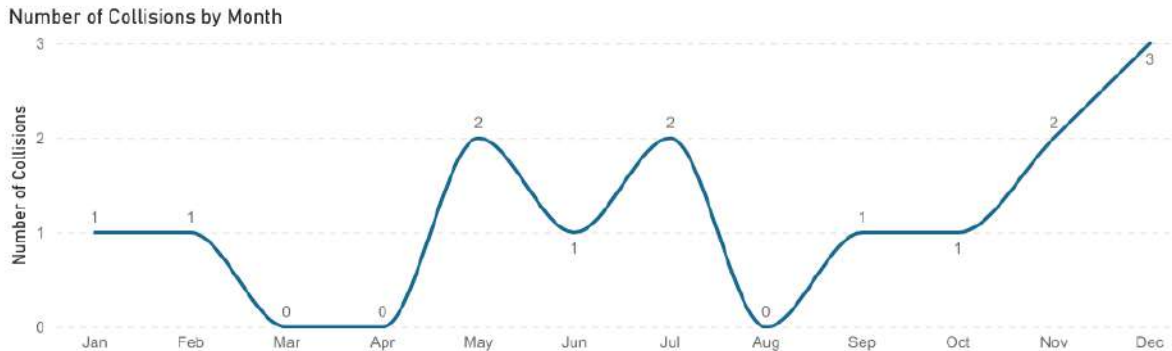


Figure 3.4: Number of collisions by month

Collisions are shown to occur somewhat more frequently early in the week (Monday through Wednesday), and less frequently later in the work week and weekends (**Figure 3.5**). Collisions also occur most frequently in the afternoon / evening peak traffic periods (3:00 pm to 7:59 pm), somewhat evenly spread throughout the midday period (10:00 am to 2:59 pm) and very infrequently in the morning and overnight hours (8:00 pm through to 9:59 am) (**Figure 3.6**).

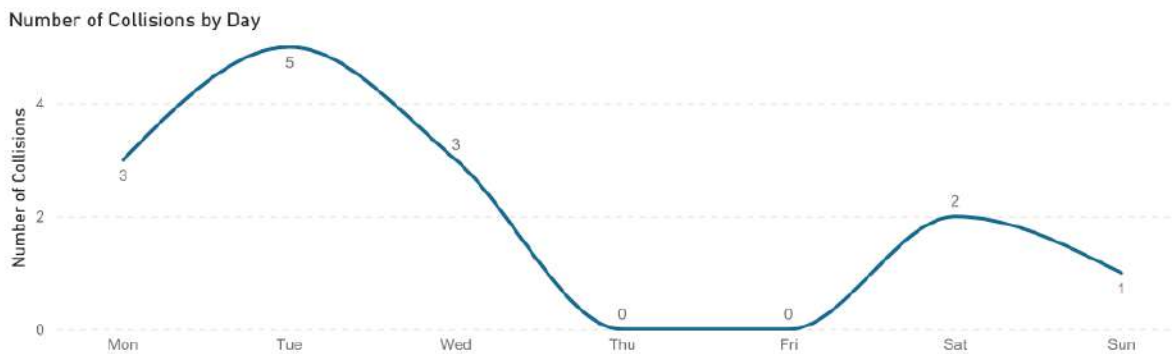


Figure 3.5: Number of collisions by weekday

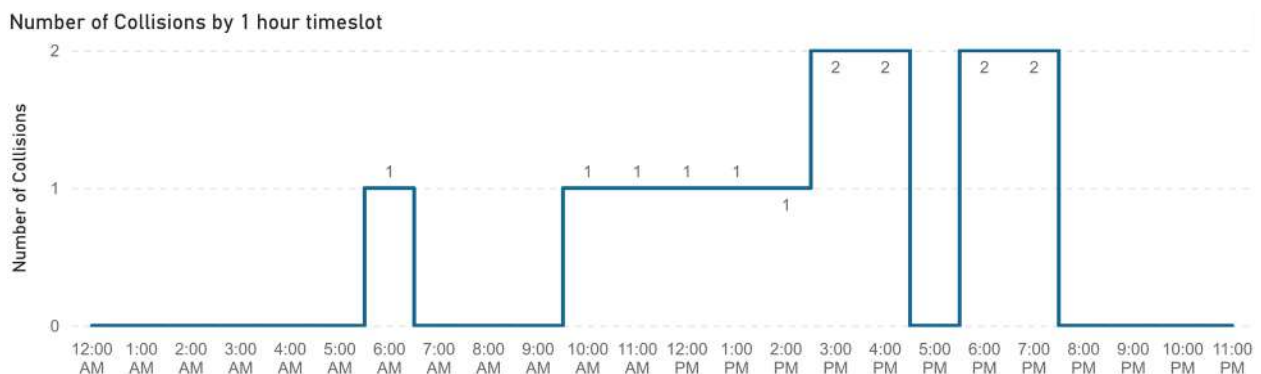


Figure 3.6: Number of collisions by time-of-day

The map below shows the reported location of collisions around Calmar. The exact location of collisions is highly reliant on the reporting officers and TEC in converting street names and addresses into latitude and longitude coordinates. Most reported collisions seem to occur outside of the town limits.

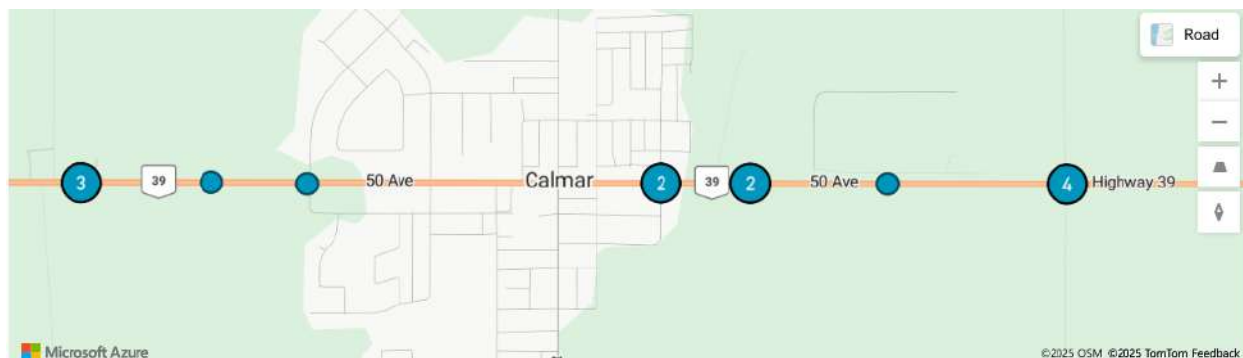


Figure 3.7: Locations of collisions within the immediate area of Calmar

The figure below shows the type of collisions that were reported by TEC. Rear end collisions are the most common, followed by struck object collisions. Not reported in this figure is that three (3) of the four (4) struck object collisions involved wildlife, with the remaining incident involving a road-side object. This pattern of high numbers of rear-end and wildlife collisions is similar to other rural municipalities that have been studied by ISL.



Figure 3.8: Frequency of different types of collisions

There were no fatality-related collisions gathered by TEC within the 5-year reporting period. Minor injury and property-damage only collisions occurred in equal measure.



Figure 3.9: Frequency of different severities of collisions

The table below shows the combination of collisions by surface condition as well as the prevailing lighting conditions of the sky (regardless of street illumination). Most collisions occur on dry road surfaces and most occur within daylight hours. This data matches with trends from other Alberta municipalities, as the majority of travel occurs during these conditions.

Table 3.2: Number of collisions by surface condition and lighting condition

	Darkness	Daylight	Total
Dry Surface	1	10	11
Slush, Snow or Icy Surface	2	1	3
Total	3	11	14

3.5 50 Avenue Speed Review

Vehicle speed data was collected on 50 Avenue at 51 Street and 49 Street from 3:00 PM to 5:30 PM April 3, 2025. While this data only captures a small window of time, it can provide some insights into driver behavior along the corridor. The speed data is provided in **Appendix B**. The following is noted based on the data:

- Despite the speed limit transitioning to 50 km/h west of Westview Drive, a high rate of speeding was observed at 51 Street. 46 % of the data points at this location were over 58 km/h.
- All data points over 74 km/h were from the 51 Street location, including three instances of speeds over 90 km/h.
- Most drivers at 49 Street traveled at or near the speed limit, with only 13% traveling over 58 km/h.
- Higher rates of speeding occurred outside of the peak hours, with all instances of speeds over 74 km/h occurring before 4:00 PM.

The wide lanes and shoulders on 50 Avenue at 51 Street enable drivers to feel more comfortable traveling at higher speeds. Speeding is likely common along 50 Avenue west of 51 Street because the cross-section does not align with the 50 km/h posted speed. Driver compliance is significantly higher at 49 Street due to the presence of on-street parking, more frequent accesses, and urban cross-section with streetscaping. More data would provide a better understanding of driver behaviour along 50 Avenue, particularly outside of peak hours. The Town could consider completing a speed study along 50 Avenue in the future using the methodology outlined in the TAC Canadian Guidelines for Establishing Posted Speed Limits.

4.0 Future Roadway Network

4.1 Existing Plans for Highway 39

Anticipated Functional Planning Study (Highway 39)

TEC is protecting Highway 39 through the Town of Calmar as both an Urban Arterial Undivided (UAU) and Urban Arterial Divided (UAD). An upcoming functional planning study will provide further insight into the classification, however the expected date of completion is uncertain.

Routine Geometric Assessment (2019)

TEC completed a routine geometric assessment for Highway 39, from 2 km west of Highway 795 to the City of Leduc in April 2019. The study considers the future of Highway 39 over the next 20 years, including through Calmar. The assessment notes that Highway 39 has the access management classification of Multi-Lane but is currently acting as a Major Two-Lane Highway. It specifies that all recommendations in the assessment are in the context of a Major Two-Lane Highway.

The report includes warrant assessments using TEC's Highway Geometric Design Guide (HGDG) methodology for two-lane highways. This methodology is used to determine the standard at-grade intersection layout for two-lane highways and is defined in **Section 5.1**. Intersections within Calmar built to a rural standard (ditch drainage) are categorized based on the TEC intersection types, however those built to an urban standard (curb and gutter) are categorized in the report as "urban".

The report recommended the following:

- TEC to not grant direct access to Highway 39.
- TEC to look for opportunities to close the direct driveway and business approaches accessing Highway 39,
- Install signals at the intersection of 50 Avenue and 50 Street.
 - The intersection was assessed. During the AM peak hour, the current northbound and southbound approach LOS (Level of Service, defined in Section 5.2.1) was "C" and "D" respectively. The southbound LOS is expected to drop to LOS F by 2033. A roundabout was considered but it was determined that there was insufficient space. Reconfiguring the north leg lane paint to a designated left and through-right turn lane resulted in LOS "E" by 2037 rather than "F". A four-way stop was also assessed, however this resulted in LOS F for the westbound direction. A signal warrant was completed and found to not be warranted, however, the report recommends traffic signals with a rotatable base as the only way to improve the level of service for all legs.
- Upgrade Range Road 265 to a Type IVc by 2037 (20-year report horizon).
- Upgrade 45 Street to a Type IVa based on current conditions.
- Re-align Range Road 271 and upgrade to a Type IVc by 2037.
- A minimum pavement width of 10.0 m and a desirable pavement width of 12.0 m as Highway 39 is a high load corridor.

It is noted that no traffic data was available for the intersections of Westview Drive, 51 Street, 49 Street, and 45 Street so the report made volume assumptions. Figures from the report showing the recommendations within Calmar are included in **Appendix C**.

Highway 39 – Calmar to Highway 2 Long Term Transportation Network Study (2010 draft)

A draft of the Highway 39 – Calmar to Highway 2 Long Term Transportation Network Study was completed in 2010. It is uncertain whether the final version was completed. The draft provides recommended long-term strategies for Highway 39 between Calmar and Highway 2, including through the Town of Calmar. This includes consideration for whether to twin the existing Highway 39 alignment through Calmar or to develop a new bypass. The draft study concluded that, while twinning through Calmar could be warranted by 2020 with an estimated 8,500-10,000 AADT, it may not be practical due to current constraints within the town. The existing route through Calmar is characterized by a pedestrian-friendly streetscape and twinning it would necessitate significant impact on Calmar's "main street" environment. Therefore, the study recommended other options should be considered.

The recommendations and assessments from the draft study highlight the need for strategic planning to manage traffic flow and ensure the long-term viability of Highway 39 within the Calmar area, considering both local community needs and regional transportation goals. It is also noted that the twinning threshold in the draft report comes from Figure A.9 of the Highway Geometric Design Guide which is not included in the most recent version of the Guide.

Implications of Existing Plans

Existing plans may affect the Town as follows:

- The routine geometric assessment recommends direct residential and commercial access to Highway 39 be closed. This may be more practical in the rural context, outside of the Town's boundaries, but TEC may seek to apply this through the Town. The report also indicates that no more direct access be granted to Highway 39. This implies that new development along Highway 39 should be accessed from a public road. There may be some flexibility for commercial accesses in an urban context however it would need to be approved by TEC.
- The routine geometric assessment also notes traffic signals needed at 50 Street/ 50 Avenue and upgrades at Range Road 265 and Range Road 271 to a Type IVc in the future. These intersections are located at the east and west boundaries of the Town, respectively. Type IVc intersection upgrades are discussed in **Section 5.1** and illustrated in **Appendix D**.
- The routine geometric assessment recommends 45 Street be upgraded to Type IVa based on current conditions. It is noted that traffic volumes were not available for this assessment and thus assumptions were made for the turning volumes. Count data collected for this TMP indicate the traffic volumes on 45 Street are lower than estimated for the geometric assessment. This results in only a Type IIIa intersection required for the existing and background conditions, which is discussed further in **Section 5.1**.
- The routine geometric assessment's prescribed pavement width for Highway 39 (10.0 m minimum, 12.0 m desirable) will be considered when reviewing possible cross-sections through Calmar.
- The draft long term transportation network study recognized that twinning Highway 39 through Calmar is likely not practical and suggests an alternative should be explored.
- The characterization of intersections within Calmar's urban cross-section as "urban" without a TEC intersection type indicates that urban intersections are regarded differently to rural equivalents. This implies there may be some flexibility in TEC standards through the downtown area providing no adverse effects on operations would occur.
- The potential future functional planning study will establish a plan for upgrades to Highway 39 through the Town of Calmar. It should include the travel demands generated from development in Calmar as

estimated in this study, such that future growth in the Town can be accounted for in the future plans. It should also address the needs for Highway 39 in the Town.

4.2 Future Development Accesses

The assumed development accesses are shown in the figure below. Most developments can be accessed from existing intersections or with the new leg off an existing intersection. A new commercial access is assumed to be located between 47 Street and 45 Street based on the Engberg Estates ASP. The assumed access is placed to be consistent with the ASP, however the location can move as needed without impacting the analysis results.

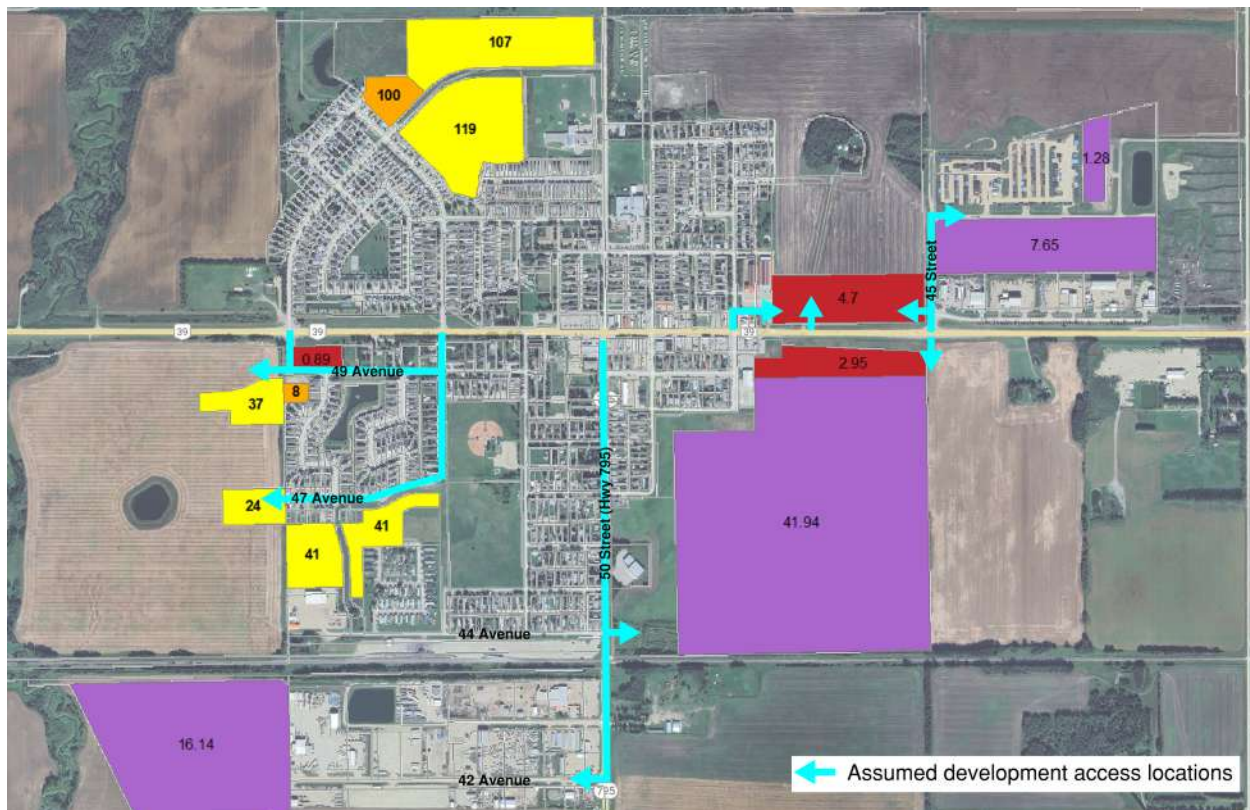
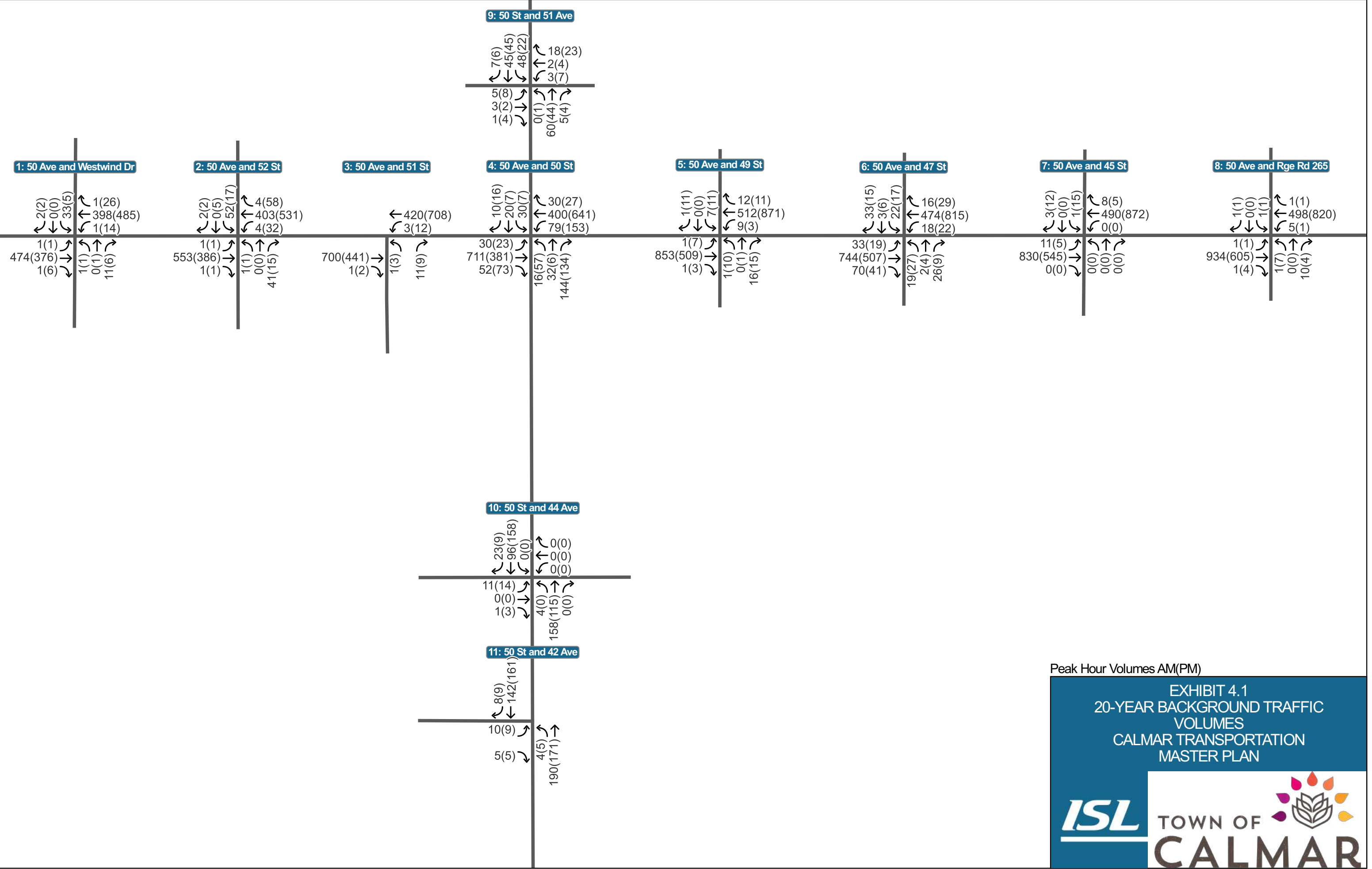


Figure 4.1: Assumed Development Access Locations

4.3 Future Roadway Network Traffic Volumes

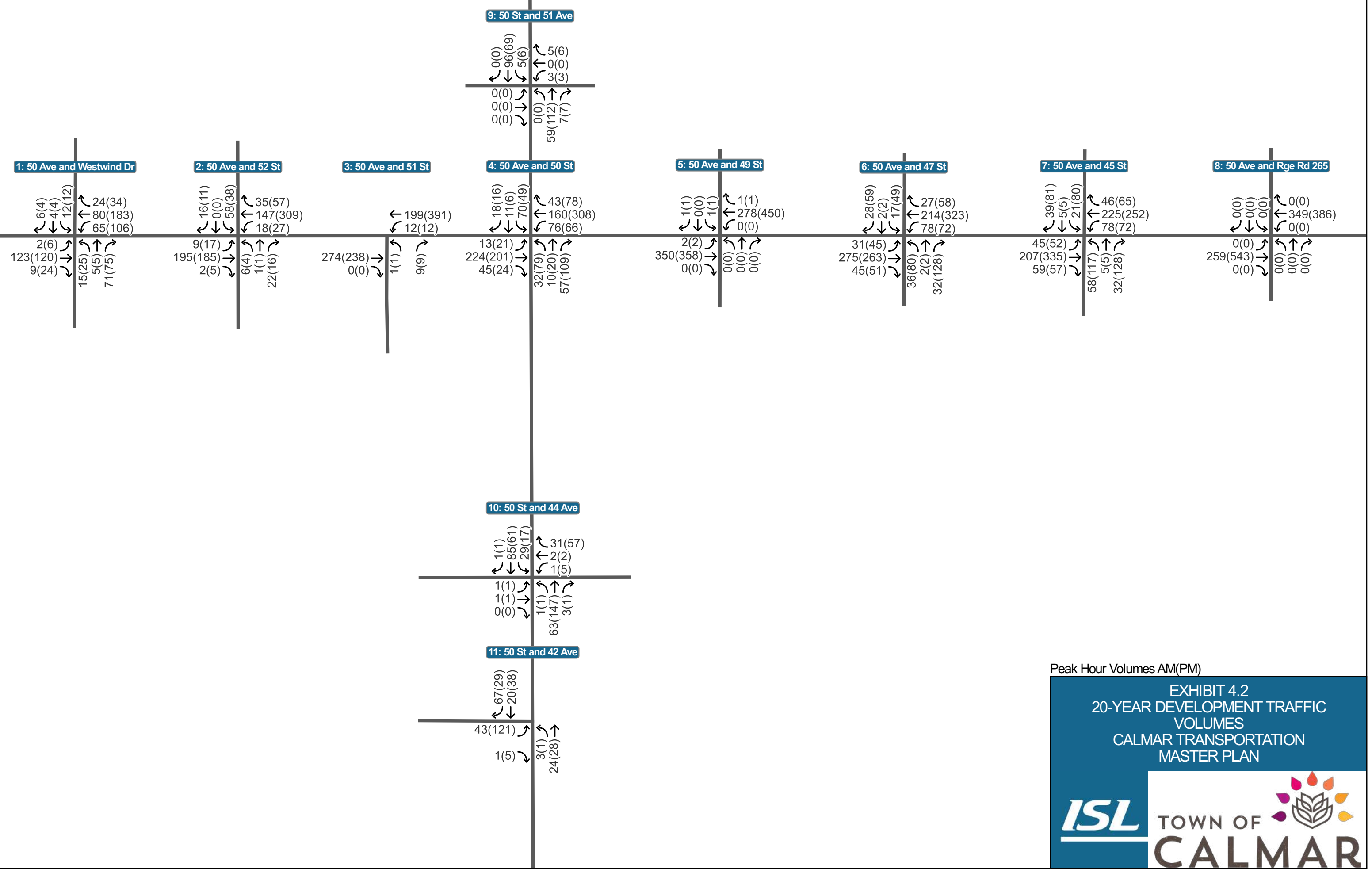
This section provides an overview of the anticipated traffic volumes at the 20-year horizon, incorporating regional traffic growth as well as new trips generated by the Town's planned development. The 20-year background, development, and total traffic volume estimates are provided in **Exhibits 4.1 to 4.3** and discussed below.



Peak Hour Volumes AM(PM)

EXHIBIT 4.1
20-YEAR BACKGROUND TRAFFIC
VOLUMES
CALMAR TRANSPORTATION
MASTER PLAN

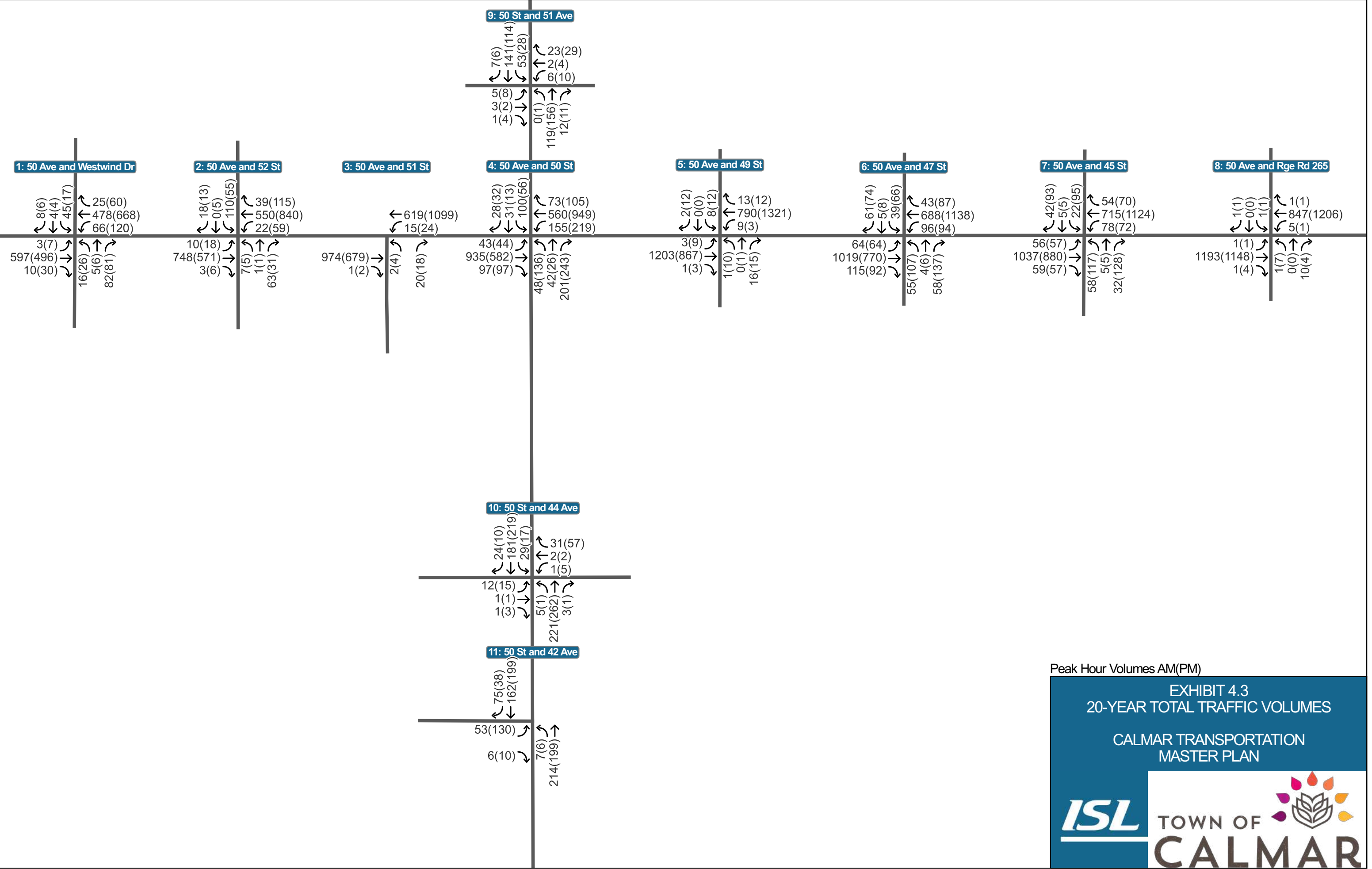




Peak Hour Volumes AM(PM)

EXHIBIT 4.2
20-YEAR DEVELOPMENT TRAFFIC
VOLUMES
CALMAR TRANSPORTATION
MASTER PLAN





Peak Hour Volumes AM(PM)

EXHIBIT 4.3
20-YEAR TOTAL TRAFFIC VOLUMES

CALMAR TRANSPORTATION
MASTER PLAN



4.3.1 20-Year Background Traffic Volume

The background traffic volumes for the 20-year horizon captures the increase in regional traffic through Calmar. A 2.9 percent linear growth factor was applied to the existing traffic volumes on 50 Avenue and 50 Street south. The growth rate is based on the change in daily traffic between 2014 and 2024.

The growth rate was not applied to turning movements accessing or exiting the highways (50 Avenue and 50 Street South) from local or collector roads connecting into Calmar. For example, at the intersection of 50 Avenue and 47 Street, the growth factor was only applied to the eastbound and westbound through movements because any other movements are associated with traffic to or from the Town rather than traveling through. Increased trips from within the town are considered development traffic and are discussed in **Section 4.3.2**.

4.3.2 20-Year Development Traffic Volume

New trips or changes in travel patterns because of planned development within the Town of Calmar are considered development traffic. The 20-year development traffic volume was estimated based on the anticipated land use discussed in **Section 2.2**. Each land use has an associated trip generation rate which is the number of trips that use is expected to generate. The Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) is the main source for this study's trip generation rates. A custom rate was used for industrial land uses. Assumptions for proportion of internal trips (trips that start and end without going onto 50 Street or 50 Avenue), pass-by (trips that are already on the highway, stop at a commercial area, then continue on their original path) and non-vehicle trips were applied to the net development traffic in an effort to reflect anticipated travel behaviors. The trip generation rates, source of the custom industrial rate, reduction assumptions, and calculations are provided in **Appendix E**.

The development traffic was split into external traffic, which either comes from or is destined for somewhere outside of Calmar, and internal traffic, which are trips that start and end in Calmar but use either 50 Avenue or 50 Street as part of its route. The net site generated traffic volumes per land use are summarized in the tables below.

Table 4.1: Net 20-Year Development Traffic Volumes (External Trips)

Land Use	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
Residential	63	191	254	183	108	291
Commercial	210	128	338	307	319	626
Industrial	263	83	346	103	414	517
Total	536	402	938	593	841	1,434

Table 4.2: Net 20-Year Development Traffic Volumes (Internal Trips)

Land Use	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
Residential	8	23	31	42	25	69
Commercial	26	16	42	102	106	209
Industrial	32	10	43	24	97	121
Total	66	49	116	168	228	399

Internal net site generated traffic volumes were distributed onto the roadway network based on engineering judgement. The external net site generated traffic volumes were distributed onto the roadway network based on existing travel patterns, as follows:

- 50 Avenue west = 38%
- 50 Avenue east = 60%
- 50 Street North = 1%
- 50 Street South = 1%

5.0 Roadway Operations Review

A roadway operations review was completed to understand how the Town's roadway network is operating today and what infrastructure changes may be needed to support future growth. This review includes warrant assessments using TEC's warrant criteria for two-lane undivided highways as well as traffic operations modeling of the existing, 20-year background, and 20-year total traffic scenarios.

5.1 Alberta Transportation and Economic Corridor Warrants

A warrant analysis was conducted for the study intersections in accordance with TEC's TIA Guidelines to determine the appropriate traffic control treatments at Full Build-out. First, an Alberta Transportation Traffic Signal Warrant was completed to determine whether traffic signals are warranted at the various assessment scenarios. Additional warrants were assessed for intersections that did not warrant a traffic signal to determine the required intersection improvements per TEC's standards:

- Left Turn - Using TEC's Intersection Analysis Rural Two-Lane Undivided Highways analysis tool
- Right Turn - Using TEC's Highway Geometric Design Guide (HGDG)
- Illumination - Using TAC's (Transportation Association of Canada) Illumination of Isolated Rural Intersections Guide

The results of the left and right turn warrants inform the two-lane undivided highway intersection type. These are standard intersection types defined by TEC in Section D.7 of the HGDG. The TEC intersection types are provided in **Appendix D**. The results of the warrant assessment for 50 Avenue are summarized in **Table 5.1**.

Table 5.1: TEC Warrant Analysis Summary – 50 Avenue (Highway 39)

Cross Street (Current Type)	Scenario	Result	Turn Warranted (Base Storage)				Illumination Warranted
			EBL	EBR	WBL	WBR	
Westview Dr. (Type IIIb)	Existing	Type IIc	-	-	-	-	No (Existing)
	20 Yr BG	Type IIIc	-	-	Yes	-	No
	20 Year Total	Type Vc	Yes	-	Yes (40m)	Yes	Delineation
52 St. (Type IIb)	Existing	Type IIIc	-	-	Yes	-	Full (Existing)
	20 Yr BG	Type IVc	-	-	Yes	-	Full
	20 Year Total	Signal					
51 St. (Type Ia)	Existing	Type IIa	-	-	-	-	No (Existing)
	20 Yr BG	Type IIIa	-	-	Yes	-	No
	20 Year Total	Type IVa	-	-	Yes (25m)	-	No
50 St. (Urban)	Existing	Type IVc	Yes	-	Yes (25m)	-	Full (Existing)
	20 Yr BG	Signal					
	20 Year Total	Signal					
49 St. (Urban)	Existing	Type IIIc	-	-	Yes	-	Full (Existing)
	20 Yr BG	Type IIIc	Yes	-	Yes	-	Full
	20 Year Total	Type IVc	Yes (25m)	-	Yes (25m)	-	Full

Cross Street (Current Type)	Scenario	Result	Turn Warranted (Base Storage)				Illumination Warranted
			EBL	EBR	WBL	WBR	
47 St. (Urban)	Existing	Type Vc	Yes	Yes	Yes	-	Full (Existing)
	20 Yr BG	Type Vc	Yes	Yes	Yes	-	Full
	20 Year Total	Signal					
45 St. (Type IIIa)	Existing	Type IIIa	Yes	-	-	-	No (Existing)
	20 Yr BG	Type IIIa	Yes	-	-	-	No
	20 Year Total	Signal					
RR. 265 (Type IVb)	Existing	Type II	-	-	-	-	No
	20 Yr BG	Type II	-	-	-	-	No
	20 Year Total	Type III	Yes	-	-	-	Delineation

The warrant assessments are discussed in greater detail in **Appendix F**, which also includes the relevant warrant sheets. Items that are warranted today are highlighted above in **Red**.

5.2 Capacity Analysis

5.2.1 Capacity Analysis Methodology

The intersection capacity analysis was completed using Synchro 11. This software is used to evaluate the performance of intersections on the roadway network using the Highway Capacity Manual (HCM) techniques. Intersection performance is categorized by its “Level of Service”, or LOS. There are six levels of service as follows:

- LOS A represents the highest level of service, or generally “free flowing conditions”
- LOS F generally represents a “breakdown” or “gridlock” condition in vehicular flow. At signalized intersections drivers will experience waits of two or more cycles.
- Levels of service B, C, D and E are intermediate levels of performance between each extreme
- LOS D reflects “normal” peak hour congestion, generally accepted criterion for design analysis.
- LOS E reflects an intersection or movement experiencing congestion and high delays. It may be accepted for certain movements only (such as low volume or low v/c ratio movements).

The table below shows average delay per vehicle corresponding with the six service levels.

Table 5.2: LOS Criteria for Signalized and Unsignalized intersections

LOS	Average Delay Per Vehicle (s)	
	Signalized	Unsignalized
A	< 10	< 10
B	10 – 20	10 – 15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	> 80	> 50

The Volume-to-Capacity (V/C) ratio, alongside the LOS, is a key indicator used to assess how well an intersection is operating. It compares the amount of traffic using the intersection to the maximum volume

it can handle. A higher ratio suggests congestion and the potential need for improvements such as additional lanes or changes to traffic control. A lower ratio indicates spare capacity, meaning the intersection may be able to accommodate traffic from future developments.

Typical interpretations of the V/C ratio include:

- 1.0 or higher – Operating at or above full capacity; congestion is likely.
- 0.85 to 1.0 – Nearing capacity; consider upgrades to maintain efficient traffic flow.
- 0.7 to 0.85 – Operating within acceptable limits; limited room for growth.
- Below 0.7 – Spare capacity exists, suitable for absorbing traffic from new development.

Performance Thresholds

The performance thresholds are the minimum performance criteria an intersection should meet. Intersections that are unable to meet the performance thresholds are candidates for improvements such as additional lanes or a change in traffic control. For Calmar, road network operations on the Provincial highways must balance the Province's operational requirements, which prioritizes efficient goods movement on their highways, with the community needs, which place a greater emphasis on connectivity.

TEC's LOS targets are defined in Section A.6.1 of the Highway Geometric Design Guide. They are based on the Provincial Highway Service Classification and the land use context of the highway's location. Calmar falls under the "outside metropolitan area urban context category", which results in a performance threshold of LOS D for both 50 Avenue and 50 Street south.

Synchro Traffic Model Design Criteria

A Synchro traffic model requires several inputs to ensure it closely resembles what drivers would experience. The design criteria for the Synchro model were developed based on engineering judgement and a review of existing traffic count data.

One important input is the Peak Hour Factor (PHF). This factor represents how the traffic demand changes during the peak hour. It compares the busiest 15-minute period during the PM peak hour with the total traffic during that hour. The PHF ranges from 0 to 1. A PHF of 1 indicates a consistent flow of traffic during the peak hour, whereas a PHF less than one means that there was some level of traffic demand fluctuation. The existing conditions were assessed using a PHF of 0.86 based on a review of the traffic volume data. The 20-year conditions were assessed using a PHF of 0.92 as it is assumed that there will be more consistent traffic as the Town grows. Synchro reports outlining model parameters and results are included in **Appendix G**.

Application of TEC Warrant Results

Some TEC warranted turn lanes through the urban section on 50 Avenue are excluded from the capacity analysis models. These turn lanes are only excluded if the model results indicate the exclusion will have minimal impact on Highway operations and in cases where the turn lanes would remove valued on-street parking from downtown Calmar.

The application of TEC guidelines and requirements within an urban context presents a nuanced challenge. TEC's guidelines for geometric design and maintenance are based on a rural highway context, focusing on speeds above the Town's existing 50 km/h speed limit and typically unimpeded through-traffic. This can conflict with urban planning principles that advocate for "complete streets" designed to

prioritize all modes of transportation, fostering active lifestyles, and integrating traffic calming measures. While TEC's guidelines acknowledge different servicing needs for highways in an urban context to a degree, the underlying framework often requires creative adaptation to accommodate the complexities of urban development, such as balancing efficient goods movement while supporting multimodal transportation networks or inter-Town connectivity. These differences necessitate ongoing dialogue and negotiation between municipalities and TEC to find solutions that serve both regional transportation goals and local urban development visions.

5.2.2 Existing Roadway Network Capacity Analysis

The existing conditions Synchro analysis indicates that the Town's roadway network is working well overall. The overall intersection LOS and movement LOS are shown on **Exhibit 5.1**. All intersections are operating at LOS A with movement V/C ratios of less than 0.55. The figure below shows the share of approach LOS for the analyzed intersections.

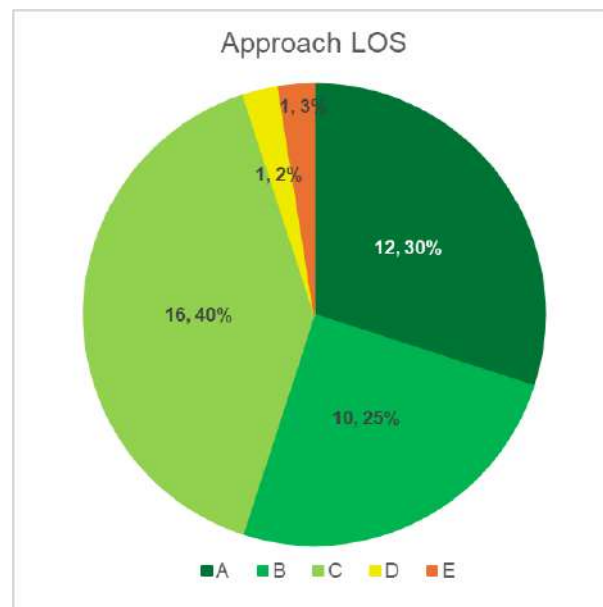


Figure 5.1: Existing Roadway Network – Existing Traffic Volumes - LOS by Approach (Right) – AM and PM Peak Hours

The southbound approach at 50 Avenue and 50 Street currently experiences the longest delay, with an LOS E and 38.9 second delay during the AM peak hour. Delay getting onto 50 Avenue is likely due to limited gaps in east-west traffic as the V/C ratio on 50 Street indicates none of the movements are over capacity. While long waits are not preferred, this is only expected to be an issue during the AM peak hour. Traffic signals would provide the north and south approaches dedicated time to completing their movements, but are not warranted, with a total warrant score of 81 when 100 is required. Installing unwarranted traffic signals is expensive and may increase delays for other movements. The Town should continue to monitor operations at 50 Street and 50 Avenue and consider safety mitigations and/or signal when warranted.

Existing Roadway Capacity Analysis Recommendations

This existing conditions capacity analysis was completed using the existing traffic control and intersection geometry in 2025. It did not include the improvements identified in Section 5.1 needed to meet TEC

standards. The purpose of this was to identify any critical operational concerns within the roadway network at the time of writing this TMP. The following are required to meet TEC standards on 50 Avenue:

- 52 Street dedicated westbound left turn lane (Type IIIc intersection)
- 49 Street dedicated westbound left turn lane (urban)
- 47 Street dedicated eastbound and westbound left turn lanes, dedicated right turn lane (urban)
- 45 Street eastbound dedicated left turn lane (Type IIIa)

Given 50 Avenue operates at an acceptable LOS with the current lane configuration, immediate change does not appear required. It is recommended the Town pursue painting the left turn lanes similar to those at 50 Street when new paint is needed on 50 Street. An eastbound right turn at 47 Street would remove parking near of key local destinations including the post office and library. While warranted based on TEC's criteria, the right turn is not recommended due to the impact it would have on the downtown.

5.2.3 20-Year Roadway Network Capacity Analysis – Background Volumes

Capacity analysis was completed for the 20-year background traffic volumes to understand how the roadway network would operate without any local growth. This helps to attribute roadway network improvements costs to the appropriate parties, generally the Town, developers, or TEC. The roadway network was modeled assuming all improvements identified in the Section 5.1 TEC warrant review have been completed except the eastbound right turn at 50 Avenue and 47 Street.

Based on the analysis results, all intersections are will receive LOS A or B with the 20-year background traffic volumes and noted improvements. 97 percent of movements have a V/C ratio of 0.55 or less, indicating the existing roadway network has capacity to accommodate demand from future development. The figure below compares the overall LOS with the approach LOS.

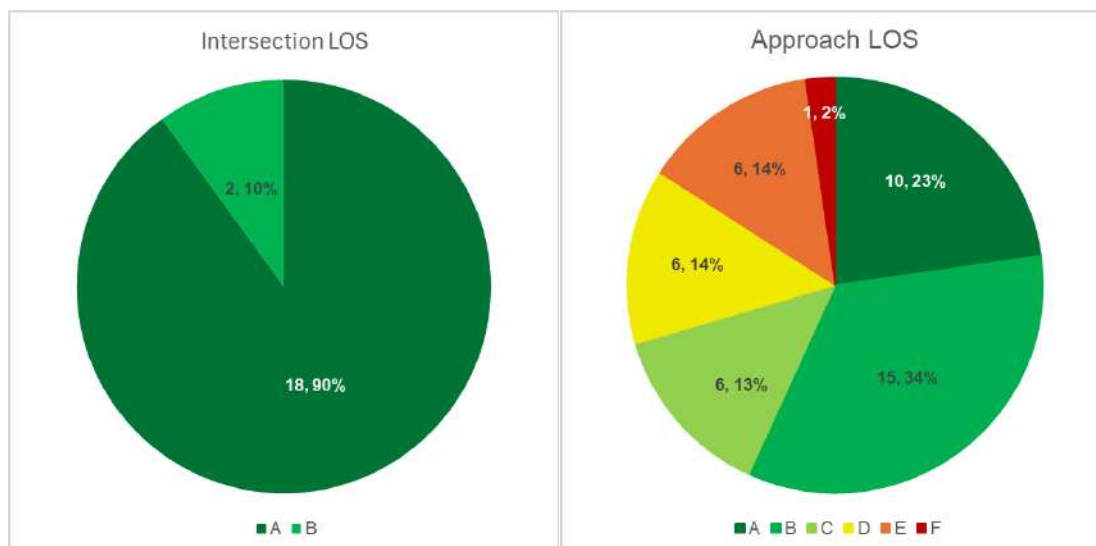


Figure 5.2: 20-Year Capacity Analysis – Background Traffic Volumes - Intersection LOS (left) and Approach LOS (right) – AM and PM Peak Hours

While the overall traffic operations are acceptable, many movements turning onto 50 Avenue receive LOS E or F, as shown in the table below. This is because as traffic increases on the provincial highway (50 Avenue), there are less suitable gaps in traffic to complete a left turn.

Table 5.3: 20-Year Background Traffic – Movement LOS E or F

Intersection	Movement	Peak Hour	Delay	LOS	V/C Ratio
47 St & 50 Ave	NBL	PM	65.2 s	F	0.43
47 St & 50 Ave	SBL	PM	49.4 s	E	0.34
49 St & 50 Ave	SBL	AM	47.7 s	E	0.09
49 St & 50 Ave	SBL	PM	39.2 s	E	0.19
47 St & 50 Ave	SBL	AM	37.6 s	E	0.37
47 St & 50 Ave	NBL	AM	37.4 s	E	0.32
Range Road 265 & 50 Ave	NBL	PM	36.5 s	E	0.10

5.2.4 20-Year Roadway Network Capacity Analysis – Total Volumes

The 20-year roadway network capacity analysis includes signalized intersections at 52 Street, 50 Street, 47 Street, and 45 Street based on traffic signal warrant criteria. **Exhibit 5.2** shows the overall intersection LOS and movement LOS. Analysis indicates that 50 Avenue is nearing capacity for a two-lane road. A significant proportion of the signal green time needs to be allocated to 50 Avenue, reducing crossing and turning time for north-south movements. Increased traffic volumes on 50 Avenue results in fewer gaps in traffic for vehicles entering from side streets, leading to longer delays and more congestion on the side streets. While all intersections operate at LOS D or better, there are multiple interactions with failing approaches, as shown in the figure below.

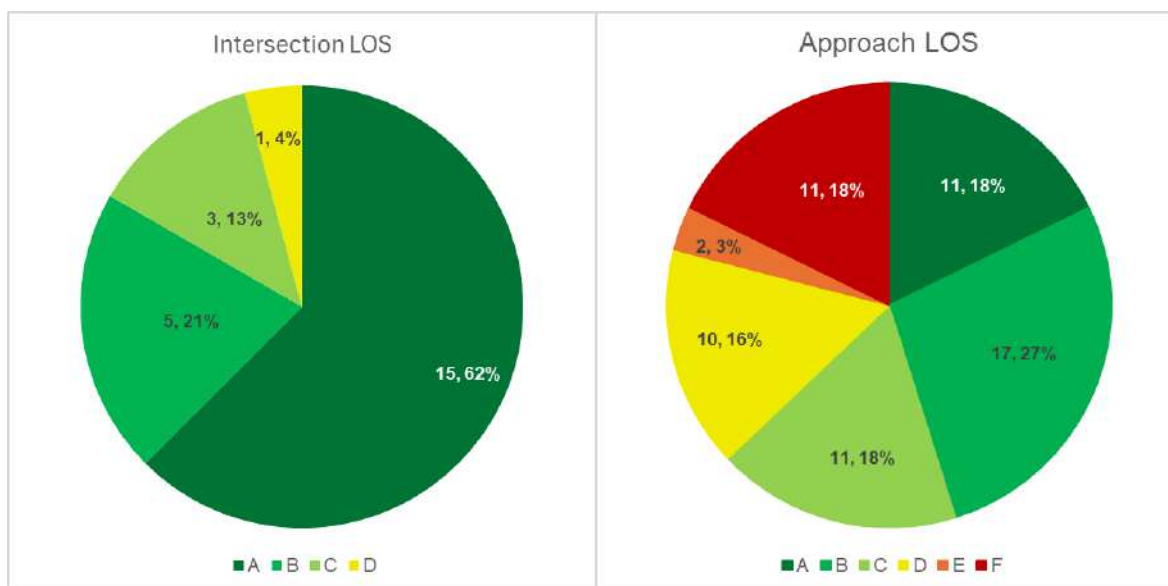


Figure 5.3: 20-Year Existing Roadway Network – Total Traffic Volumes - Intersection LOS (left) and Approach LOS (right) – AM and PM Peak Hours

20-Year Roadway Network Improvement Options

While 50 Avenue is anticipated to maintain an acceptable level of service for through traffic with the 20-year traffic volumes, The 20-year traffic model indicates long delays for vehicles turning left onto 50 Avenue. Long delays for minor roads are typical of towns that grow along provincial highways and highlights the network's current reliance on 50 Avenue as the primary east-west corridor. With limited alternative east-west routes, most residents must use 50 Avenue for travel between the north and south sides of the community. Options to address the capacity constraints are discussed below.

TWINNING 50 AVENUE

Twinning 50 Avenue would provide additional east-west capacity and enable more time to be allocated to north-south movements. However, twinning would significantly impact the downtown core, including potential loss of parking and the introduction of more traffic lanes for pedestrians to cross. While twinning may improve goods movement and network capacity, it does not resolve the fundamental issue: the community's dependence on a single corridor for cross-town movement.

ADDITIONAL EAST-WEST CONNECTIVITY

Extending Westview Drive to connect with 45 Street would establish a viable alternative east-west route, distributing traffic more evenly onto the arterial and collector road network. Furthermore, an additional east-west corridor south of 50 Avenue would further alleviate pressure and improve connectivity. This connection could be integrated into future development of the southeast lands designated for commercial and industrial use. While opportunities for a continuous east-west route south of 50 Avenue are currently limited by existing land uses, future redevelopment could make corridors such as 49 Avenue or 47 Avenue viable options.

ROUNDAABOUT AND EAST-WEST CONNECTIVITY

Constructing a roundabout at the intersection of 50 Avenue and 45 Street would facilitate turning movements onto 50 Avenue from 45 Street and help to calm traffic entering the town from the east. A roundabout at 50 Avenue and 45 Street would also provide residents with greater flexibility in their routes; for those unable to make a northbound left turn onto 50 Avenue during peak flow, a right turn followed by a safe U-turn at the roundabout could be used instead. Together, the additional connections and proposed roundabout at 45 Street would enhance the functionality and resilience of Calmar's roadway network, reducing congestion on 50 Avenue and improving mobility throughout the community.

A traffic model using the 45 Street roundabout and additional east-west connections was also assessed. This scenario includes some traffic distributed to the 45 Street roundabout and using the internal east-west connections. The roundabout was assessed using SIDRA 9, a modeling software that specializes in roundabout assessments. A two-lane roundabout was assessed in accordance to TEC's Design Bulletin #115, which states that roundabouts shall be at minimum two-lane. The Bulletin does provide some leeway for urban areas where right-of-way is constrained however this is not the case at 45 Street. The SIDRA results outputs are provided in **Appendix H**.

The sum of average approach delay at intersections on 50 Avenue for the modeled scenarios are compared in the figure below. It shows a significant reduction on the southbound delay with the roundabout option as well as a reduction in all approach delays overall when compared to a traffic signal only option.

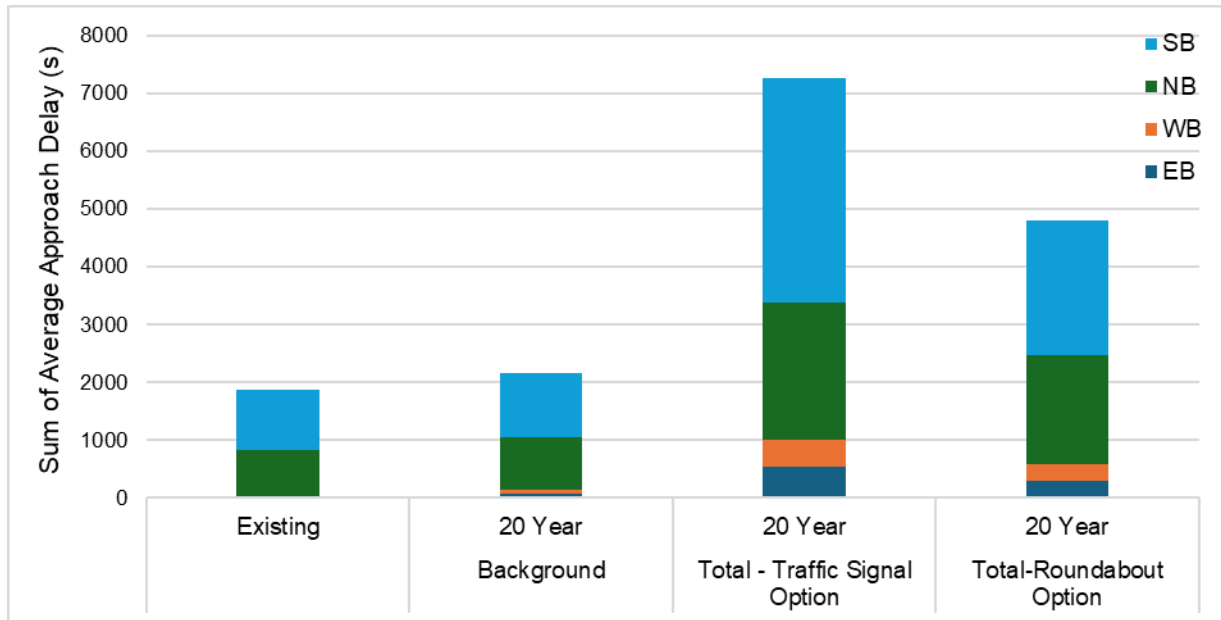


Figure 5.4: Comparison of Average Approach Delays

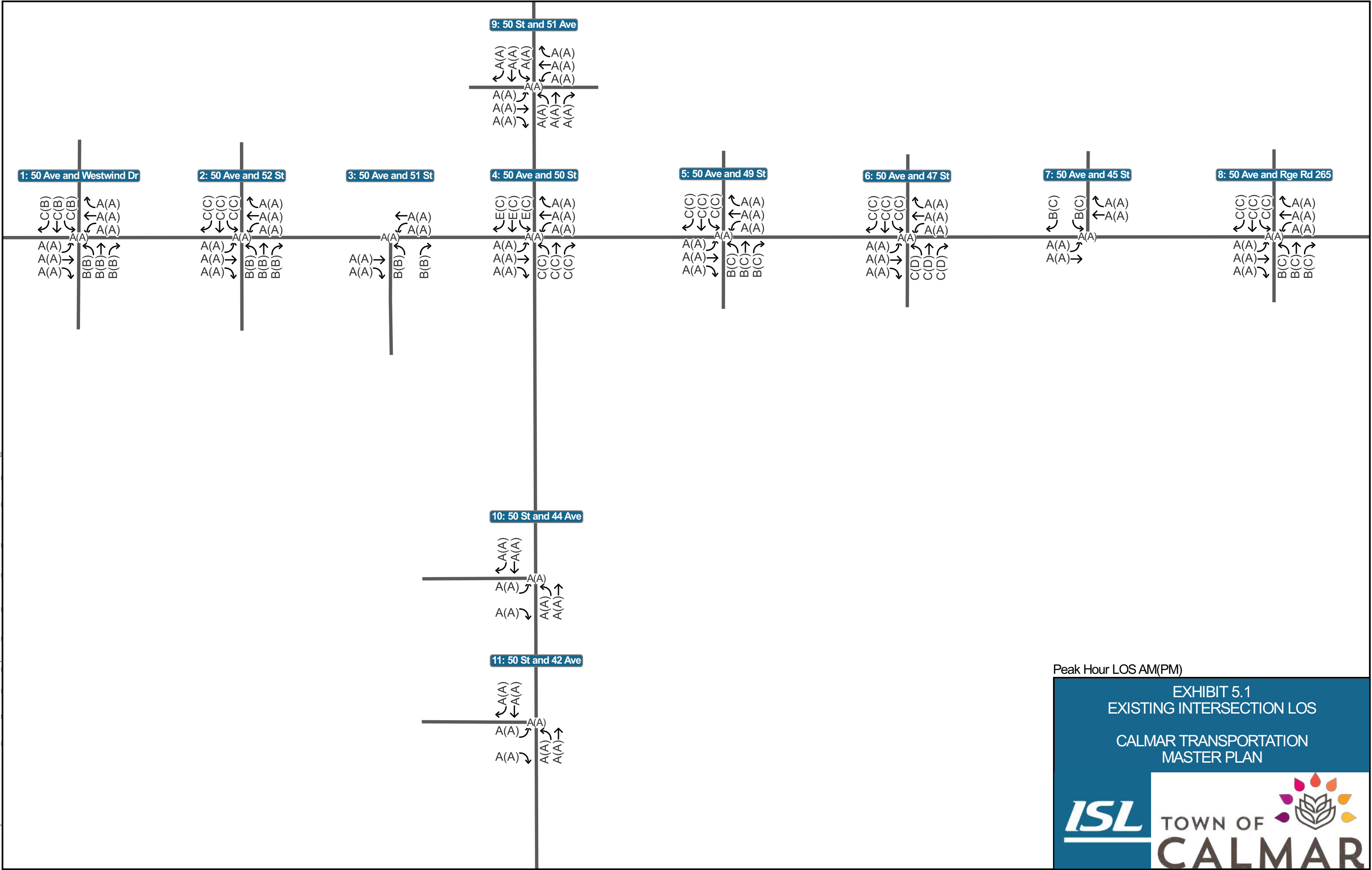
5.3 Recommended Roadway Network Improvements

The following roadway network improvements are recommended based on the capacity analysis:

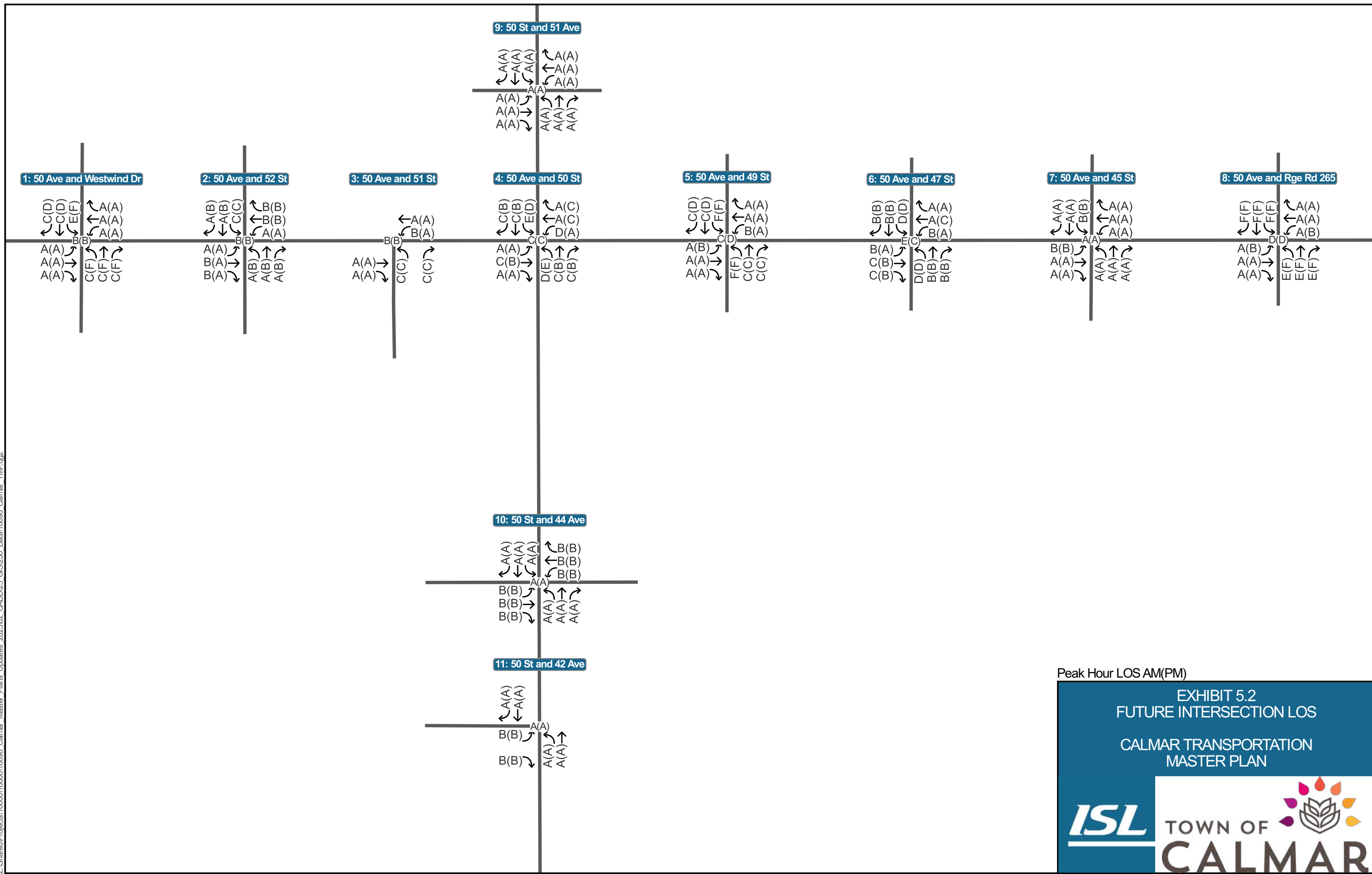
- Short Term:
 - Dedicated eastbound and westbound left turn lanes at all urban intersections on 50 Avenue.
 - While left turn lanes are not warranted for all approaches, this would provide consistency throughout the segment and reduce driver confusion.
 - 52 Street dedicated westbound left turn lane, upgrade to Type IIIc intersection
 - Westview Drive extension to 50 Street.
 - This will provide an alternative route to the Elementary School, reducing the demand on 50 Avenue and 50 Street.
- 20-Year Horizon includes all turn lanes from the existing recommendation and:
 - Traffic signals on 50 Avenue at 52 Street, 50 Street, and 47 Street.
 - Two-lane roundabout at 50 Avenue and 45 Street.
 - 50 Avenue and 47 Street westbound dedicated right turn lane.
 - 50 Avenue and 50 Street dedicated eastbound right turn lane.
 - Westview Drive extension to 45 Street.
 - New east-west road south of 50 Avenue connecting into 45 Street. The location of the connection will be determined in the future.

The future roadway network is shown in Exhibit 5.3.

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6.0 Downtown Revitalization Plan – High Load Corridor

In 2021, the Town of Calmar published the Community Vitalization Plan (CVP), prepared by DIALOG. This plan envisions a new definition for the downtown area of Calmar by enhancing visual ambiance, increasing safety, supporting local businesses, and boosting tourism opportunities. The planning context for this report focuses on the section of 50 Avenue between 47 Street and 51 Street (**Figure 6.1**), which functions as Provincial Highway 39 and is a high-load corridor. The focus is to outline requirements for designing a High Load Corridor while presenting some optional design cross-sections that align with the vision for the corridor in the CVP and meet the necessary engineering specifications for the highway.



Figure 6.1: Study limits of the Community Vitalization Plan

The CVP is supported by several foundational documents, including the Town's Municipal Development Plan (2019), and Economic Development Strategic Action Plan (2020). As identified in the CVP, the design and function of the Highway 39 transportation corridor present significant challenges to implementing this vision. This corridor must meet specific engineering standards for high load routes while also providing a safe environment for pedestrians, managing traffic flow, and creating an attractive environment for businesses and community activities. Additionally, coordination with TEC is crucial to ensure that any changes to the corridor comply with provincial regulations, standards, and long-term planning objectives for the road network.

6.1 High Load Corridor Operations

One of the major constraints in implementing the CVP is the need to align the streetscape design with the requirements set by TEC. Highway 39 is designated as a High Load Corridor by TEC, meaning it must accommodate the transportation of oversized loads, such as large construction equipment, petrochemical pressure vessels, wind turbine components, and prefabricated homes or structures.

Some of the necessary requirements are that streetlights and overhead lighting poles along the route need to be designed with rotatable bases that can be moved out of the right-of-way when oversized loads

are present or constructed to provide a sufficiently large overhead envelope to not require these elements. Based on the size of the load, oversized vehicles sometimes require the temporary closure of the roadway for oncoming traffic. These closures and temporary measures are managed by convoys, including pilot vehicles that travel in advance of the main transport.

In matching the vision of the CVP with these requirements, a high load could traverse the Town of Calmar in a few configurations. These operating modes will be referenced later when assessing different cross-sections:

1. **Mode 1** - Sufficient width to allow two oversized loads to traverse simultaneously.
2. **Mode 2** - Sufficient width for a single oversized load to traverse while maintaining regular traffic flow.
3. **Mode 3** - Sufficient width for a single oversized load to traverse with minor encroachment into oncoming traffic, requiring slowing down or utilizing the shoulder.
4. **Mode 4** - Sufficient width for a single oversized load to traverse with major encroachment into oncoming traffic, necessitating a full closure for oncoming traffic.

There are three oversized design vehicles that TEC (**see Appendix I**) uses for assessing the necessary clearance envelope. They include:

- The Heavy Hauler (7.3m width, 1.05m overhang)
- The Platform Trailer (7.3m width, 1.05m overhang)
- The Reactor Transporter (9.0m width, 1.15m overhang)

The Heavy Hauler and the Platform Trailer differ in their turning and cornering requirements. Since the study corridor is a straight roadway, both 7.3m vehicles will be considered as requiring the same clearance envelope. Thus, design concepts will depict the needs for 1) 7.3m loads and 2) 9.0m loads.

Currently, 50 Avenue operates under mode 2 for 7.3m vehicles and under mode 3 for 9.0m vehicles supported through wide travel and parking lanes along 50 Avenue. The 50 Avenue width is beneficial for oversized loads with maneuverability improved with significant clearance to obstacles, and efficient operations are permitted. However, the wide road can result in higher traffic speeds, misinterpretation of lane markings (leading to safety concerns), and a less appealing environment for pedestrians.

6.1 Community Vitalization Plan

The Community Vitalization Plan (CVP) for the Town of Calmar outlines a comprehensive vision for enhancing the downtown area, focusing on key elements such as roadways, sidewalks, intersections, and other streetscape components. The plan recommends several design elements to achieve these goals, including i) widened sidewalks, ii) consistent lighting schemes, iii) improved intersections, and iv) enhanced public spaces. Of the six guiding principles in the CVP, the Walkable & Safe category aims to provide a safe and comfortable area for both pedestrians and vehicles. The CVP also identified that the “current classification of Highway 39 focuses on drivers of vehicles as the core users” and that there is “an emphasis on uninterrupted flow of traffic”. This concept clashes with the future vision of the downtown core.

The CVP generated five unique focus areas and twenty-three action items across immediate & short term and medium & long term delivery horizons. Public realm improvements to 50 Avenue are repeated across three of the focus areas, along with intersection improvements at four separate locations. One of the

intersection improvements has already been completed, specifically a pedestrian crossing at 51 Street, built using Rectangular Rapid Flashing Beacons (RRFBs).

Public realm improvements to 50 Avenue are described as designing and constructing widened sidewalks, curb extensions, street trees, landscaping and pedestrian scaled lighting for midblock sections between 51 Street and 47 Street. In order to provide right-of-way for these improvements, tradeoffs must be made to the existing cross-section, while also meeting the requirements for an oversized load to traverse. The selection of landscaping and tree canopies must be carefully assessed to ensure that the space envelope of an oversized load is still accommodated. Excerpts from the CVP are provided below.



Figure 6.2: Excerpts from Community Vitalization Plan

6.2 Traffic Calming

Traffic calming measures are used by road authorities to address concerns regarding driver behaviour, including speeding and shortcutting. Traffic calming strategies promote responsible driving behaviour, encourage the roadway to be used as intended and provides safe access and passage for non-motorized street users. Common types include horizontal deflections that force vehicles to slow down through lateral shifting or roadway narrowing that causes drivers to be uncomfortable at higher speeds.

The traffic calming recommendations for this corridor are guided by the CVP's principle of providing a safe and comfortable area for both pedestrians and vehicles, while accommodating the requirements of high load routes. While these proposed strategies can be implemented within the existing cross-sections, they offer additional benefits when combined with the proposed cross-sections that include improved pedestrian facilities. The following methods focus on horizontal narrowing, which makes higher speeds uncomfortable for drivers and thereby helps reduce overall vehicle speeds.

Painted On-Street Parking Stalls

Paint on-street parking stalls to discourage vehicles from using the parking lane as a travel lane. Differentiating between the on-street parking and travel lanes using paint lines also creates the impression of a narrower travel width. The Town currently uses this method, with an example shown below.



Figure 6.3: 50 Avenue Painted On-Street Parking Stalls

Curb Extensions

Curb extensions are commonly used throughout Alberta and generally have higher levels of public acceptance. They can be implemented at intersections or midblock locations. When used at crosswalks, they offer the added benefits of improving pedestrian visibility and reducing crossing distances. In areas with on-street parking, curb extensions reinforce the presence of the parking lane and help prevent its misuse as a travel lane. Many of the downtown intersections currently include curb extensions to some extent, however they are relatively narrow, between 1-2 m in width compared to the 4.0 m parking lane. Wider curb extensions would further narrow the travel lanes while also reducing the crossing distance for pedestrians and improving pedestrian visibility.

6.3 Existing Cross-Sections

In general, there is 24m of right-of-way (ROW) between property lines throughout the core of Calmar. Certain sections of Highway 39 include zero-setback buildings or private parking lots that are built right to the property line. West of 51 street, the ROW expands to 33m. The zero-setback sections have been selected to depict the tightest constraints as potential cross-sections for Highway 39.

There are two typical cross-sections along the corridor:

- **Cross-section A** (midblock): Lane markings for two-way traffic with additional space for curbside parking.
 - Sidewalks vary between 2.0 and 3.2m in width, varying due to various furnishing zone width and offsets for turning lanes at intersections.
 - Paved surface varies between 17.6 and 20m in width, split evenly with a solid yellow centreline.
 - At mid-block, the curb-side lane acts as a parking lane and becomes an additional turning lane at intersections where no parking is permitted.
 - When no parked vehicles are present, the cross-section resembles a four-lane road in width.



Figure 6.4: Existing mid-block cross-section A (Made with Streetmix)

- **Cross-Section B** (intersections): At 50 Street (Highway 795) the yellow centreline shifts to provide space for 3.5 m left turning lanes. Some intersections include curb extensions to reduce the crossing distance. The size of the curb extension varies, with most extending between 1.0 to 2.0 m into the roadway. Not all intersections contain a left turning lane, but retain the rest of the elements described below:
 - Sidewalks narrow as the curb flares out to provide additional pavement for right-turning vehicles.
 - The curb-side lane is painted yellow throughout Calmar to indicate no parking. The curbside lane is treated as a right-turning lane for vehicles slowing down or accelerating from the minor roadway, however this is not specifically marked in the pavement markings.



Figure 6.5: Existing intersection cross-section B (Made with Streetmix)

6.3.1 Existing Operations with Oversized Loads

The figures below depict operating conditions for oversized loads under existing conditions. For a 7.3m load, there is sufficient clearance from parked vehicles and oncoming traffic to require only slight diverting and shifting of oncoming traffic. For a 9.0m load, maintaining clearance to any parked cars requires straddling the centreline, requiring oncoming traffic to significantly make way but still have sufficient clearance to parked cars.

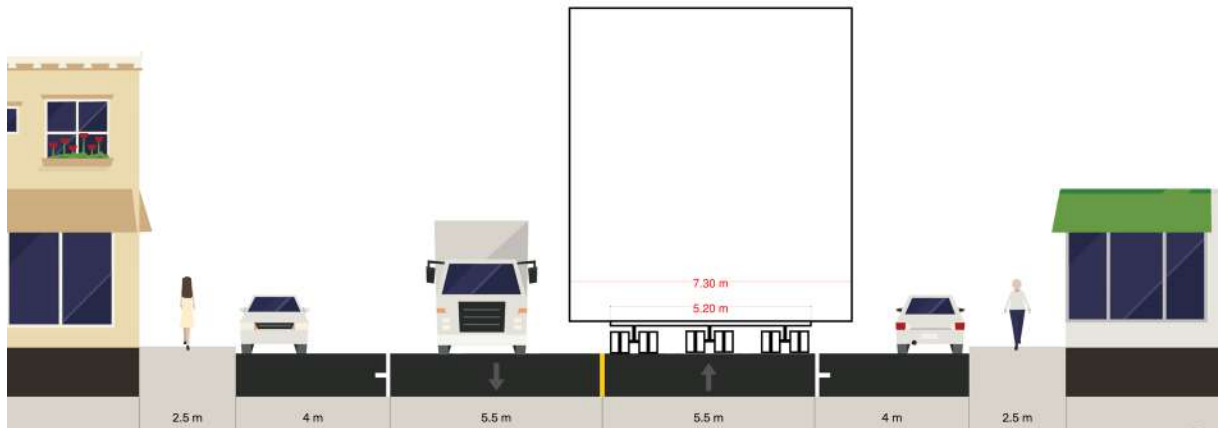


Figure 6.6: Operating envelope for cross-section A with 7.3m load (Made with Streetmix)

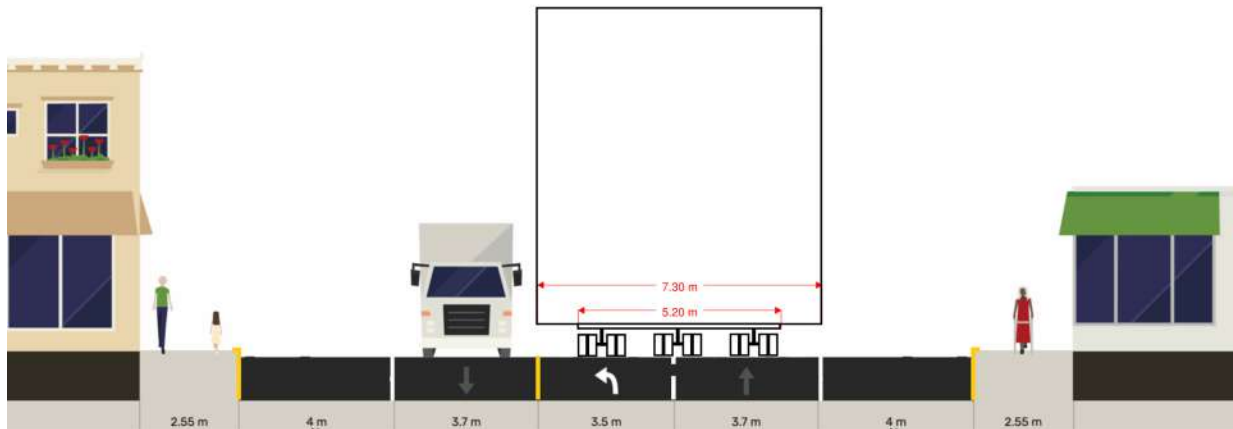


Figure 6.7: Operating envelope for cross-section B with 7.3m load (Made with Streetmix)

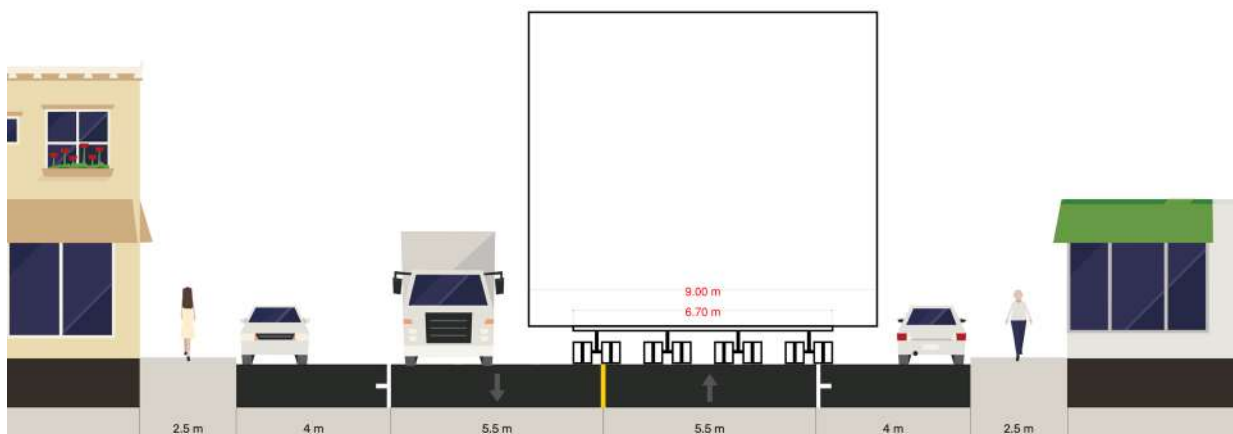


Figure 6.8: Operating envelope for cross-section A with 9.0m load (Made with Streetmix)

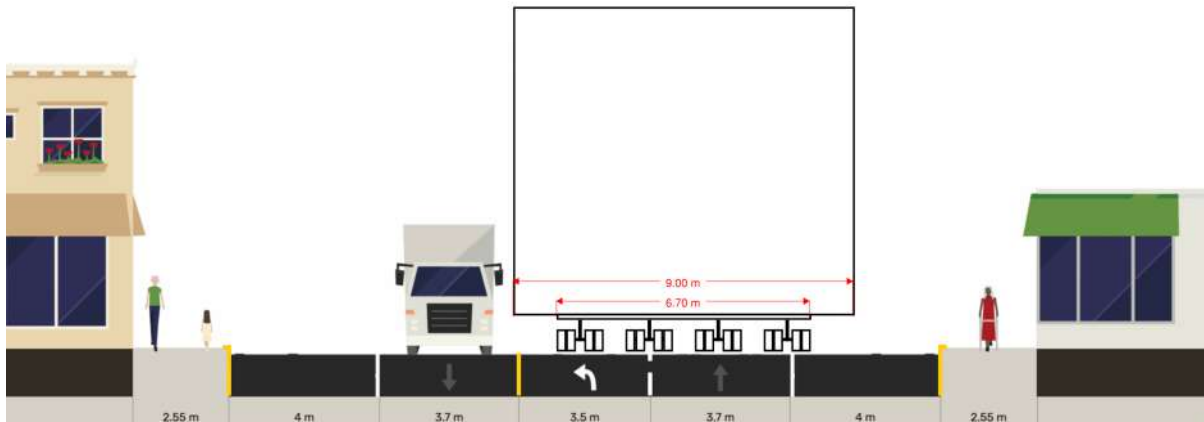


Figure 6.9: Operating envelope for cross-section B with 9.0m load (Made with Streetmix)

Photos below depict an oversized load traveling along 50 Avenue. Vehicles traveling in the same direction were unable to pass. The leftmost wheels were on the centerline, with the load encroaching into the opposing travel lane.



Figure 6.10: Oversize Load Traveling on 50 Avenue (front view) (Source: ISL)



Figure 6.11: Oversize Load Traveling on 50 Avenue (Rear View) (Source: ISL)

6.4 Proposed Cross-Sections

Maintaining the 24m right-of-way, the following section outlines some potential cross-sections that aim to satisfy the vision of the CVP, by providing additional space for sidewalks, boulevards, landscaping, street lighting and trees. For reference purposes, the recently redeveloped (2016) downtown section of 50 Avenue within the City of Leduc includes many of the elements described in the CVP. Although this roadway is narrower than Calmar's main street (~22m vs 24m ROW), and this corridor is not a designated High Load Corridor, elements such as parklets, curb bulb outs, short pedestrian crossing distances and landscaping spaces can provide inspiration for the Town of Calmar.



Figure 6.12: 50 Avenue Streetscape within City of Leduc

As part of TEC's High Load Corridor, 50 Street must meet certain design criteria. The minimum requirements are as follows:

- Through lane width = 3.7 m
- Turn lane width = 3.5 m
- Parallel parking width = 2.4 m (TEC HGDG Table C-2-1a)
- Pavement width = 10.0 m minimum, 12.0 m desirable (Routine Geometric Assessment)

The proposed downtown cross-sections are shown in **Figures 6.13 and 6.14**. The width of Calmar's current parallel parking lanes presents an opportunity for enhancing the pedestrian realm, as it is currently 1.6 m wider than the minimum 2.4 m. The parking lane could be narrowed to provide space for planters or extend the sidewalks. This would also make 50 Avenue feel narrower overall which encourages drivers to reduce speeds. Similarly, while some intersections currently include curb extensions, they do not occupy the full 4.0 m width of the parking lane. These could be widened to further narrow the roadway at the intersection while maintaining the minimum pavement widths.

Cross-section C (Figure 6.13) shows a proposed 50 Avenue downtown mid-block cross-section. While some widths will vary based on the available ROW and paved surface, key elements include:

- Parking lane width reduced to approximately 2.5 m.
- Approximately 1.5 m reallocated from the parking lane to the frontage zone, providing space for some mix of planters, increased sidewalk width, and/or furnishing. The exact composition of the 1.5 m reallocation is flexible and can be modified to suit the Town and TEC's needs.
- 3.7 m through lanes and a 3.5 m left turn lane.



Figure 6.13: Proposed 50 Avenue Downtown Mid-Block Cross-Section C

Cross-Section D (Figure 6.14) shows a potential 50 Avenue downtown cross-section at an intersection. While some widths will vary based on the available ROW and paved surface, key elements include:

- Parking lane width reallocated to curb extensions. The exact composition of the 4.0 m reallocation is flexible and can be modified to suit the Town and TEC's needs.
 - Some of the existing pavement width could be maintained for vehicle use if needed for large vehicle turning movements. This may be required at 50 Street south it is also a highway intersection.
- 3.7 m through lanes and a 3.5 m left turn lane.



Figure 6.14: Proposed 50 Avenue Downtown Intersection Cross-Section D

The following is noted:

- In both cross-section C and D, the travel lanes meet the minimum widths, which results in a 10.9 m paved surface including a central left turn lane. If required, the cross-sections can be modified to include the desirable 12.0 m pavement width by shifting 0.55 m of the propose frontage zone on each side to dedicated pavement width. This can be achieved by adding hash marks painted next to the parking lane, similar to the City of Leduc example above in **Figure 6.3**. The hash-marks create a visual narrowing of the travel lanes while maintaining additional space as needed for oversized loads.
- It is also acknowledged that, even with a 12.0 m paved cross-section, a 9.0 m load would likely require drivers to give way until the oversized load had passed.
- The proposed cross-sections assume no right turn lanes in the downtown core (50 Avenue between 50 Street and 47 Street). While analysis indicates that the 50 Avenue downtown core can operate sufficiently without right turn lanes, it is possible that they will be required by TEC at some locations such as at 49 Street westbound. If a right turn lane is required, the intersection cross-section would be modified to include a 3.5 m right turn lane and 0.5 m painted buffer for the approach needing the added turn lane. Some on-street parking would also need to be removed.

Further review is required to determine what is feasible for the Town and what is permitted by TEC. The cross-section modifications can be achieved using paint lines and removable planter boxes. This could serve as a trial period to determine what cross-section configuration works best for downtown 50 Avenue at relatively low cost. It is recommended that the Town explore the temporary treatment option further internally and with TEC.

6.5 Parking Supply

While some angled parking areas are provided on 49 Street, the downtown is currently heavily reliant on on-street parking options. Potential future requirements from TEC, such as 50 Avenue twinning or adding right-turn lanes, could reduce the available on-street parking. The proposed cross-sections would also narrow the parking lane, which may affect driver's comfort when parallel parking. The Town may consider a study to review opportunities for alternative parking off 50 Avenue. This would provide contingency plans in case roadway modifications are required, as well as offer alternative parking locations for those more comfortable further from the highway. The present parking supply and supplementary parking possibilities should be evaluated, with a focus on assessing parking demand for both current and future needs. The review should include considerations for accessible parking spaces.

7.0 Active Modes Network

The following section discusses Calmar's existing sidewalk and trail network, current standards for creating new sidewalk and trail facilities and accessibility requirements. The existing sidewalk and trail network are discussed against current standards and opportunities for creating new connections. Section 7.4 provides a review of crosswalks on 50 Avenue.

7.1 Existing Network

The existing sidewalk and trail network is presented in **Exhibit 7.1** (as provided by the Town) and discussed in the following subsections.

Sidewalks

Sidewalks are provided alongside the majority of the Town's roadway network within the residential and downtown areas, in the form of a separate sidewalk with a roadside boulevard or as a monowalk with no roadside boulevard. Both separate sidewalks and monowalks are suitable for users, with separate walks more often preferred on busier roadways, such as collectors and arterials.

Sidewalk conditions (as reported by the Town and shown on **Exhibit 7.1**) are mostly good, with some sections noted as fair and a small section on 52 Street noted as poor.

Trails

Off-street trails are provided within Centre Park, from downtown through the Ball Diamonds, along the stormwater pond in the Southbridge subdivision and 50 Avenue between downtown and Westview Drive. Trails are noted as in good condition (as reported by the Town). Trails generally are more preferred than sidewalks for users because they are wider and mostly off-street.

7.2 Current Standards

Standards for implementing the active transportation network are outlined in the Town's Design and Construction Standards and supplemented by the Transportation Association of Canada Geometric Design Guide (TAC GDG).

Design and Construction Standards

The Town's design and construction standards indicated a need for a minimum 1.5 m sidewalk on both sides of urban (with curb and gutter) local and collector roadways, with a 3.0 m shared pathway (trail) on one side of an arterial and a sidewalk on the other. Examples of urban roadways that provide sidewalks on both sides are shown below.



Legend

Sidewalks

- Good —
- Fair —
- Poor —

- Trails** —

EXHIBIT 7.1
ACTIVE TRANSPORTATION NETWORK
CALMAR TRANSPORTATION
MASTER PLAN





Figure 7.1: Example of an Urban Roadway in Calmar - 52 Street (Source: Google)



Figure 7.2: Example of an Urban Roadway in Calmar - 50 Avenue (Source: ISL)

Rural roads (those with ditch drainage systems) do not require a sidewalk based on the Town's standards, an example is shown below.



Figure 7.3: Example of a Rural Roadway in Calmar - 43 Avenue (Source: Google)

Accessibility Requirements

Accessibility requirements are summarized as follows based on the TAC GDG.

- **Clear Paths:** An accessible pedestrian route should be straight and free of obstructions. Items like benches, poles, signs, and trees must be placed in a separate amenity zone within 600 mm of the route for detection by white cane users. Turns should be as close to 90 degrees as possible.
- **Surface:** The accessible route should be firm, stable and slip-resistant, avoiding busy patterns that may cause disorientation. Use textured surfaces to define paths in open areas. Gratings must be outside the route, with openings no wider than 13 mm and oriented perpendicular to travel.
- **Slopes:** The accessible route should have a running slope no steeper than 5% and a cross slope no steeper than 2%. Ramps with a rise over 13 mm should have a slope between 1:20 (5%) and 1:12 (8.33%).
- **Operating Widths:** A pedestrian horizontal operating envelope is 0.75 m to allow for lateral sway. This increases to 1.2 m for those accompanied by a child, a sighted guide, or a service animal. A person using crutches needs 0.92 m, with no obstructions below 300 mm in that space. Cane users require 1.05 m to account for cane sweep and can detect obstacles up to 685 mm high. Manual wheelchair users require 0.9 m width.
- **Passing Widths:** The width needed for two wheelchairs to pass is 1.8 m, while two pedestrians need at least 1.5 m, or up to 1.8 m when accounting for personal space. The vertical operating envelope for pedestrians is 2.1 m. Eye height ranges from 1.3 to 1.7 m for walkers and about 1.1 m for wheelchair users.
- **Turning Widths:** A manual wheelchair requires a 2.1 m by 2.1 m area for a 180-degree turn. Powered wheelchairs need a turning radius of 2.25 m, while large scooters require 3.15 m.
- **Tactile Walking Surface:** Various types of tactile walking surface indicators help people detect changes visually and by foot or cane contact. There are often placed at curb ramps.
- **Drainage:** Pedestrian routes should be well-drained to prevent the accumulation of ice / water.

Operating envelopes are shown in the following figures.

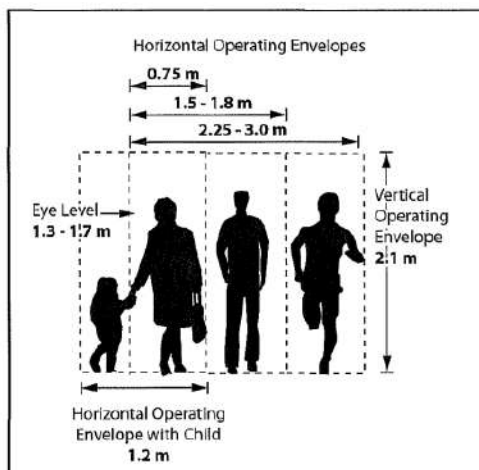


Figure 6.2.1: Typical Pedestrian Dimensions

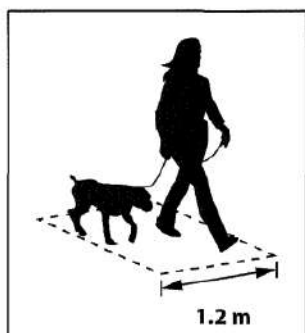


Figure 6.2.2: Horizontal Operating Envelope for a Person with a Service Animal

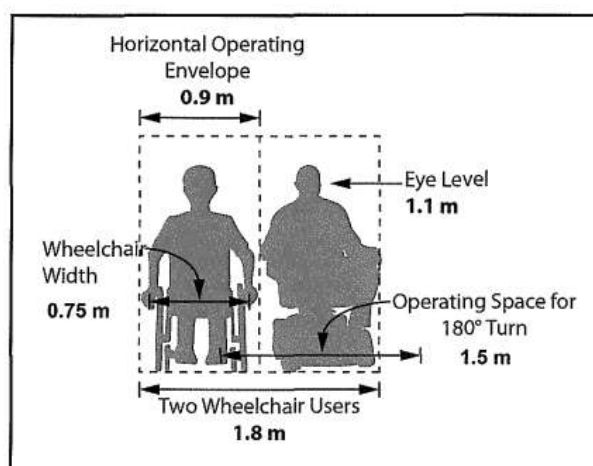


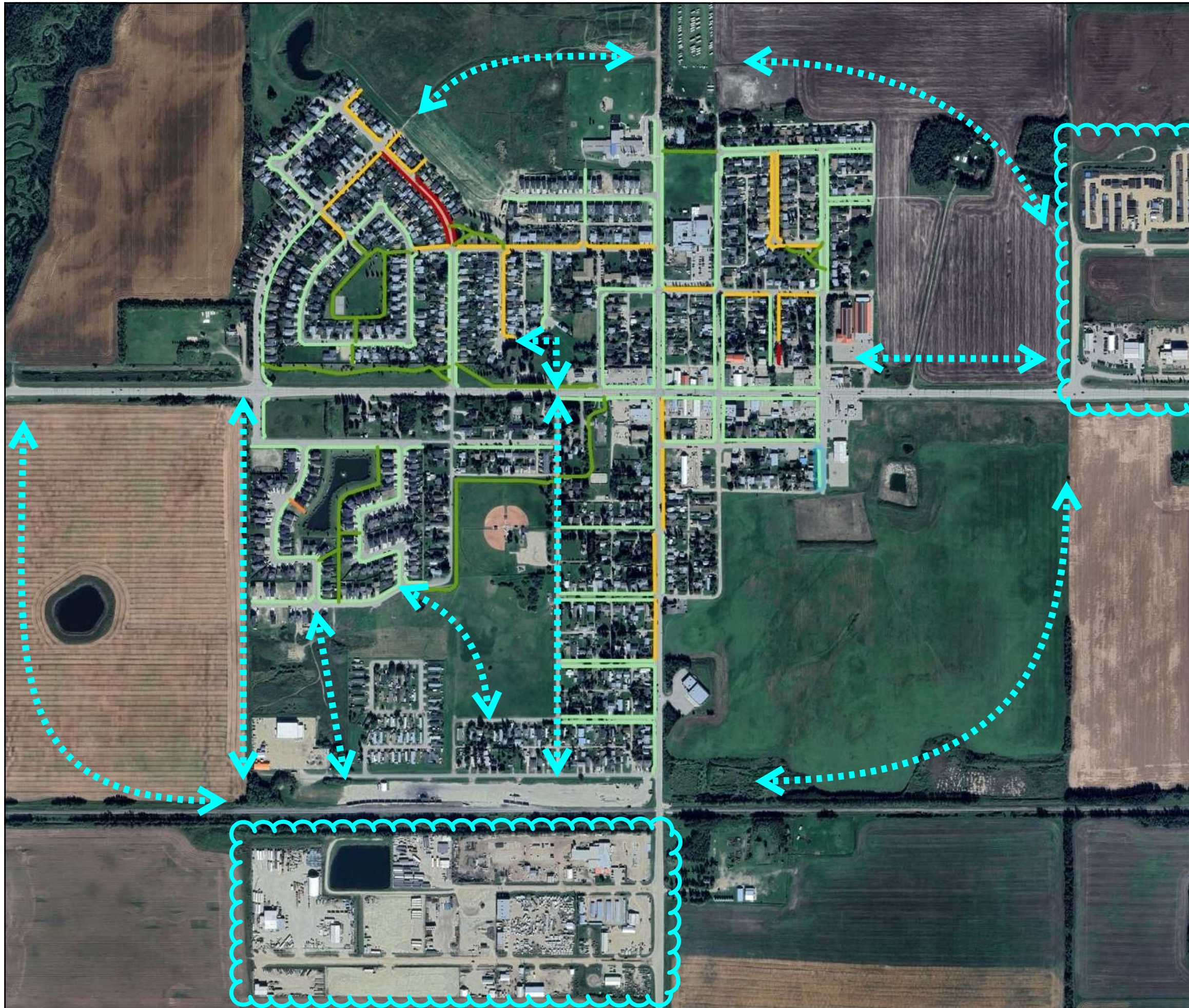
Figure 6.2.3: Wheelchair User Dimensions

Figure 7.4: Horizontal Operating Envelopes and Other Pedestrian Dimensions (Sources: TAC GDG)

7.3 Trail and Sidewalk Network Review

The trails and sidewalk system considerations are shown in **Exhibit 7.2** and discussed as follows:

- **Missing Connections, One Side (Urban Roads):** The current standards require a sidewalk or trail on both sides of urban roadways, but this standard may have been in place after some neighbourhoods were already constructed. Currently urban roads in the town provide at least a sidewalk on one side, with many areas providing a sidewalk on both sides. The second sidewalk (or trail) or sidewalk) should be constructed over time as roadways are upgraded or construction through a separate program to build missing connections. Some roadways may require reconstruction (such as moving the curb line) to create space for a sidewalk which likely makes it too costly on it's own unless the roadway undergoes full reconstruction.
- **Missing Connections, Both Sides (Rural Roads):** Overall most of the town's residential and commercial areas have urban roads with an active transportation connection on at least one side. However, some areas have roadways as rural roadways and have no type of active transportation connection. These are discussed as follows:
 - **Industrial Areas:** Industrial areas in the Town have rural roadways and no sidewalk or trail connection on both sides of the roadway. Although not currently standard requirements, the Town



Legend
Missing Links
Disconnected Areas

EXHIBIT 7.2
MISSING ACTIVE CONNECTIONS
CALMAR TRANSPORTION
MASTER PLAN

should consider adding an active transportation connection to these areas. Active transportation facilities benefit the area by making it more accessible to more people.

- **50 Avenue to East Industrial and 50 Street to South Industrial:** Add an off-street trail or sidewalk between the Town and the east and south industrial areas. A new connection to the industrial area provides residents an active transportation option to travel to work in these areas. This should be added as development expands or constructed within Highway right of way. If the connection is placed in the Highway right of way, implementation will need to follow Transportation and Economic Corridors (TEC) requirements. Their previous “Trails in Alberta Highway Rights-of-way” Policy may have allowed a connection but was recently withdrawn/archived as a policy and replaced with any new or updated guidance.
- **51 Street, 50 Avenue to 47 Avenue:** Many existing sidewalks connect to 51 Street but there is no active transportation facility available on this road. Adding a facility to this corridor would provide a strong north/south connection between existing sidewalks and connect to the downtown.
- **44 Avenue, 50 Street to west Limits:** Like 51 Street, this would provide strong east/west connectivity, especially if the existing connections of 50 Street are extended south.
- **49 Street/47 Avenue:** Connects to many existing sidewalks but has no option for active transportation.
- **Missing Network Connections:** Other connections that would benefit the active transportation network include:
 - **47 Avenue and 44 Avenue (North/South Connectivity):** There is no available direct north/south active transportation travel between 47 Avenue and 44 Avenue. Active travel between these areas involves a long and a circuitous route if following existing sidewalks and trails. Otherwise, the routes involves travelling withing open areas/fields through an undesignated/informal and inaccessible route. The Town should consider adding a north/south connection between these two roads to provide more direct connectivity north/south.
 - **52 Street to 50 Street (East/West Connectivity):** As development expands north, active transportation connections are expected to be constructed, but if development stalls the Town could consider adding a connection because it would be more direct to the school.
 - **50 Street to 45 Street (East-West Connectivity):** The Town should plan for this connection as development expands northeast. While no residential growth is identified in this TMP, this remains a prime location for a trail and should be included in future planning.
 - **Connectivity south of 50 Avenue:** Similar to above, the Town should consider reserving land along the future 45 Street south, the rail track, and north to Westview Drive or further west near Range Road 271. This would create a cohesive trail system with minimal roadway crossings. The Town currently owns a section of ROW north of the rail line that is reserved for a future trail system in the Thomas Creek ASP lands.
 - **Spruceview Crescent to 50 Avenue:** The Town currently owns a section of ROW north of St. Margaret Mary Catholic Church which is intended to be a future trail connection. The Town should explore opportunities to obtain sufficient lands to the west to create the active modes connection.
- **Accessibility:** The Town should conduct a follow up study to review the accessibility of the current trail and sidewalk network.

7.4 50 Avenue Pedestrian Crossings Review

The following section discusses the pedestrian crossings on 50 Avenue as requested by the Town administration for this project. Pedestrian crossings are reviewed based on the Pedestrian Crossing Control Guide (PCCG) published by the Transportation Association of Canada (TAC).

The existing crossings are summarized in the following table and compared to the TAC PCCG results.

- **Speed Limit:** 50 km/h
- **Traffic Volumes:** ~8,000 vehicles per day (existing), 19,000 vehicles per day (20-year growth)
- **Number of Lanes:** Four (4), includes driving and parking lanes
- **PCCG Treatment (Existing):** Rectangular Rapid Flashing Beacons (RRFB)
- **PCCG Treatment (20-Year):** Overhead Flashing Signals (OF)

Table 7.1: 50 Avenue Pedestrian Crossing Control Review

Intersection	Existing Traffic Controls	Warranted Traffic Controls		Controls Met or Exceeded	
		Existing	20-Year	Existing	20-Year
Westview Drive	RRFB	RRFB	OF	Yes	No
52 Street	RRFB	RRFB	OF	Yes	No
51 Street	RRFB	RRFB	OF	Yes	No
50 Street	OF	RRFB	OF	Yes	Yes
49 Street	OF	RRFB	OF	Yes	Yes
47 Street	OF	RRFB	OF	Yes	Yes

As shown in the above table, the Town should consider upgrading the 50 Avenue crossings at Westview Drive, 52 Street, and 51 Street an Overhead Flashing signal based on future 20-year volumes.

Based on feedback from public engagement, many school children feel more comfortable crossing 50 Avenue at 51 Street rather than 50 Street because there are fewer potential conflict points at T-intersection. Additionally, it was noted that large trucks often park along 50 Avenue west of 51 Street which obscures view of the pedestrian crossing and RRFB. The Town should consider conducting a pedestrian safety review at this intersection to determine whether upgrades are required. The study should include a sightline review, on-site observations, and pedestrian volume count during a school weekday. Potential outcomes of the study include recommendations to upgrade to an overhead flashing signal, parking restrictions, or the that no upgrades are required.

8.0 Site Specific Reviews

8.1 50 Street and 51 Avenue Intersection Review

The intersection of 50 Street and 51 Avenue is frequently used by school children to access both the elementary school and secondary school. The intersection was reviewed in detail to identify any needed safety improvements. Video footage was collected on March 19, 2025, from 7:00 AM to 7:00 PM to observe the pedestrian and vehicle behaviour at the four-way stop controlled intersection. The following was observed based on the footage:

- 189 pedestrians crossed at the intersection over the 12-hour time period. Most pedestrians (131) are crossing 51 Avenue. Of the 58 pedestrians crossing 50 Street, eight were counted crossing the south leg (northbound vehicle travel direction).
- Video footage from 7:00 AM shows that the intersection is poorly lit. This is a concern for when students walk to school during the winter months when sunrise is later than the start of school.
- Some drivers choose to stop at the crosswalk rather than the stop sign, particularly on 50 Street where the stop sign is set back 5 m from the crossing versus a 3 m setback on 51 Avenue.
- Some instances where drivers failed to comply with the stop sign, such as a rolling stop or failure to stop. This was more frequent outside of peak times.
- Minimal vehicle delay was observed even during peak times, with no or few cars queued.
- The busiest 15-minute periods for traffic is correlated to school times, 8:00 to 8:15 AM and 3:00 PM to 3:15 PM.

Recommendation

Overall, the intersection of 50 Street and 51 Avenue appears to be operating safely both for pedestrians and vehicles. It is recommended that the town reviewed the lighting at this intersection to ensure that it is adequately lit for pedestrians, particularly during the winter months.



Figure 8.1: Intersection of 50 Street and 51 Avenue, daytime using camera phone (left) and at 7:00 AM using CountCam4 (right) (Source:ISL)

8.2 51 Avenue and 51 Street Corner Review

The local roadway segment of 51 Avenue and 51 Street (north) was reviewed due to residents' concerns of congestion and difficulty navigating due to vehicles parked on-street. The segment provides local access to around 16 houses and a small apartment complex. The following is noted:

- During ISL's 12-hour traffic count on March 19, 2025, 146 vehicles entered or exited 51 Avenue at 50 Street. This is well within the expected traffic volume for a local roadway, which is intended to accommodate up to 1,000 vehicles per day.
- The corridor has a paved width of approximately 8.7m. This is below the 10.m required in the Town's design standards.
- The roadway segments currently have a 20.0 m right-of-way (ROW). This is more than the required 18.0 m ROW for a local residential road in the Town's design standards.
- The road operates as a single travel lane when vehicles are parked on both sides, requiring opposing traffic to yield to oncoming vehicles.
- Sidewalk is only provided on one side of the street, whereas the current standards require a sidewalk or trail on both. Additionally, the location of the sidewalk shifts at the transition from the east side of 51 Street to the north side of 51 Avenue. This is undesirable as a likely route to school.



Figure 8.2: 51 Street Looking South (Source: ISL)

Four (4) options were considered to address resident congestion concerns at this location as follows:

Option 1: Ban parking on one side

Banning parking on one side of the road will allow sufficient space for 2-way operation without yielding.

Option 2: Widen roadway, maintain parking

Increasing the roadway width to 10m bring the section up to standard for a local residential roadway. The current ROW is 20m wide, providing sufficient space for the expansion without property acquisition. It is noted, however, that the benefits are marginal compared to the cost of a full roadway reconstruction including drainage. Drivers may remain uncomfortable passing oncoming traffic as 10.0 m is still constrained if on-street parking is permitted. The TAC GDGCR uses a 2.0 m design width for passenger vehicles. While four vehicles technically fit along the 10.0 m paved width, there is very little space between vehicles.

Option 3: Convert to one-way traffic

Conversion to one-way operation would remove conflicts between vehicles travelling in opposite directions while still allowing parking to be maintained on both sides. One-way operation is also expected to reduce the potential for short-cutting, but some residents would be forced to use alternative routes to get to and from their homes. This would also result in more traffic at the 50 Street and 51 Avenue intersection due to rerouted trips.

Option 4: Maintain existing configuration (Preferred Option)

While below the design standard width, 51 Avenue and 51 Street carry very low volumes (146 vehicles over a 12-hour count). Significant growth or new connections are not expected in this area. Low density residential development along the corridor, such as new single family homes or low density multi-family units, will have minimal impact on the overall operations considering the current low volumes and expected trips generated from low density residential. Presence of some driveways and alleys allows natural gaps in parking for 2-way traffic to yield. The existing 30 km/h speed limit is also supportive of single-lane operation. Single lane operations with vehicles yielding to oncoming vehicles is normal on local roadways and intentional to produce a traffic calming impact reducing speeds and volumes.

Recommendation

Maintaining the existing configuration is recommended as volumes are low on 51 Avenue and 51 Street, and significant growth is not expected in this area. New low density residential developments are not expected to have a meaningful impact on traffic operations and safety. Maintaining the existing configuration will reduce the potential for short-cutting as surrounding areas grow and ensure safer speeds for residents on 51 Avenue and 51 Street.

8.3 49 Avenue Between Southbridge Crescent and 52 Street

49 Avenue between Southbridge Crescent and 52 Street is currently connected by an approximately 4.8 m wide paved emergency access. This 49 Avenue connection is used by both pedestrians and vehicles, raising safety concerns since there is no clear separation between the two uses.



49 Avenue west of Westview Drive, looking east (Source: ISL)

Two options were considered to clarify the use of 49 Avenue, either converting it to an active modes only connection only removable barriers for emergency access or upgrading the cross-section to align with the Town's current standards. The advantages and disadvantages of both options are discussed in the table below.

Table 8.1: 49 Avenue Segment Options

Option	Advantages	Disadvantages / Considerations
Closing Connection to Vehicle Access	• Safe vehicle-free connection for pedestrians and cyclists • Minimal cost (consisting primarily of removable barriers) • No disruption to adjacent developments • Maintains emergency access.	• Less routes available for drivers • Potential small delay for emergency response depending on the barrier type. • Concentrates traffic on the 50 Avenue and Westview Drive intersection.
Standardizing the Cross-Section (adding a sidewalk)	• Provides clear separation between both vehicles and pedestrians. • Improves neighbourhood connectivity. • Distributes traffic to/from 50 Avenue between Westview Drive and 52 Street.	• Potential for increased traffic on 52 Street, which is constructed to a lower standard than Westview Drive. • Significantly more expensive as it requires full reconstruction of the segment.

Recommendation

It was ultimately determined that this segment provides valuable connectivity for both vehicles and pedestrians and should be upgraded to the Town's standards for a residential local roadway.

8.4 Westview Drive and 50 Avenue

The intersection of Westview Drive and 50 Avenue is currently a sub-standard Type IIIb. The intersection does not maintain TEC's minimum 2.3 m shoulder width for an RAU-212-110 design designation on the north side of 50 Avenue. This deficiency has been identified by TEC and is considered a required improvement for future development in the area. An intersection improvement plan drawing set was developed in 2022 to address insufficient shoulder widths. The drawing set shows Westview Drive as a Type IVc. The Town received approval from TEC for the widening that same year, but the permit has since lapsed. It is recommended the Town update the drawing set as needed and resubmit the permit request to TEC to complete the improvements in the short term.

It is noted that the analysis from this TMP suggests an upgrade to Type IVc is not required with existing conditions, however the adjacent lands are anticipated to be developed in the short term and this upgrade will support those development endeavors. It is additionally noted that, while TEC appears to have considered 50 Avenue as an RAU-212-110 design designation in their review of the 2022 drawing set, 50 Avenue has a posted speed of 50 km/h at this location whereas the RAU-212-110 design is associated with a 100 km/h design speed (100 posted speed). The shoulder width and design requirements should be confirmed with TEC.

The 2022 drawing set is provided in **Appendix J** for reference.

9.0 Implementation Strategy

9.1 Supplemental Studies

While the TMP is designed to provide the Town with clear direction on transportation infrastructure needs, its comprehensive scope means that recommendations are often presented at a generalized level, without the fine-grained detail required for implementation. Accordingly, several future studies are recommended to supplement and refine the strategies set forth in this TMP. These studies are recommended to be completed in the short term (0-10 years) to enable the Town to effectively plan for future infrastructure costs. The studies include:

- **Detailed Implementation Plan** – A supplementary study in collaboration with TEC to approve the travel demands, design volumes, and design criteria for roadway improvements.
- **50 Avenue Corridor Plan** - Identify the cross-sections, traffic controls, and required ROW needed to support the long-term roadway network demand. This includes roundabout design at 50 Avenue and 45 Street. Build off the generalized downtown cross-sections in this TMP to develop detailed roadway cross-sections and improvement plans to reallocate space on 50 Avenue to the pedestrian and furnishing zone. This may include both a temporary improvement plan with paint lines and planter boxes as well as cost estimates and design for permanent implementation. Collaboration with TEC is critical to ensuring proposed plans can be constructed.
- **50 Avenue and 51 Street (North) Crosswalk Safety Assessment** – determine whether an upgrade to overhead flashing signals and/or parking prohibition is needed in the short term.
- **Active Modes Accessibility Study** – Assess the accessibility of the current trail and sidewalk then identify and prioritize improvements.
- **Off 50-Avenue Downtown Parking Review (optional)** – Assess opportunities for parking locations off 50 Avenue as a contingency plan in the event TEC requirements remove on-street parking as well as offer an alternative parking location for those who prefer to park further from the highway. While this study has merit, it is not critical to support the infrastructure needs in the 20-year horizon and is considered optional.
- **Transportation Master Plan Update** – The Transportation Master Plan should be updated every 5-10 years based on expected growth.

9.2 Infrastructure Improvement Timelines

An approximate timeline for infrastructure improvements is provided below. These timelines are based on the TMP assessments and should be revisited if the assumptions from this TMP no longer align with the expected conditions.

Short Term (0-10 Years):

- 50 Avenue Urban Intersections - dedicated eastbound and westbound left-turn lanes. There is sufficient pavement width along this section for the left turn lanes to be painted while maintaining the on-street parking.
- 50 Avenue and Westview Drive – Upgrade to Type IVc.
- 49 Avenue (Southbridge Crescent to 52 Street) - Upgrade to residential local roadway cross-section.
- 52 Street - Upgrade to a Type IIIc intersection with a dedicated westbound left-turn lane.
- Westview Drive – Extend to 50 Street.

Long Term (10-20 Years):

- Traffic Signals - 50 Avenue at 52 Street, 50 Street, and 47 Street.
- Two-lane roundabout at 45 Street and 50 Avenue.
- Westbound right-turn lane at 47 Street
- Eastbound right-turn lane at 50 Street
- Extend Westview Drive to connect with 45 Street.
- New east-west corridor south of 50 Avenue connecting into 45 Street.

Ongoing: Address active modes network gaps over time as roadways are upgraded or through a separate program to build missing connections.

Improvement Timeline Considerations

The timelines for improvements are heavily dependent on the timing of future development. For example, while noted as long term (10-20 years), the need for intersection improvements west of 50 Street, such as the potential roundabout at 45 Street and 50 Avenue, should be considered when the large north and south commercial areas on 50 Avenue are being developed. This is because commercial developments generate the most trips of all the future land uses. The supplementary studies will assess infrastructure needs in greater detail. Recommendations from the studies should supersede those provided in this TMP.

9.3 10 Year Capital Improvement Plan Cost Estimates

Class 'D' cost estimates were developed for the infrastructure improvements and supplementary studies recommended in the short term. Timelines for specific active modes network improvements were not provided as this is assumed to occur with regular roadway improvements. Instead, a lump sum was included to account for active mode improvements.

Table 9.1: 10-Year Capital Improvement Plan Cost Estimates

Projects	Cost
50 Avenue Urban Intersection left turn lanes (Paint)	\$15,000
52 Street upgrade to a Type IIIc	\$72,000
49 Avenue - East of Southbridge Crescent of 52 Street Upgrade	\$35,000
Westview Drive and 50 Avenue TEC Intersection	\$100,000
Extend Westview Drive to 50 Street	\$2,240,000
Detailed Implementation Plan	\$15,000
50 Avenue Corridor Plan	\$200,000
50 Avenue and 51 Street (North) Crosswalk Safety Assessment	\$5,000
Active Modes Accessibility Study	\$20,000
Off 50-Avenue Downtown Parking Review (optional)	\$10,000
Transportation Master Plan Update	\$75,000
Sidewalk and Trail Gaps (Assumes ~300 m per year)	\$2,400,000
Total (+/- 30%)	\$5,187,000

10.0 Summary of Recommendations

This section outlines the key recommendations for the Town of Calmar's transportation network, aiming to address existing challenges and help the Town plan for the next 20 years of growth. The study areas and recommendations are discussed below.

Roadway Network Improvements

The Transportation Master Plan was completed with consideration of the Town's and TEC's standards, the goal of which is to provide a balanced set of recommendations that meet the Town's needs for a safe and well-connected network while ensuring 50 Avenue can still operate effectively as part of the Highway 39 high load corridor. Recommendations for the short (0-10 Years) and long (10-20 years) term roadway networks are provided below.

- **Short Term (0-10 Years):**
 - Dedicated eastbound and westbound left-turn lanes at all urban intersections along 50 Avenue.
 - Upgrade 52 Street to a Type IIIc intersection with a dedicated westbound left-turn lane.
 - Extend Westview Drive to 50 Street.
 - Upgrade 49 Avenue east of Southbridge Crescent of 52 Street to a residential local roadway cross-section.
 - Upgrade the intersection of Westview Drive and 50 Avenue to Type IVc.
- **Long Term (10-20 Years):**
 - Install traffic signals on 50 Avenue at 52 Street, 50 Street, and 47 Street.
 - Two-lane roundabout at 45 Street and 50 Avenue.
 - Westbound right-turn lane at 47 Street
 - Eastbound right-turn lane at 50 Street
 - Extend Westview Drive to connect with 45 Street.
 - New east-west corridor south of 50 Avenue connecting into 45 Street.

Downtown Revitalization and High Load Corridor (50 Avenue)

The downtown revitalization plan was reviewed in relation to TEC's requirements for a high load corridor. Minimum criteria needed to align with TEC's high-load corridor requirements were identified and used as a baseline in developing alternative cross-section options tailored to the corridor's operational needs. These cross-section options represent generalized conditions. The following is recommended:

- Conduct a downtown revitalization design study to determine develop detailed cross-section plans for the corridor. This study should be done in collaboration with TEC to ensure that the options developed meet their requirements.

Active Transportation Network Improvements

The existing sidewalks and trails were reviewed with the current standards and accessibility requirements. Recommended active modes network improvements focus on enhancing pedestrian and cyclist connectivity within the community. Key improvements include:

- Complete missing sidewalk connections along existing urban (both sides) and rural (one side) roadways over time as roadways are upgraded or through a separate program to build missing connections.
- Add active transportation connections along rural roads connected to industrial areas
- Add off-street trail or sidewalk between the town and the east and south industrial areas as development expands or within Highway right of way.
- Add off-street trail or upgrade existing sidewalk to a trail along the following segments:
 - 51 Street from 50 Avenue to 47 Avenue
 - 44 Avenue from 50 Street to West Limits
 - 49 Street/ 47 Avenue
 - 47 Avenue and 44 Avenue
 - 52 Street to 50 Street
- Acquire remaining ROW needed to create a trail connection from Spruceview Crescent to 50 Avenue.
- Plan for future trail connections between 50 Street to 45 Street as development expands.

50 Avenue Pedestrian Crossings

The existing and required future pedestrian crossing controls on 50 Avenue were assessed, resulting in the following recommendations:

- **Short Term (0-10 Years):** Conduct a pedestrian safety review at 51 Avenue to determine whether the crossing merits an upgrade to an Overhead Flashing signal in the short term due to higher use by school aged children.
- **Long Term (10- 20 Years):** Upgrade 50 Avenue crossings at Westview Drive, 52 Street, and 51 Street to an Overhead Flashing signal.

The timing of pedestrian crossing control upgrades depends on the timing of development. The implications for pedestrian crossings should be assessed when major developments are proposed.

Site Specific Reviews

Site specific reviews were conducted to address specific resident concerns, with the following recommended:

- **50 Street and 51 Avenue Intersection:** review lighting conditions to improve pedestrian safety during winter months.
- **51 Avenue and 51 Street:** maintain existing configuration.
- **49 Avenue between Southbridge Crescent & 52 Street:** upgrade to Town's current roadway standard.

Supplementary Studies

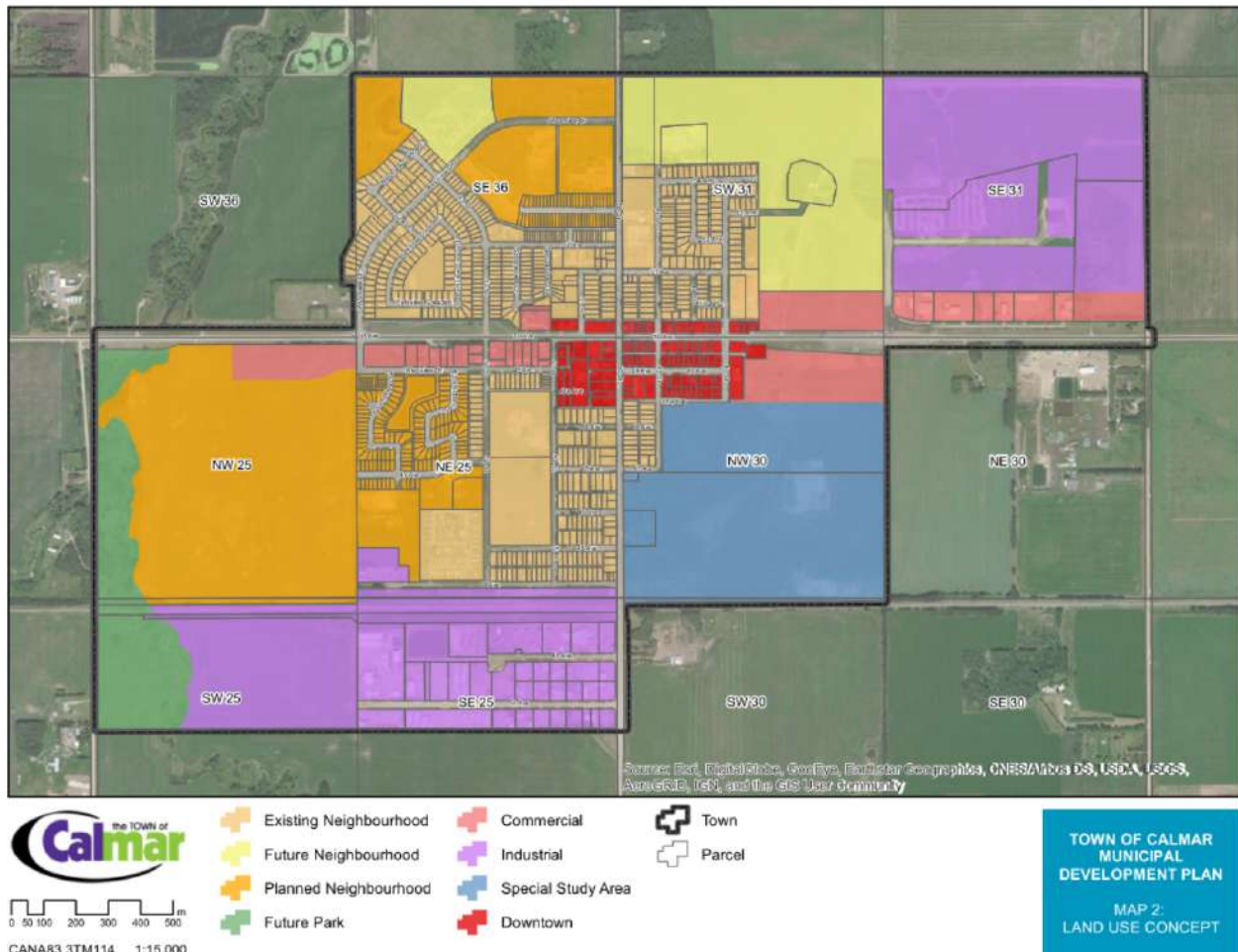
The following studies are recommended to be completed in the short term (0-10 years) to enable the Town to effectively plan for future infrastructure costs. The studies include:

- **Detailed Implementation Plan** – A supplementary study in collaboration with TEC to approve the travel demands, design volumes, and design criteria for roadway improvements.
- **50 Avenue Corridor Plan** – Functional study of 50 Avenue including detailed cross-sections, traffic controls, required ROW, 45 Street roundabout design, cost estimates, and 50 Avenue downtown revitalization implementation. Collaboration with TEC is critical to ensuring proposed plans can be constructed.
- **50 Avenue and 51 Street (North) Crosswalk Safety Assessment** – Determine whether an upgrade to overhead flashing signals is needed in the short term.
- **Active Modes Accessibility Study** – Assess the accessibility of the current trail and sidewalk the identify and prioritize improvements.
- **Off 50-Avenue Downtown Parking Review (optional)** – Assess opportunities for parking locations off 50 Avenue.
- **Transportation Master Plan Update** – The Transportation Master Plan should be updated every 5-10 years based on expected growth.



APPENDIX
Relevant Land Use Plans

A



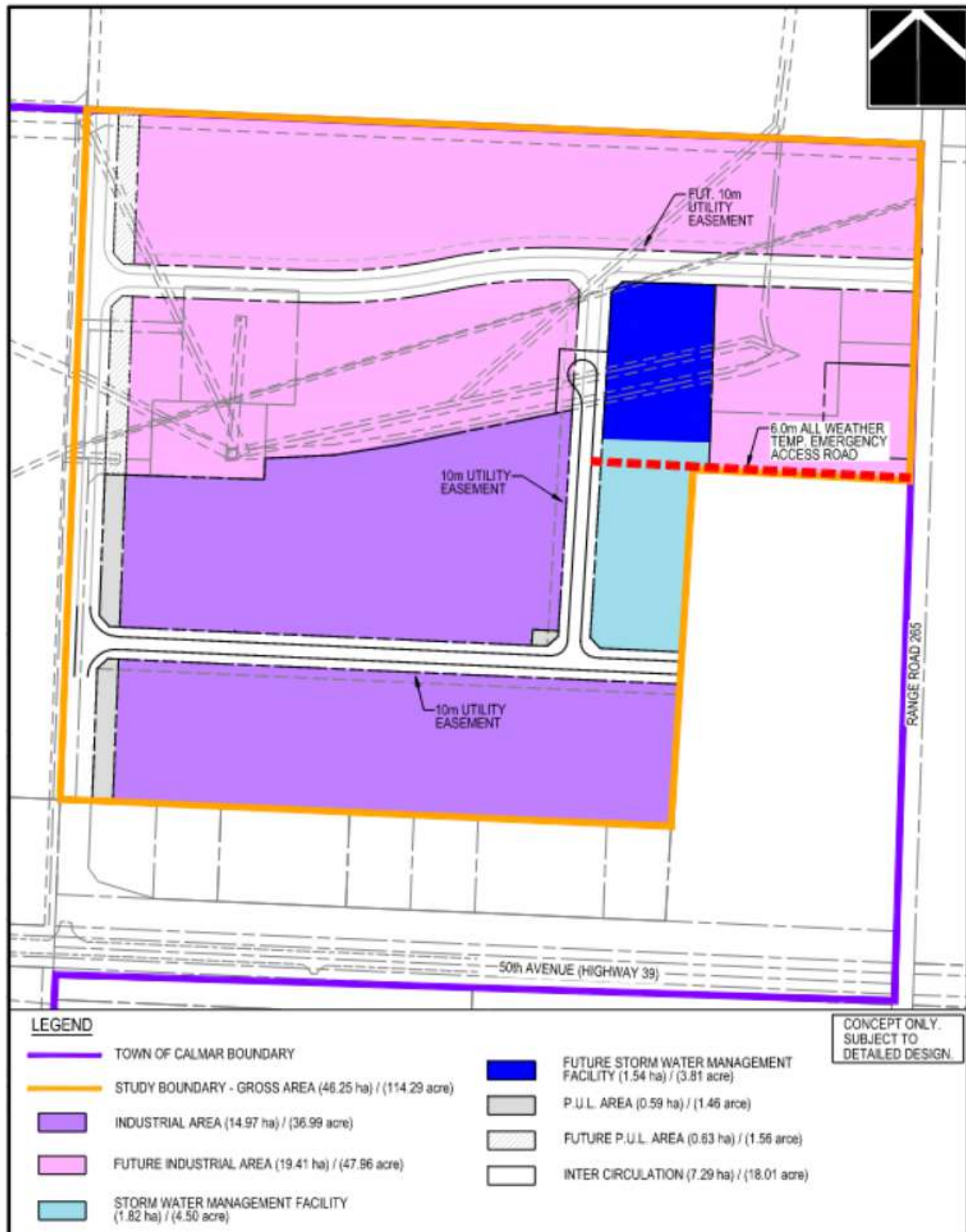


i. Thomas Creek ASP Land Use Concept



ii. Southbridge ASP Land Use Concept





v. Calmar Industrial (Hi-Way 39 Industrial Park) ASP Land Use Concept



APPENDIX
Traffic Count Data

B

TMP Counts Adjustment to 100th Highest Hour

Steps

1

Date: May 2, 2024
 ATR Number: 50391010
 Location Description: 3.2 KM W 2 & 39 LEDUC
 Hour Ending
 Count

	8	9	10	11	12	13	14	15	16	17	18	19	Total
	695	648	582	562	645	650	631	633	824	909	916	534	8229

Current Year AADT 8420

2

ATR AADT Factor 1.02

3

ISL Counts

Time		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total
Total Volume	50 Ave and 45 St	46	3056	0	0	3293	69	0	0	0	58	0	60	6582
Total Volume	50 Ave and 49 St	84	2929	42	77	3052	97	54	14	102	132	9	102	6694
Total Volume	50 Ave and 51 St	0	2386	9	59	2382	0	26	0	95	0	0	0	4957
Total Volume	50 Ave and 52 St	17	2023	3	190	1955	303	3	11	208	275	17	20	5025
Total Volume	50 Ave and Westview Dr	14	1832	25	60	1791	125	16	10	58	132	8	15	4086
Total Volume	50 St and 44 Ave	101	0	25	0	0	0	16	730	0	0	818	100	1790
Total Volume	50 St and 42 Ave	114	0	32	0	0	0	33	881	0	0	936	131	2127
AM Peak	50 Ave and 45 St	8	362	0	0	169	6	0	0	0	1	0	2	548
AM Peak	50 Ave and 49 St	1	320	1	6	151	8	0	0	11	5	0	0	503
AM Peak	50 Ave and 51 St	0	272	0	2	132	0	0	0	8	0	0	0	414
AM Peak	50 Ave and 52 St	1	242	1	3	126	3	0	0	33	42	0	2	453
AM Peak	50 Ave and Westview Dr	1	206	1	1	125	1	1	0	9	27	0	2	374
AM Peak	50 St and 44 Ave	9	0	1	0	0	0	3	82	0	0	50	19	164
AM Peak	50 St and 42 Ave	8	0	4	0	0	0	3	94	0	0	71	6	186
PM Peak	50 Ave and 45 St	5	263	0	0	485	5	0	0	0	16	0	13	787
PM Peak	50 Ave and 49 St	7	222	3	3	450	11	10	1	15	11	0	11	744
PM Peak	50 Ave and 51 St	0	184	2	12	358	0	3	0	9	0	0	0	568
PM Peak	50 Ave and 52 St	1	155	0	35	308	63	0	0	16	18	5	2	603
PM Peak	50 Ave and Westview Dr	1	142	6	14	264	27	0	1	6	5	0	2	468
PM Peak	50 St and 44 Ave	14	0	3	0	0	0	0	72	0	0	99	9	197
PM Peak	50 St and 42 Ave	9	0	5	0	0	0	5	110	0	0	104	9	242

Total Volume Count Data x ATR AADT Factor

Time		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total
Total Volume	50 Ave and 45 St	47	3127	0	0	3369	71	0	0	0	59	0	61	6734
Total Volume	50 Ave and 49 St	86	2997	43	79	3123	99	55	14	104	135	9	104	6848
Total Volume	50 Ave and 51 St	0	2441	9	60	2437	0	27	0	97	0	0	0	5071
Total Volume	50 Ave and 52 St	17	2070	3	194	2000	310	3	11	213	281	17	20	5139
Total Volume	50 Ave and Westview Dr	14	1875	26	61	1833	128	16	10	59	135	8	15	4180
Total Volume	50 St and 44 Ave	103	0	26	0	0	0	16	747	0	0	837	102	1831
Total Volume	50 St and 42 Ave	117	0	33	0	0	0	34	901	0	0	958	134	2177

Adjustments		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total
	50 Ave and 45 St	54	3248	0	0	3248	65	0	0	0	65	0	54	6734
	50 Ave and 49 St	95	3060	49	92	3060	117	49	12	92	117	12	95	6850
	50 Ave and 51 St	0	2439	18	79	2439	0	18	0	79	0	0	0	5072
	50 Ave and 52 St	19	2035	3	204	2035	296	3	14	204	296	14	19	5142
	50 Ave and Westview Dr	15	1854	21	60	1854	132	21	9	60	132	9	15	4182
	50 St and 44 Ave	103	0	21	0	0	0	21	792	0	0	792	103	1832
	50 St and 42 Ave	126	0	34	0	0	0	34	930	0	0	930	126	2180

Balanced

Time		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Total
Total Volume	50 Ave and 45 St	54	3248	0	0	3248	65	0	0	0	65	0	54	6734
Total Volume	50 Ave and 49 St	95	3060	49	92	3060	117	49	12	92	117	12	95	6850
Total Volume	50 Ave and 51 St	0	2439	18	79	2439	0	18	0	79	0	0	0	5072
Total Volume	50 Ave and 52 St	19	2035	3	204	2035	296	3	14	204	296	14	19	5142
Total Volume	50 Ave and Westview Dr	15	1854	21	60	1854	132	21	9	60	132	9	15	4182
Total Volume	50 St and 44 Ave	103	0	21	0	0	0	21	792	0	0	792	103	1832
Total Volume	50 St and 42 Ave	126	0	34	0	0	0	34	930	0	0	930	126	2180

5 (K factor)

100th Highest Hour Volume	916
K Factor	0.109

6

Total Traffic Through Intersection

50 Ave and 45 St	6734
50 Ave and 49 St	6848
50 Ave and 51 St	5071
50 Ave and 52 St	5139
50 Ave and Westview Dr	4180
50 St and 44 Ave	1831
50 St and 42 Ave	2177

7

100th highest hour Intersection Volume

50 Ave and 45 St	733
50 Ave and 49 St	745
50 Ave and 51 St	552
50 Ave and 52 St	559
50 Ave and Westview Dr	455
50 St and 44 Ave	199
50 St and 42 Ave	237

9

AM 100th Hour Count Factor

50 Ave and 45 St	1.34
50 Ave and 49 St	1.48
50 Ave and 51 St	1.33
50 Ave and 52 St	1.23
50 Ave and Westview Dr	1.22
50 St and 44 Ave	1.21
50 St and 42 Ave	1.27

PM 100th Hour Count Factor

50 Ave and 45 St	0.93
50 Ave and 49 St	1.00
50 Ave and 51 St	0.97
50 Ave and 52 St	0.93
50 Ave and Westview Dr	0.97
50 St and 44 Ave	1.01
50 St and 42 Ave	0.98

10

Factored 100th Hour AM

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50 Ave and 45 St	11	484	0	0	226	8	0	0	0	1	0	3
50 Ave and 49 St	1	474	1	9	224	12	0	0	16	7	0	0
50 Ave and 51 St	0	363	0	3	176	0	0	0	11	0	0	0
50 Ave and 52 St	1	299	1	4	155	4	0	0	41	52	0	2
50 Ave and Westview Dr	1	251	1	1	152	1	1	0	11	33	0	2
50 St and 44 Ave	11	0	1	0	0	0	4	100	0	0	61	23
50 St and 42 Ave	10	0	5	0	0	0	4	120	0	0	90	8

Factored 100th Hour PM

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
50 Ave and 45 St	5	245	0	0	452	5	0	0	0	15	0	12
50 Ave and 49 St	7	222	3	3	451	11	10	1	15	11	0	11
50 Ave and 51 St	0	179	2	12	348	0	3	0	9	0	0	0
50 Ave and 52 St	1	144	0	32	286	58	0	0	15	17	5	2
50 Ave and Westview Dr	1	138	6	14	257	26	0	1	6	5	0	2
50 St and 44 Ave	14	0	3	0	0	0	0	73	0	0	100	9
50 St and 42 Ave	9	0	5	0	0	0	5	108	0	0	102	9

Reference Number:
990213

Intersection of:
39 & 795 AT CALMAR

North On: 50 ST	Vehicle Type		Volume	%
	A: Passenger Vehicle		680	97.1%
	B: Recreational Vehicle		1	0.1%
	C: Bus		0	0.0%
	D: Single Unit Truck		18	2.6%
	E: Tractor Trailer Unit		1	0.1%
	AADT		700	
ASDT		760		

2024 AADT / ASDT Estimates

Leg AADT Volumes		
6,920	700	8,440
Total Entering Volume: 9,370		

From North			
350			
	Right	Thru	Left
	70	70	210
A	68	69	203
B	0	0	0
C	0	0	0
D	2	1	6
E	0	0	1

To North			
350			
	Right	Thru	Left
A			
B			
C			
D			
E			

To West			
3,420			
	Right	Thru	Left
A			
B			
C			
D			
E			

West On: 39	Volume			%
	A	6,284	90.8%	
	B	64	0.9%	
	C	5	0.1%	
	D	194	2.8%	
	E	373	5.4%	
AADT				6,920
ASDT				7,570

From West			
3,500			
	Left	Thru	Right
A	60	3,090	350
B	57	2,800	325
C	0	26	5
D	0	2	0
E	3	83	14
F	0	179	6

From East			
4,220			
	Left	Thru	Right
A	913	2,751	213
B	5	33	1
C	0	3	0
D	25	76	6
E	17	177	0

Vehicle Type		
A	7,755	91.9%
B	69	0.8%
C	8	0.1%
D	222	2.6%
E	386	4.6%
AADT	8,440	
ASDT	9,220	

To East			
4,220			
	Left	Thru	Right
A			
B			
C			
D			
E			

To South			
1,380			
	Right	Thru	Left
A			
B			
C			
D			
E			

From South			
1,300			
	Left	Thru	Right
A	310	70	920
B	283	70	875
C	0	0	4
D	0	0	3
E	16	0	26
F	11	0	12

South On: 795	Vehicle Type	Volume	%
	A: Passenger Vehicle	2,535	94.6%
	B: Recreational Vehicle	14	0.5%
	C: Bus	3	0.1%
	D: Single Unit Truck	82	3.1%
	E: Tractor Trailer Unit	46	1.7%
	AADT	2,680	
	ASDT	2,940	

ABBREVIATIONS:

AADT: Annual Average Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from January 1 to December 31 (inclusive), 365 days.

ASDT: Average Summer Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from May 1 to September 30 (inclusive), 153 days.

NOTE:

Coloured line thickness corresponds to turning movement volume.

Reference Number:

990213

Intersection of:

39 & 795 AT CALMAR

Vehicle Type	Volume	%
A: Passenger Vehicle	31	100.0%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	0	0.0%
E: Tractor Trailer Unit	0	0.0%

AM 31

From North		
	Right	Thru
	0	6
A	0	6
B	0	0
C	0	0
D	0	0
E	0	0

To North		
	Left	Thru
	0	12
A	0	12
B	0	0
C	0	0
D	0	0
E	0	0

2024 AM 100th Highest Hour Estimates

Leg AM Volumes		
848	31	946
Total Entering Volume: 997		

To West		
	Left	Thru
	221	6
A	221	6
B	0	0
C	0	0
D	26	0
E	6	0

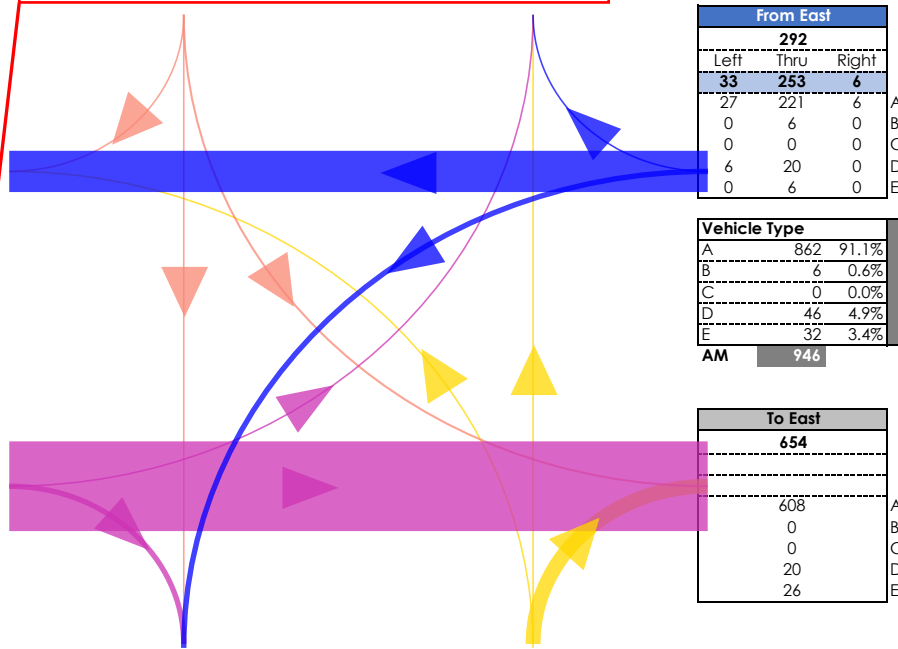
Vehicle Type	Volume	%
A: Passenger Vehicle	751	88.6%
B: Recreational Vehicle	6	0.7%
C: Bus	0	0.0%
D: Single Unit Truck	59	7.0%
E: Tractor Trailer Unit	32	3.8%

From West		
	Left	Thru
	6	550
A	6	504
B	0	0
C	0	0
D	0	20
E	0	26

From East		
	Left	Thru
	33	253
A	27	221
B	0	6
C	0	0
D	6	20
E	0	6

Vehicle Type	Volume	%
A: Passenger Vehicle	862	91.1%
B: Recreational Vehicle	6	0.6%
C: Bus	0	0.0%
D: Single Unit Truck	46	4.9%
E: Tractor Trailer Unit	32	3.4%

To East		
	Left	Thru
	608	0
A	608	0
B	0	0
C	0	0
D	20	0
E	26	0



To South		
	Left	Thru
	53	0
A	53	0
B	0	0
C	0	0
D	19	0
E	0	0

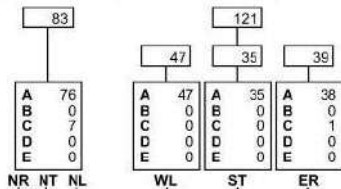
From South		
	Left	Thru
	6	0
A	0	0
B	0	0
C	0	0
D	6	0
E	0	0

Vehicle Type	Volume	%
A: Passenger Vehicle	144	85.2%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	25	14.8%
E: Tractor Trailer Unit	0	0.0%

AM 169

Turning Movement Summary Diagram

North On 50 St		
Vehicle Type	Vol	%
A: Passenger Vehicle	196	96.1
B: Recreational Vehicle	0	0.0
C: Bus	8	3.9
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	204	



NOTE:
Coloured line thickness
corresponds to turning
movement volume.

Significant difference in traffic volumes on 50 Street north leg between the 2025 TEC data and 2021 TEC data. The raw counts used to derive the 2025 data was completed in august 2021 (school out of session) whereas the raw count for the 2021 data was completed on June 6 (school still in session)

Reference Number:
990213

Intersection of:
39 & 795 AT CALMAR

North On: 50 ST	Vehicle Type	Volume	%
	A: Passenger Vehicle	84	100.0%
	B: Recreational Vehicle	0	0.0%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	0	0.0%
		PM	84

From North			
	Right	Thru	Left
	16	7	7
A	16	7	7
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

To North		
	Right	Thru
	54	
A	54	
B	0	
C	0	
D	0	
E	0	

2024 PM 100th Highest Hour Estimates

Leg PM Volumes		
84		
768		863
	275	
Total Entering Volume: 995		

To West		
	Right	Thru
	433	
A	7	
B	0	
C	7	
D	11	
E		

West On: 39	Volume	%
	A	711 92.6%
	B	7 0.9%
	C	0 0.0%
	D	23 3.0%
	E	27 3.5%
		PM 768

From West			
	Left	Thru	Right
	23	241	46
A	23	209	46
B	0	0	0
C	0	0	0
D	0	16	0
E	0	16	0

From East			
	Left	Thru	Right
	97	406	27
A	97	385	27
B	0	7	0
C	0	0	0
D	0	7	0
E	0	7	0

East On: 39	Vehicle Type	Volume	%
	A	810	93.9%
	B	7	0.8%
	C	0	0.0%
	D	23	2.7%
	E	23	2.7%
		PM 863	

To East		
	Right	Thru
	301	
A	0	
B	0	
C	16	
D	16	
E		

To South		
	Right	Thru
	150	
A	0	
B	0	
C	0	
D	0	
E	0	

From South			
	Left	Thru	Right
	36	4	85
A	32	4	85
B	0	0	0
C	0	0	0
D	0	0	0
E	4	0	0

South On: 795	Vehicle Type	Volume	%
	A: Passenger Vehicle	271	98.5%
	B: Recreational Vehicle	0	0.0%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	4	1.5%
		PM	275

NOTE:
Coloured line thickness
corresponds to turning
movement volume.

Reference No.: 990213

Intersection of:
39 & 795 AT CALMAR

2021 AADT / ASDT ESTIMATES

Turning Movement Summary Diagram

North On 50 St		
Vehicle Type	Vol	%
A: Passenger Vehicle	817	96.1
B: Recreational Vehicle	2	0.2
C: Bus	20	2.4
D: Single Unit Truck	10	1.2
E: Tractor Trailer Unit	1	0.1
ASDT	950	AADT 850

West On 39		
Vehicle Type	Vol	%
A: Passenger Vehicle	5718	90.8
B: Recreational Vehicle	66	1.0
C: Bus	33	0.5
D: Single Unit Truck	163	2.6
E: Tractor Trailer Unit	320	5.1
ASDT	7050	AADT 6300

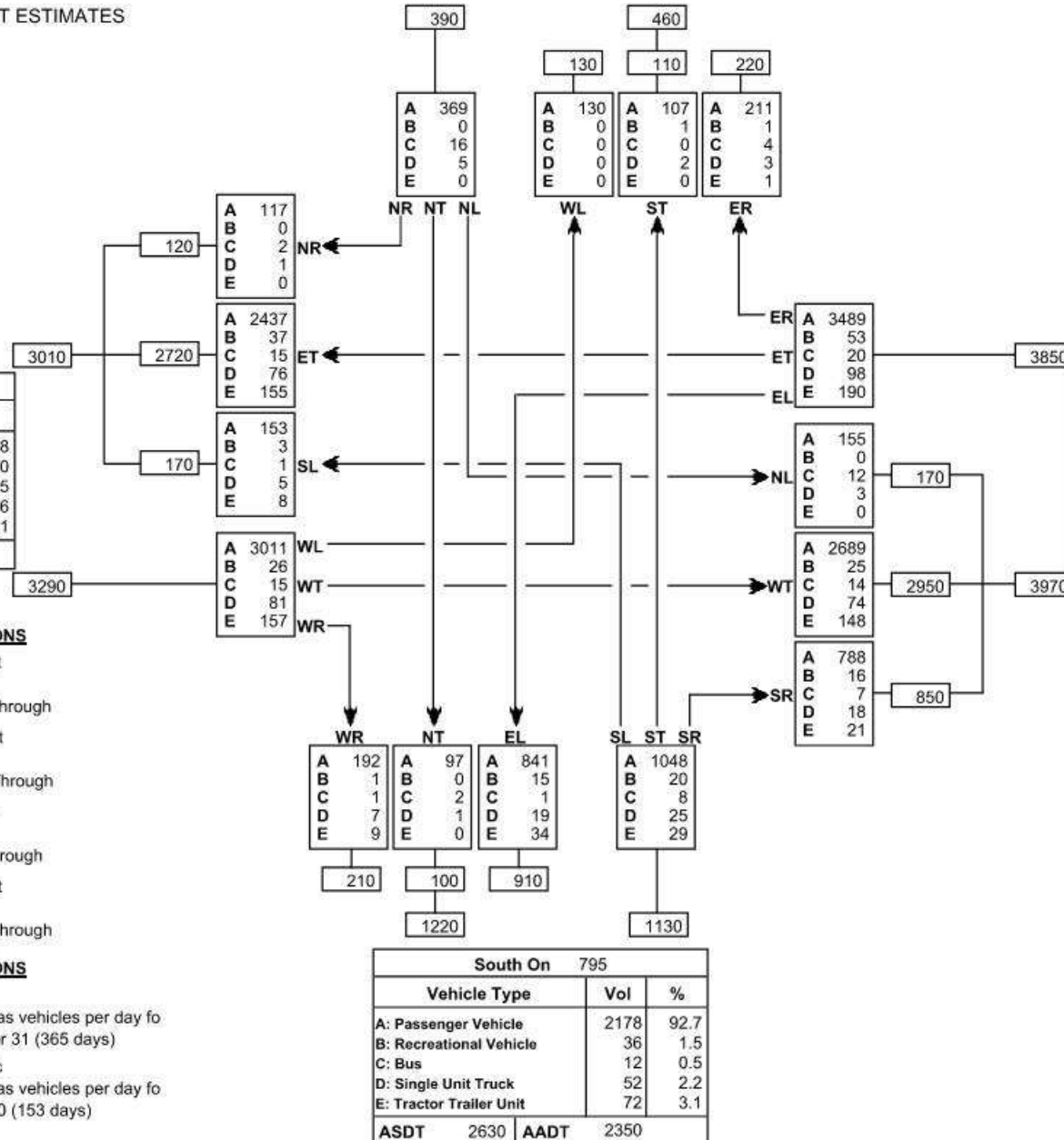
East On 39		
Vehicle Type	Vol	%
A: Passenger Vehicle	7121	91.1
B: Recreational Vehicle	94	1.2
C: Bus	53	0.7
D: Single Unit Truck	193	2.5
E: Tractor Trailer Unit	359	4.6
ASDT	8750	AADT 7820

TURNING MOVEMENT ABBREVIATIONS

NR: Traffic From North Turning Right
 NL: Traffic From North Turning Left
 NT: Traffic From North Proceeding Through
 SR: Traffic From South Turning Right
 SL: Traffic From South Turning Left
 ST: Traffic From South Proceeding Through
 ER: Traffic From East Turning Right
 EL: Traffic From East Turning Left
 ET: Traffic From East Proceeding Through
 WR: Traffic From West Turning Right
 WL: Traffic From West Turning Left
 WT: Traffic From West Proceeding Through

TURNING MOVEMENT ABBREVIATIONS

AADT: Annual Average Daily Traffic
 Average daily traffic expressed as vehicles per day for period of January 1 to December 31 (365 days)
 ASDT: Average Summer Daily Traffic
 Average daily traffic expressed as vehicles per day for period of May 1 to September 30 (153 days)



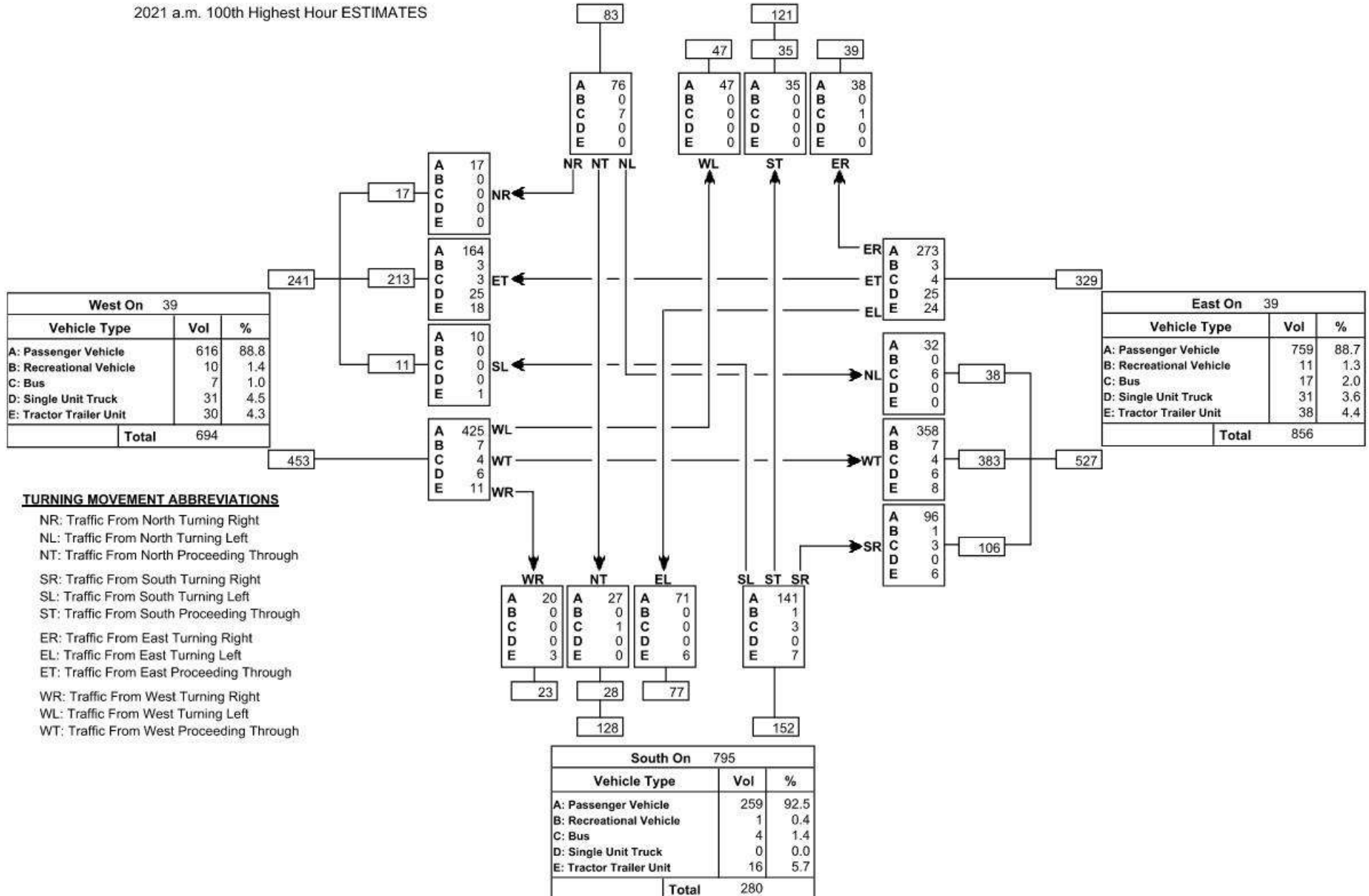
Reference No.: 990213

Intersection of:
39 & 795 AT CALMAR

2021 a.m. 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram

North On 50 St		
Vehicle Type	Vol	%
A: Passenger Vehicle	196	96.1
B: Recreational Vehicle	0	0.0
C: Bus	8	3.9
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	204	



Reference No.: 990213

Intersection of:
39 & 795 AT CALMAR

2021 p.m. 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram

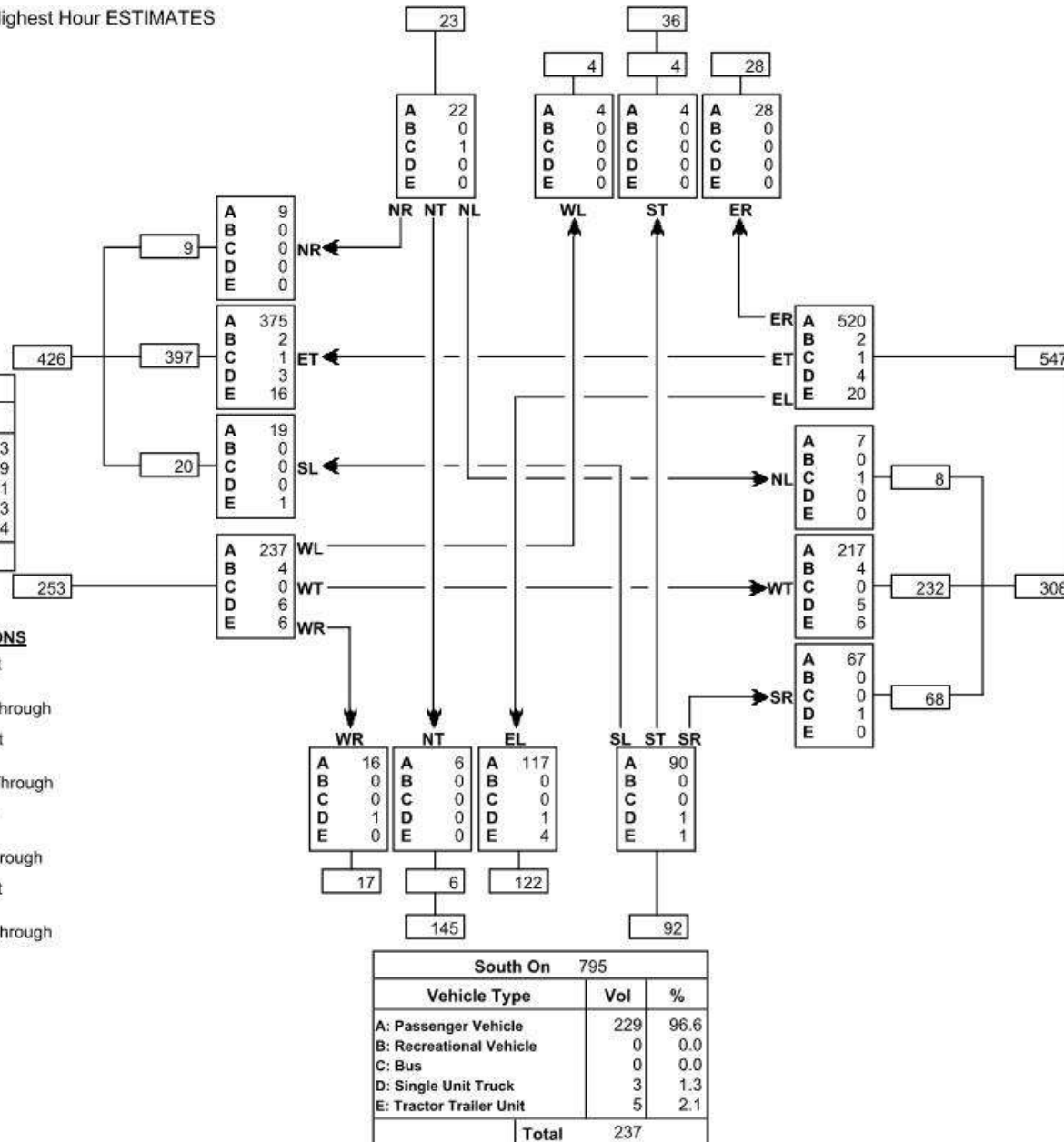
North On 50 St		
Vehicle Type	Vol	%
A: Passenger Vehicle	58	98.3
B: Recreational Vehicle	0	0.0
C: Bus	1	1.7
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	59	

West On 39		
Vehicle Type	Vol	%
A: Passenger Vehicle	640	94.3
B: Recreational Vehicle	6	0.9
C: Bus	1	0.1
D: Single Unit Truck	9	1.3
E: Tractor Trailer Unit	23	3.4
Total	679	

East On 39		
Vehicle Type	Vol	%
A: Passenger Vehicle	811	94.9
B: Recreational Vehicle	6	0.7
C: Bus	2	0.2
D: Single Unit Truck	10	1.2
E: Tractor Trailer Unit	26	3.0
Total	855	

TURNING MOVEMENT ABBREVIATIONS

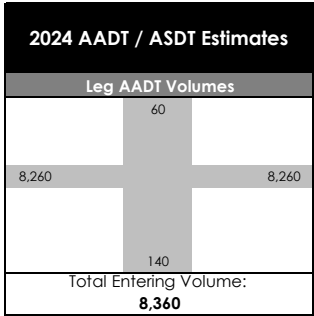
NR: Traffic From North Turning Right
 NL: Traffic From North Turning Left
 NT: Traffic From North Proceeding Through
 SR: Traffic From South Turning Right
 SL: Traffic From South Turning Left
 ST: Traffic From South Proceeding Through
 ER: Traffic From East Turning Right
 EL: Traffic From East Turning Left
 ET: Traffic From East Proceeding Through
 WR: Traffic From West Turning Right
 WL: Traffic From West Turning Left
 WT: Traffic From West Proceeding Through



Reference Number:
84460

Intersection of:
39 & RGE RD 265 LEDUC

Vehicle Type	Volume	%
A: Passenger Vehicle	55	91.7%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	2	3.3%
E: Tractor Trailer Unit	3	5.0%
AADT	60	
ASDT	80	



From North
40
Right Thru Left
20 10 10
A 20 8 9
B 0 0 0
C 0 0 0
D 0 1 0
E 0 1 1

To North
20
Right Thru Left
A 18
B 0
C 0
D 1
E 1

To West
4,230
Right Thru Left
A 4,008
B 10
C 11
D 86
E 115

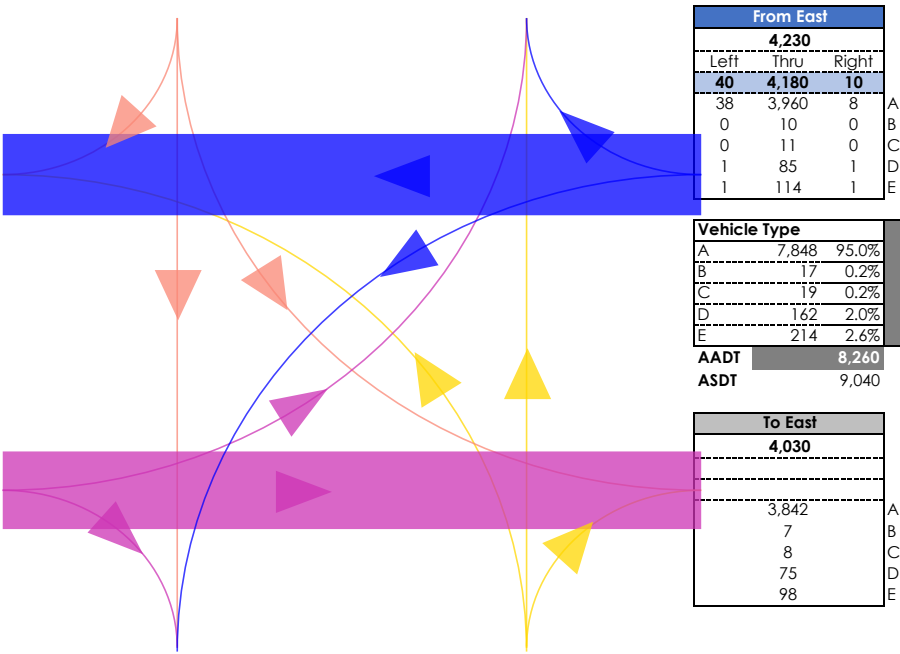
West On: 39	Volume	%
A	7,856	95.1%
B	17	0.2%
C	19	0.2%
D	159	1.9%
E	209	2.5%
AADT	8,260	
ASDT	9,040	

From West
4,030
Left Thru Right
10 3,990 30
A 10 3,809 29
B 0 7 0
C 0 8 0
D 0 73 0
E 0 93 1

From East
4,230
Left Thru Right
40 4,180 10
A 38 3,960 8
B 0 10 0
C 0 11 0
D 1 85 1
E 1 114 1

Vehicle Type	Volume	%
A	7,848	95.0%
B	17	0.2%
C	19	0.2%
D	162	2.0%
E	214	2.6%
AADT	8,260	
ASDT	9,040	

To East
4,030
Left Thru Right
A 3,842
B 7
C 8
D 75
E 98



To South
80
Right Thru Left
A 75
B 0
C 0
D 2
E 3

From South
60
Left Thru Right
30 0 30
A 28 0 24
B 0 0 0
C 0 0 0
D 1 0 2
E 1 0 4

ABBREVIATIONS:

AADT: Annual Average Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from January 1 to December 31 (inclusive), 365 days.

ASDT: Average Summer Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from May 1 to September 30 (inclusive), 153 days.

Vehicle Type	Volume	%
A: Passenger Vehicle	127	90.7%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	5	3.6%
E: Tractor Trailer Unit	8	5.7%
AADT	140	
ASDT	160	

NOTE:
Coloured line thickness corresponds to turning movement volume.

Reference Number:
84460
Intersection of:
39 & RGE RD 265 LEDUC

North On: RGE RD 265	Vehicle Type	Volume	%
	A: Passenger Vehicle	0	-
	B: Recreational Vehicle	0	-
	C: Bus	0	-
	D: Single Unit Truck	0	-
	E: Tractor Trailer Unit	0	-
		AM	0

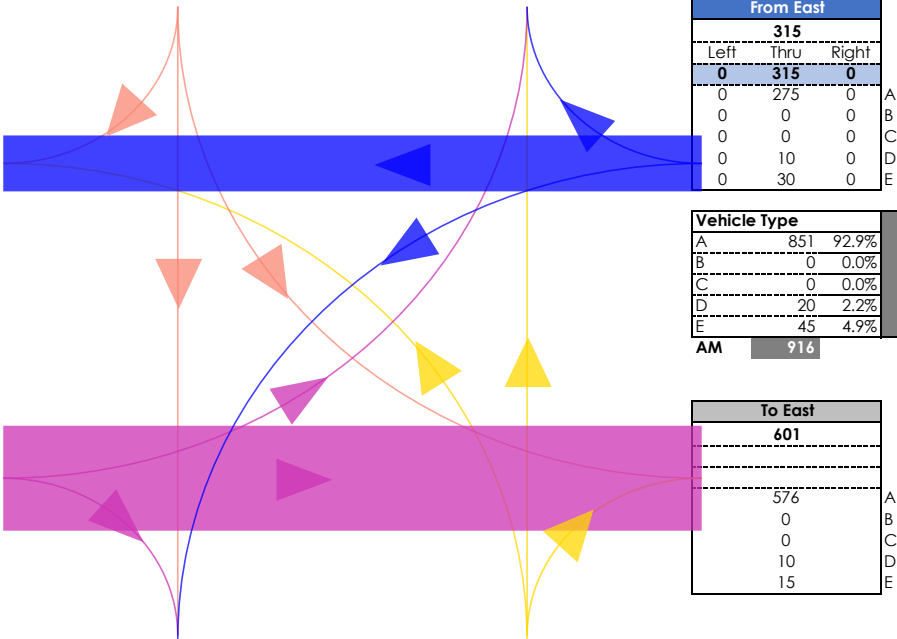
2024 AM 100th Highest Hour Estimates		
Leg AM Volumes		
	0	
906		916
	10	
Total Entering Volume: 916		

From North			
	0		
	Right	Thru	Left
	0	0	0
A	0	0	0
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

To North			
	0		
A	0		
B	0		
C	0		
D	0		
E	0		

To West			
	315		
	275		
A	0		
B	0		
C	10		
D	30		
E			

West On: 39	Volume	%
	A 846	93.4%
	B 0	0.0%
	C 0	0.0%
	D 20	2.2%
	E 40	4.4%
		AM 906



From East			
315			
Left	Thru	Right	
0	315	0	A
0	275	0	B
0	0	0	C
0	0	0	D
0	10	0	E
0	30	0	

Vehicle Type			East On: 39
A	851	92.9%	
B	0	0.0%	
C	0	0.0%	
D	20	2.2%	
E	45	4.9%	
AM	916		

From West			
	591		
	Left	Thru	Right
	0	591	0
A	0	571	0
B	0	0	0
C	0	0	0
D	0	10	0
E	0	10	0

To East			
	601		
	576		
A	0		
B	0		
C	10		
D	15		
E			

To South			
	0		
A	0		
B	0		
C	0		
D	0		
E	0		

From South			
	10		
	Left	Thru	Right
	0	0	10
A	0	0	5
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	5

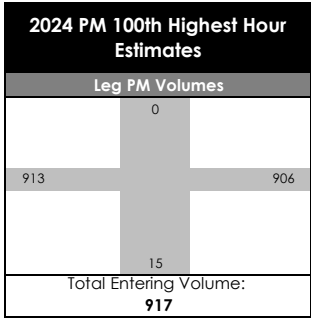
South On: RGE RD 265	Vehicle Type	Volume	%
	A: Passenger Vehicle	5	50.0%
	B: Recreational Vehicle	0	0.0%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	5	50.0%
AM		10	

NOTE:
Coloured line thickness corresponds to turning movement volume.

Reference Number:
84460

Intersection of:
39 & RGE RD 265 LEDUC

North On: RGE RD 265	Vehicle Type	Volume	%
	A: Passenger Vehicle	0	-
	B: Recreational Vehicle	0	-
	C: Bus	0	-
	D: Single Unit Truck	0	-
	E: Tractor Trailer Unit	0	-
		PM	0



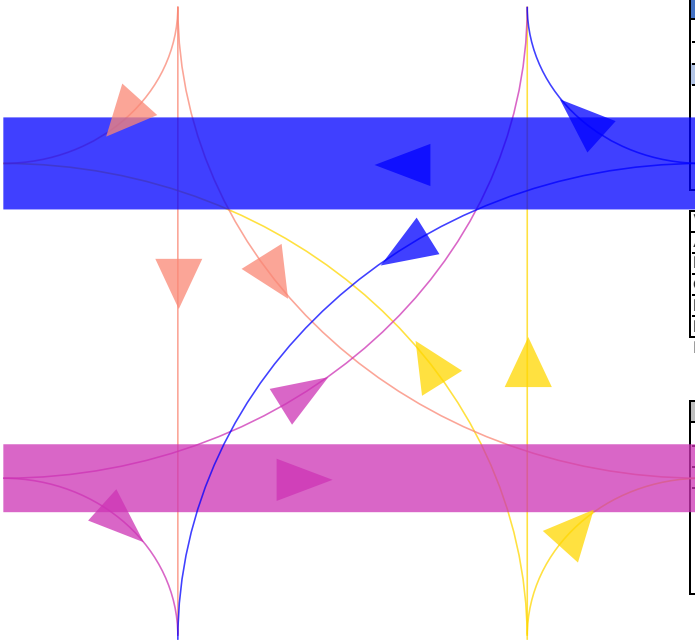
From North			
0			
	Right	Thru	Left
A	0	0	0
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

To North			
0			
	Right	Thru	Left
A	0	0	0
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

To West			
526			
	Right	Thru	Left
A	0	0	518
B	0	0	0
C	0	0	4
D	0	0	4
E	0	0	0

West On: 39	Volume	%
	A	894 97.9%
	B	0 0.0%
	C	4 0.4%
	D	11 1.2%
	E	4 0.4%
		PM 913

From West			
387			
	Left	Thru	Right
A	0	372	4
B	0	0	0
C	0	0	0
D	0	7	0
E	0	4	0



From East			
519			
	Left	Thru	Right
A	0	511	0
B	0	0	0
C	0	4	0
D	0	4	0
E	0	0	0

East On: 39	Vehicle Type	Volume	%
	A	887	97.9%
	B	0	0.0%
	C	4	0.4%
	D	11	1.2%
	E	4	0.4%
		PM 906	

To East			
387			
	Left	Thru	Right
A	0	376	4
B	0	0	0
C	0	0	0
D	0	7	0
E	0	4	0

To South			
4			
	Right	Thru	Left
A	0	0	4
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

From South			
11			
	Left	Thru	Right
A	7	0	4
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

South On: RGE RD 265	Vehicle Type	Volume	%
	A: Passenger Vehicle	15	100.0%
	B: Recreational Vehicle	0	0.0%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	0	0.0%
		PM	15

NOTE:
Coloured line thickness
corresponds to turning
movement volume.

Reference Number:
997164

Intersection of:
39 & 47 ST IN CALMAR 30-49-26-
411500000

North On: 47 St	Vehicle Type	Volume	%
	A: Passenger Vehicle	838	95.2%
	B: Recreational Vehicle	6	0.7%
	C: Bus	0	0.0%
	D: Single Unit Truck	34	3.9%
	E: Tractor Trailer Unit	2	0.2%
	AADT	880	
	ASDT	980	

2024 AADT / ASDT Estimates		
Leg AADT Volumes		
8,450	880	8,190
	1,140	
Total Entering Volume: 9,330		

From North			
410			
	Right	Thru	Left
	180	50	180
A	169	46	175
B	0	1	1
C	0	0	0
D	11	2	4
E	0	1	0

To North	
470	
A	448
B	4
C	0
D	17
E	1

To West	
4,210	
A	3,793
B	92
C	0
D	137
E	188

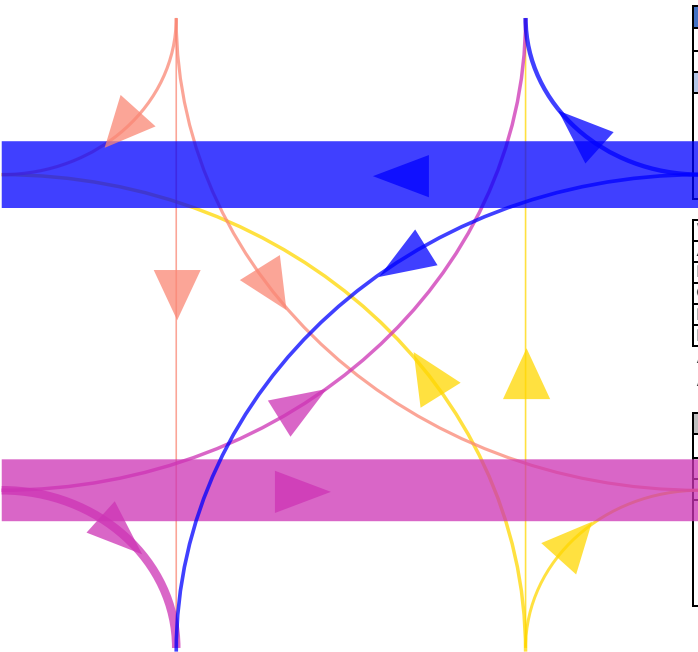
West On: 39	Volume	%
A	7,677	90.9%
B	149	1.8%
C	1	0.0%
D	250	3.0%
E	373	4.4%
AADT	8,450	
ASDT	9,580	

From West			
4,240			
	Left	Thru	Right
	200	3,550	490
A	191	3,209	484
B	2	54	1
C	0	1	0
D	6	107	0
E	1	179	5

From East			
4,290			
	Left	Thru	Right
	210	3,830	250
A	201	3,431	239
B	4	88	1
C	0	0	0
D	0	125	10
E	5	186	0

East On: 39	Vehicle Type	Volume	%
	A: Passenger Vehicle	7,414	90.5%
	B: Recreational Vehicle	152	1.9%
	C: Bus	1	0.0%
	D: Single Unit Truck	247	3.0%
	E: Tractor Trailer Unit	376	4.6%
AADT	8,190		
ASDT	9,210		

To East	
3,900	
A	3,543
B	59
C	1
D	112
E	185



To South	
750	
A	731
B	6
C	0
D	2
E	11

From South			
390			
	Left	Thru	Right
	200	20	170
A	193	18	159
B	4	1	4
C	0	0	0
D	1	1	1
E	2	0	6

South On: 47 St	Vehicle Type	Volume	%
	A: Passenger Vehicle	1,101	96.6%
	B: Recreational Vehicle	15	1.3%
	C: Bus	0	0.0%
	D: Single Unit Truck	5	0.4%
	E: Tractor Trailer Unit	19	1.7%
AADT	1,140		
ASDT	1,260		

ABBREVIATIONS:

AADT: Annual Average Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from January 1 to December 31 (inclusive), 365 days.

ASDT: Average Summer Daily Traffic.
Average daily traffic expressed as vehicles per day for the period from May 1 to September 30 (inclusive), 153 days.

NOTE:
Coloured line thickness corresponds to turning movement volume.

Reference Number:

997164

Intersection of:

39 & 47 ST IN CALMAR 30-49-26-
411500000

North On: 47 St

Vehicle Type	Volume	%
A: Passenger Vehicle	100	91.7%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	7	6.4%
E: Tractor Trailer Unit	2	1.8%

AM 109

From North

	Right	Thru	Left
	33	3	22
A	28	3	22
B	0	0	0
C	0	0	0
D	5	0	0
E	0	0	0

To North

	51
A	47
B	0
C	0
D	2
E	2

2024 AM 100th Highest Hour Estimates

Leg AM Volumes

	109	
939		866
	138	
Total Entering Volume: 1,026		

To West

	465
A	394
B	7
C	0
D	21
E	43

West On: 39

Volume %

A	820	87.3%
B	10	1.1%
C	0	0.0%
D	42	4.5%
E	67	7.1%

AM 939

From West

	Left	Thru	Right
	33	371	70
A	31	325	70
B	0	3	0
C	0	0	0
D	0	21	0
E	2	22	0

From East

	Left	Thru	Right
	18	413	16
A	16	347	14
B	0	7	0
C	0	0	0
D	0	16	2
E	2	43	0

East On: 39

Vehicle Type

A	746	86.1%
B	10	1.2%
C	0	0.0%
D	41	4.7%
E	69	8.0%

AM 866

To East

	419
A	369
B	3
C	0
D	23
E	24

To South

	91
A	89
B	0
C	0
D	0
E	2

From South

	Left	Thru	Right
	19	2	26
A	19	2	22
B	0	0	0
C	0	0	0
D	0	0	2
E	0	0	2

South On: 47 St

Vehicle Type	Volume	%
A: Passenger Vehicle	132	95.7%
B: Recreational Vehicle	0	0.0%
C: Bus	0	0.0%
D: Single Unit Truck	2	1.4%
E: Tractor Trailer Unit	4	2.9%

AM 138

NOTE:

Coloured line thickness
corresponds to turning
movement volume.

Reference Number:
997164

Intersection of:
39 & 47 ST IN CALMAR 30-49-26-
41150000

North On: 47 St	Vehicle Type	Volume	%
	A: Passenger Vehicle	89	98.9%
	B: Recreational Vehicle	1	1.1%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	0	0.0%
	PM	90	

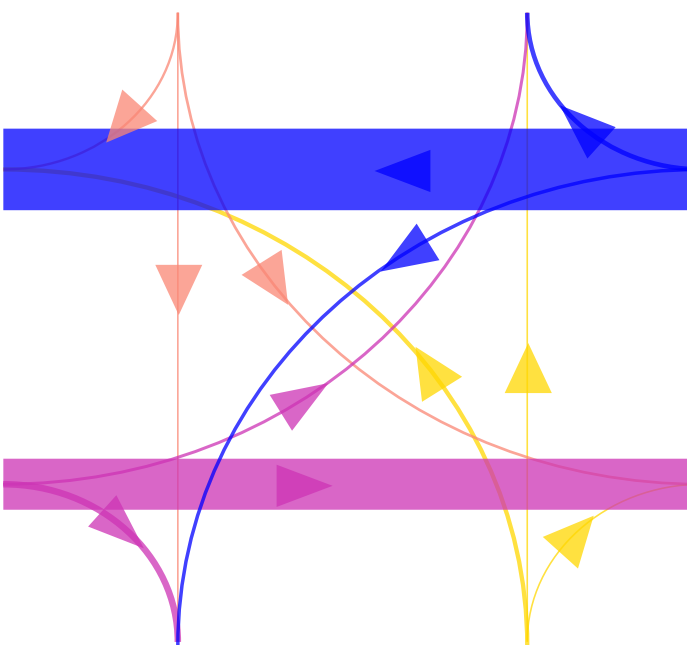
2024 PM 100th Highest Hour Estimates		
Leg PM Volumes		
936	90	911
	109	
Total Entering Volume: 1,023		

From North			
	Right	Thru	Left
	15	6	17
A	15	6	17
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0

To North			
	Right	Thru	Left
A		51	
B		1	
C		0	
D		0	
E		0	

To West			
	Right	Thru	Left
A		521	
B		18	
C		0	
D		3	
E		13	

West On: 39			
	Volume	%	
A	871	93.1%	
B	24	2.6%	
C	0	0.0%	
D	19	2.0%	
E	22	2.4%	
PM	936		



From East			
	Left	Thru	Right
	22	513	29
A	21	480	29
B	1	17	0
C	0	0	0
D	0	3	0
E	0	13	0

Vehicle Type			
	Volume	%	
A	846	92.9%	
B	24	2.6%	
C	0	0.0%	
D	19	2.1%	
E	22	2.4%	
PM	911		

East On: 39			
	Volume	%	
A	846	92.9%	
B	24	2.6%	
C	0	0.0%	
D	19	2.1%	
E	22	2.4%	
PM	911		

From West			
	Left	Thru	Right
	19	321	41
A	19	290	41
B	0	6	0
C	0	0	0
D	0	16	0
E	0	9	0

To East			
	Right	Thru	Left
A		316	
B		6	
C		0	
D		16	
E		9	

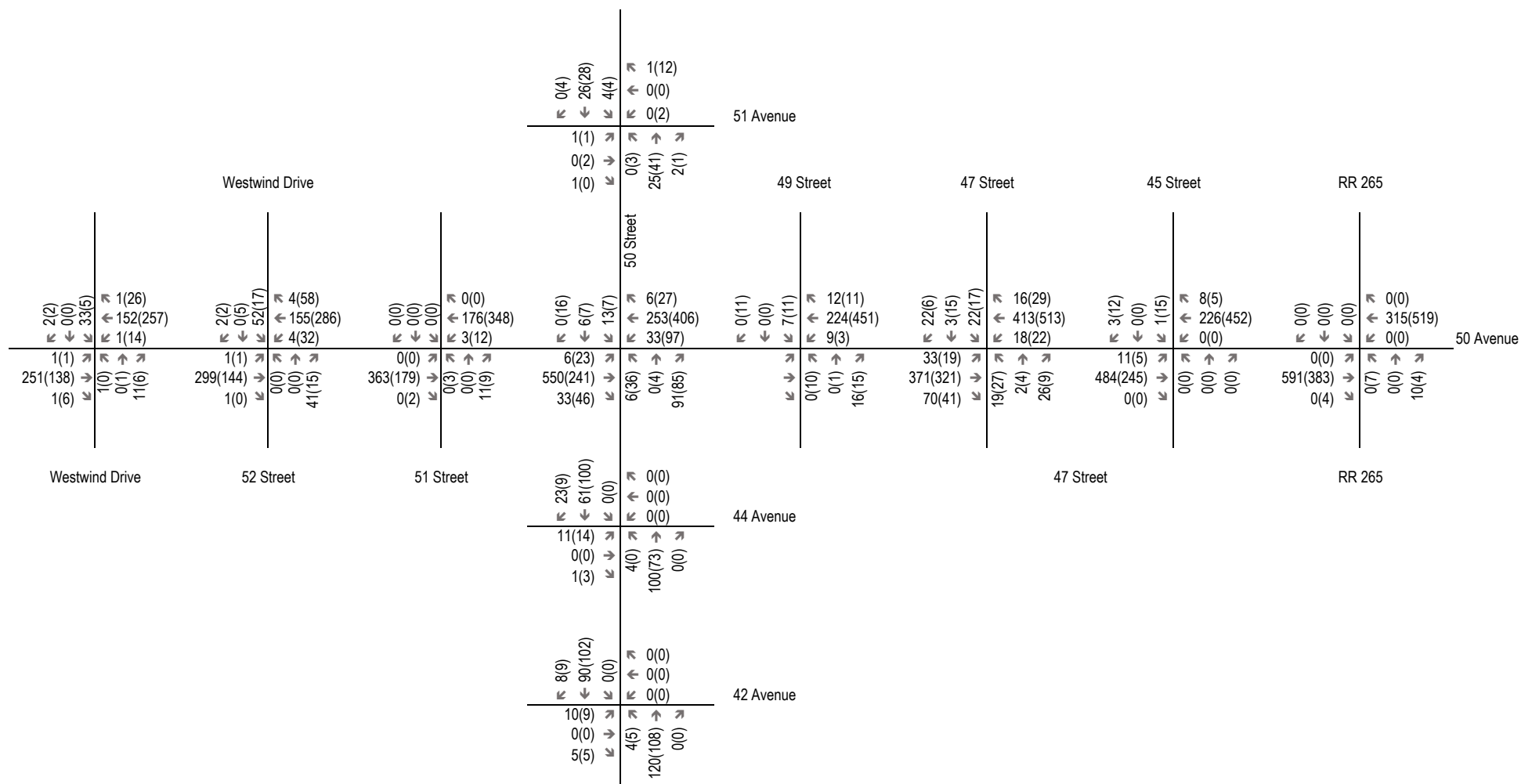
To South			
	Right	Thru	Left
A		68	
B		1	
C		0	
D		0	
E		0	

From South			
	Left	Thru	Right
	27	4	9
A	26	3	9
B	1	1	0
C	0	0	0
D	0	0	0
E	0	0	0

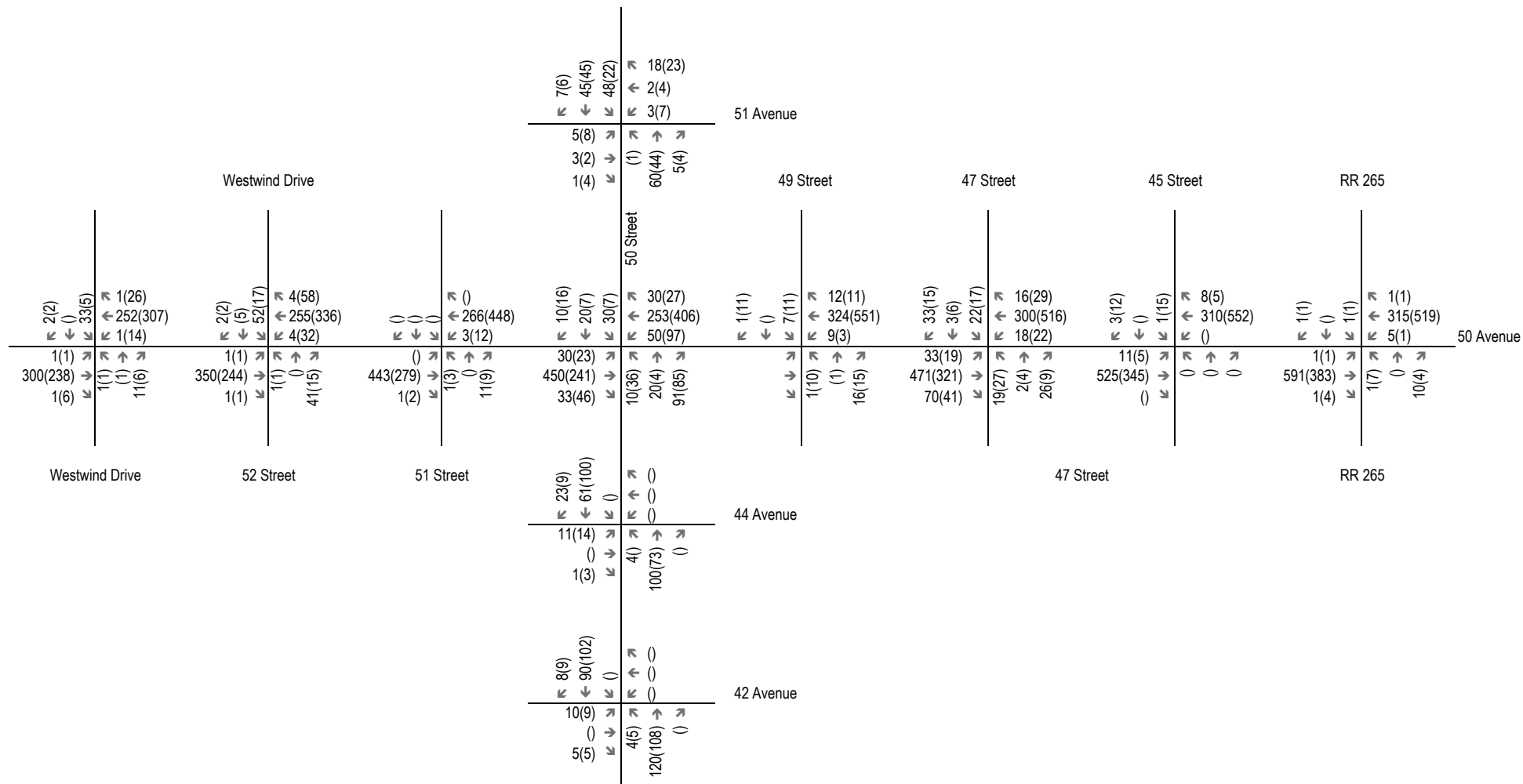
South On: 47 St	Vehicle Type	Volume	%
	A: Passenger Vehicle	106	97.2%
	B: Recreational Vehicle	3	2.8%
	C: Bus	0	0.0%
	D: Single Unit Truck	0	0.0%
	E: Tractor Trailer Unit	0	0.0%
	PM	109	

NOTE:
Coloured line thickness
corresponds to turning
movement volume.

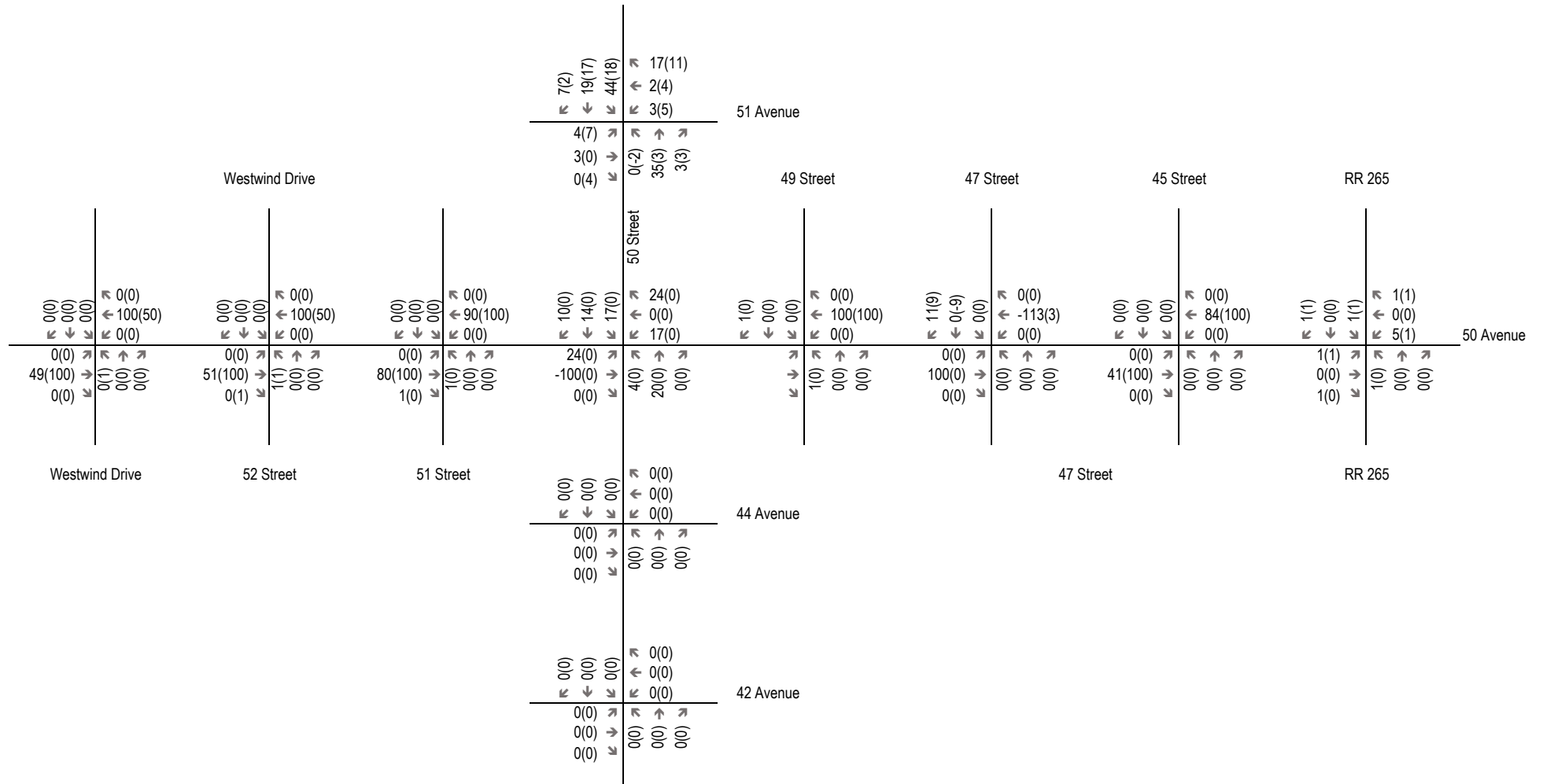
Unadjusted 100HH TMP Counts and TEC
Count Volumes AM(PM)



Adjusted 100HH TMP Counts and TEC Count
Volumes AM(PM)



Difference (Unadjusted - Adjusted)
AM(PM)



Turning movements at 50 Street based on a review of the 2021 counts.

Adjustments to the eastbound and westbound volumes on 50 Avenue to better balance volumes between intersections.



APPENDIX

Existing Roadway Plans and Studies

C

Routine Geometric Assessment



Highway 39:10
(C1) Km 11.200 – 26.108

2 Km West of Highway 795 – City of
Leduc

APRIL 2019

Prepared for:
NORTH CENTRAL REGION

Alberta
Transportation



5307 – 47 Street, Edmonton, Alberta T6B 3T4 Phone: (780) 440-4411 Fax: (780) 440-2585

- ♦ 18.687 (L) relocate to property line at 18.789
- ♦ 18.938 (R) relocate to property line at 18.789
- ♦ 19.874 (L) relocate to RR 262
- ♦ 21.456 (L) relocate to RR 261
- ♦ 22.511 (L) relocate to RR 260
- ♦ 24.740 (L) relocate to be directly across from another access at 24.789 (L)

By removing the access at km 11.800 (R) then the wooden posts on Westview Drive / 49 Avenue will have to be removed to allow access from the road to the field.



Figure 26 - 49 Ave / Westview Drive Post Removal



Figure 27 - 49 Ave / Westview Drive Post Removal - Looking West

Access at km 11.820 can be relocated to Westview Drive with a service road along the service road right of way. However, discussions with landowners will be needed before service road can be built. There could be heavy resistance from the landowner who is adjacent to the service road right of way because the construction of the service road will have significant change to the layout of their yard.

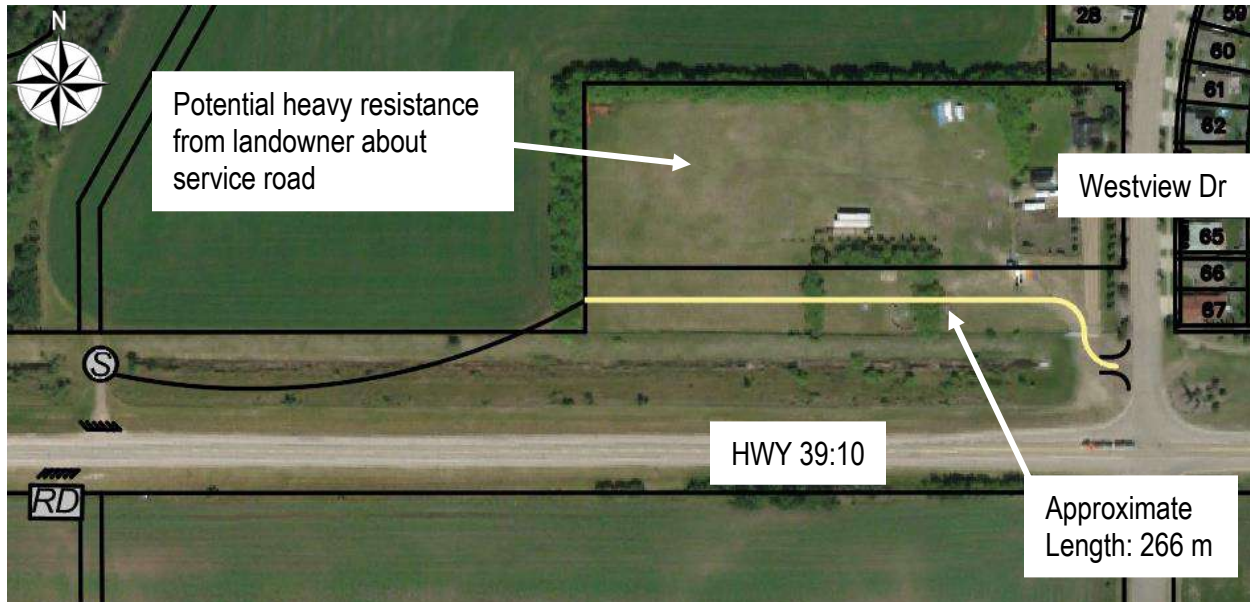


Figure 28- Access at Km 11.820 (L) Service Road Relocation

2.12.1 Direct Residential Accesses in Calmar

AT has expressed interest in removing private residential accesses directly accessing Highway 39:10 within the Town of Calmar. The first access is at km 12.519 on the right side where there is a joint access being used by 4 residents. This access could be removed since the property owners could access their property from Westview Drive / 49 Avenue. However, there could be heavy resistance with this option because all 4 of these residences' garages face north and 3 of the residences do not have driveways leading south to Westview Drive / 49 Avenue. Furthermore, there would need to be significant changes to many of the landowner's properties to construct a driveway accessing 49 Ave / Westview Drive and connecting to their existing garages. Another option is to construct a service road heading west connecting to Westview Drive.



Figure 29 - Potential Urban Residential Access Removal

The accesses at km 12.823 and at km 12.877 on the left side serve the same property which is a church. Therefore, 1 of these 2 accesses could be removed. Also, the access at km 12.905 on the right side could be removed since this resident has access to their property from 51 Street.

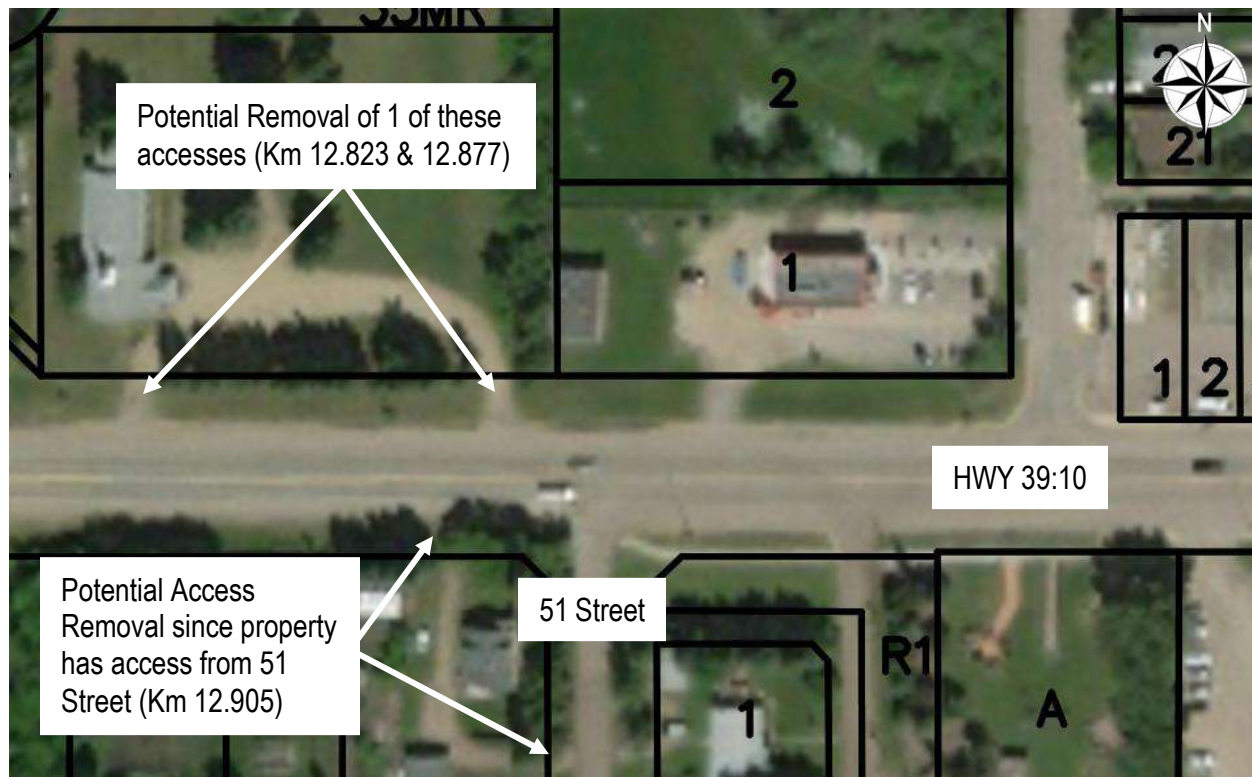


Figure 30 - Potential Urban Residential Access Removal (2)

The accesses at km 13.497 on the left side could be removed since this resident has access to their property from 51 Street from a back alley.

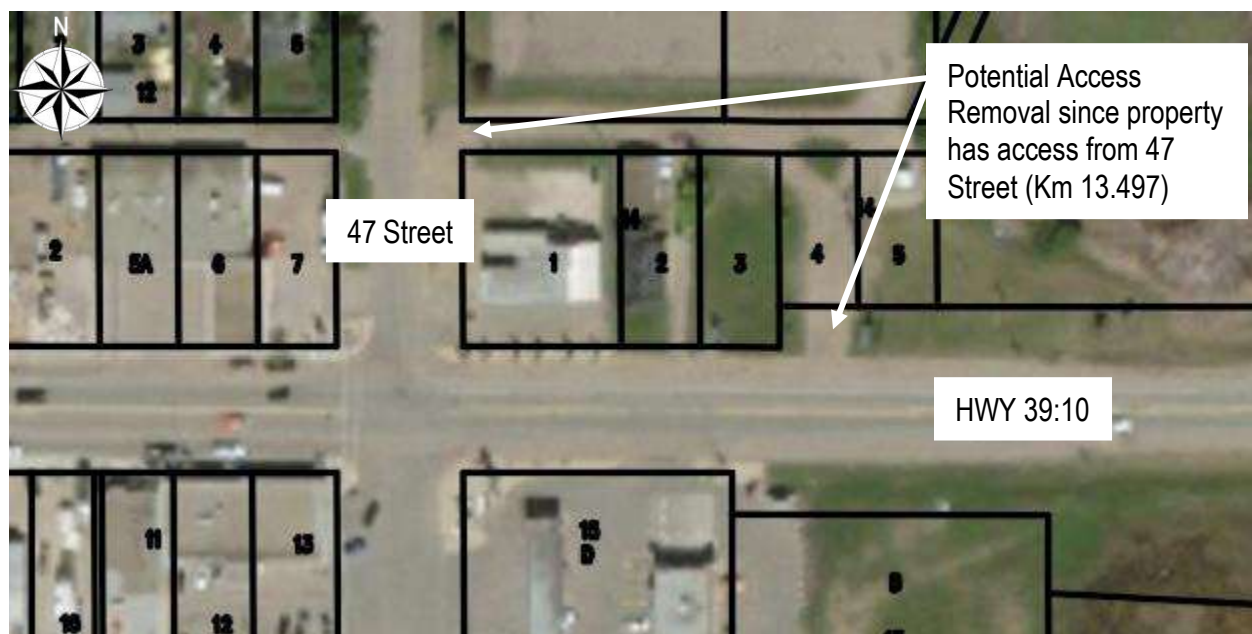
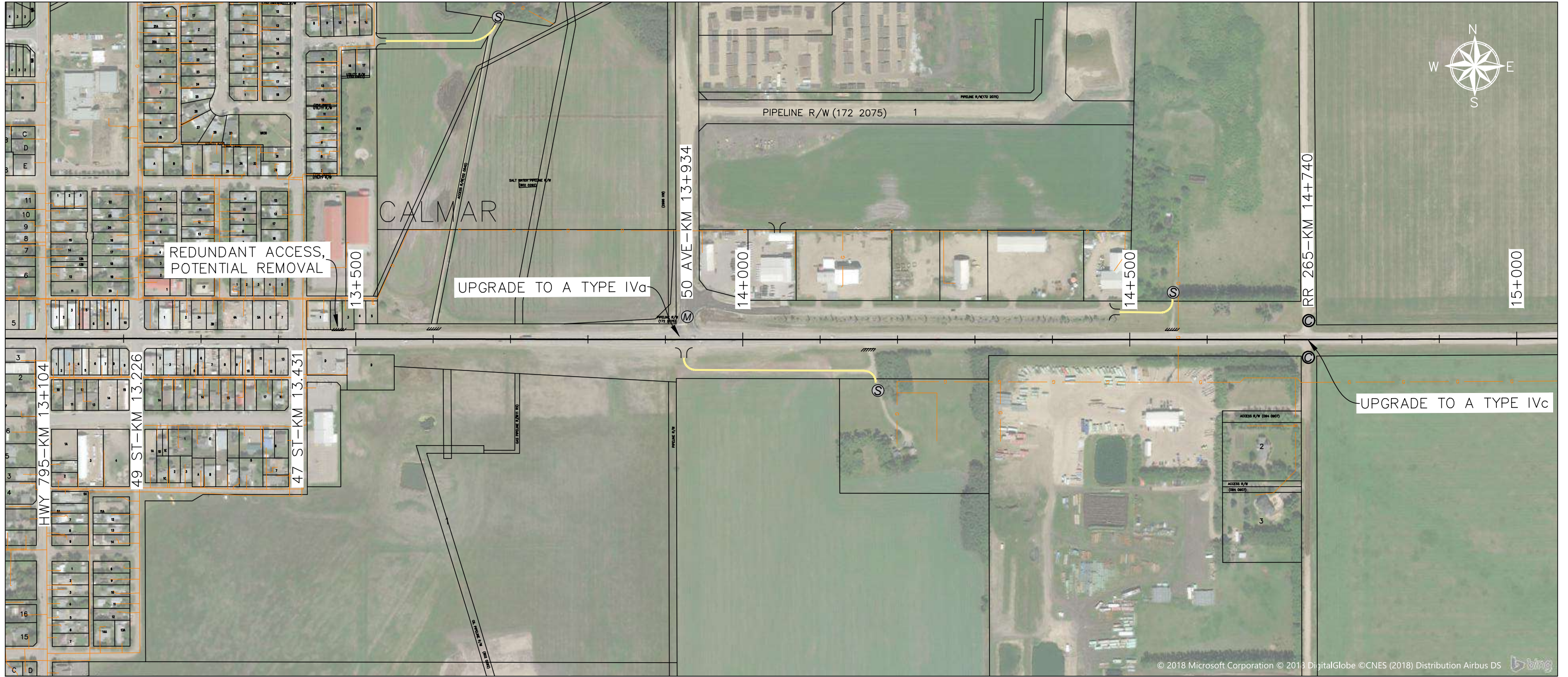


Figure 31 - Potential Urban Residential Access Removal (3)



- © = COMPLIANT ACCESS
RD = REDUNDANT ACCESS
RR = REMOVE AND RELOCATE ACCESS
S = RELOCATE ACCESS - SERVICE ROAD REQUIRED
M = LEAVE IN PLACE SUPPORTABLE WITH CONTINUED MONITORING
= POTENTIAL SERVICE ROAD
= POTENTIAL ACCESS REMOVAL
= POTENTIAL ACCESS LOCATION
= LOW PRESSURE GAS (APPROXIMATE)



HIGHWAY 39:10 PROJECT LIMITS (KM 11.200 TO 26.108)				
REGION	DISTRICT	DRAWN BY:	CHECKED BY:	OVERALL PLANS
NORTH CENTRAL	STONY PLAIN	BGV	WDK	
APRIL 2019				2 OF 8

DRAFT REPORT
Internal Information Only

HIGHWAY 39
CALMAR TO HIGHWAY 2
LONG-TERM TRANSPORTATION
NETWORK STUDY

2131-00093-0

Prepared for:
Alberta Transportation

By:

McElhanney Consulting Services Ltd.
138 - 14315 118th Avenue
Edmonton, Alberta
T5L 4S6

November 2010

Alberta Transportation
Report R-1106

1 Executive Summary

The existing alignment of Highway 39 connects the communities of Leduc and Calmar. As the highway passes through these communities, the posted speed limits, service levels and safety are affected. Based on continued growth in both Leduc and Calmar, and the associated increase in traffic volumes, twinning the existing cross-section will soon be warranted through Calmar and between Calmar and Leduc, and six-laning will be warranted through Leduc.

The City of Leduc has identified the need for an east-west arterial in the city's northwest quadrant, connecting Highway 2 in north Leduc with Highway 39 west of Leduc. This connection would follow 65th Avenue and is part of the city's plan to ultimately establish a boundary road (or municipal ring road) circling the city's west end¹. The city has suggested that 65th Avenue, west of Highway 2, could become a new alignment for Highway 39 and have approached the department for funding.

The Study Purpose was to rationalize the road network in the study area with a focus on the future of Highway 39 approaching/entering the City of Leduc to Highway 2.

Highway 39 is a Level 2 (Arterial) Class Highway, one class below Highway 2, with a Multi-lane Roadside Management classification between Calmar and Leduc. Provincial interest in bypass routes involves Level 1 (National) highways. Level 2 highways may warrant realignment in certain circumstances; however, several conditions should be met.

The Town of Calmar is situated on Highway 39 approximately 13 km west of Leduc. Outside of Leduc, Calmar is the only municipality that straddles the highway, and where the highway also serves as the community's main street. To achieve consistent highway design and operation along all of Highway 39, west of Leduc, Highway 39 would need to be upgraded through or passing Calmar.

The pedestrian-friendly, main street, environment and the proximity of businesses to the roadway, would seriously complicate, possibly preclude, twinning through Calmar. Between Calmar and Leduc the existing alignment should be relatively easy to twin.

The highway is already twinned through Leduc, however, the growing and high local traffic volumes will soon warrant six-laning. In addition, the relatively close intersection spacing, some access management issues, some lack of turn bays and a low posted speed limit, combine to result in a poor level of service and safety. This section of highway should be upgradable to a six-lane urban cross-section; however, a more detailed study is required to confirm specific requirements and constraints.

¹ City of Leduc, Transportation Master Plan, 2006-2016, Long Term Network, Exhibit 5.1, ISL, 2009

Conclusions:

Calmar: The existing route through Calmar passes through a constrained and pedestrian friendly streetscape. Twinning to an acceptable standard for an arterial highway would significantly impact Calmar's "main street" environment. Ultimately, other options may need to be considered.

Calmar to Leduc: This section of highway will soon warrant twinning. This can be most easily and economically accomplished along the existing alignment.

Leduc: The City of Leduc's Transportation Master Plan proposes an alternate alignment for Highway 39 that would connect to Highway 2 at 65th Avenue. This realignment would run along the border between the City and the Edmonton International Airport (EIA), and would turn south to connect to the existing Highway 39 west of the city's proposed North-South Boundary Road. If constructed as Highway 39 under provincial jurisdiction, this realignment would need to be designed to provide a higher standard than the existing route, with increased intersection spacing and a higher posted speed limit.

Provincial Interest: Justification cannot be made to realign Highway 39 to 65th Avenue based on the criteria for realignment of a Level 2 provincial highway. If it is determined that the existing alignment through Leduc cannot be upgraded and expanded to six lanes, Highway 39 through west Leduc will still ultimately be relieved by new service-level interchanges constructed at 65th Avenue to the north and at a relocated Highway 2A to the south. Following the suggested new alignment would be of marginal benefit to the highway network given that, among other things, it will ultimately once again pass through a fully-developed urban environment.

North-South Highway Network: Ultimately other routes parallel to Highway 2 should be established, including for example, Highway 814, Leduc County's Spine Road and the Terwillegar Drive/170th Street extension. Ultimately other interchanges will be constructed along Highway 2, including service-level interchanges at 65th Avenue and at a relocated Highway 2A; and a directional interchange for the Terwillegar Drive/170th Street extension, north of the existing Glen Park Road interchange, making Highway 39 through Leduc less important to the Province in serving inter-regional flows.

Leduc Spine Road: The City's and County's proposed Spine Road, following the City's east municipal boundary, can be extended south to connect to Highway 2A south of Leduc, relieving both Highways 2 and 2A. This poses an interim solution for Highway 2A with the potential to extend the current Highway 2A function, i.e. off-loading local trips from Highway 2, from south of Leduc north through Nisku to the City of Edmonton.

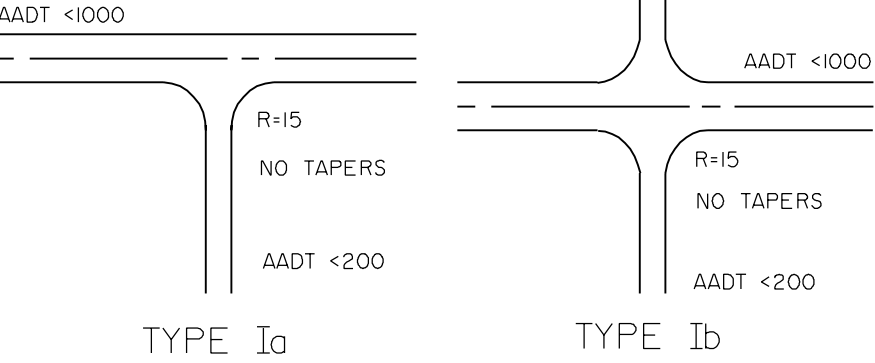
Diverting Highway 2A traffic along the Spine Road should ultimately permit establishing a contiguous east-west South Leduc Boundary Road, intersecting the present Highway 2A with an all-movement intersection and extending west to the proposed Spine Road.



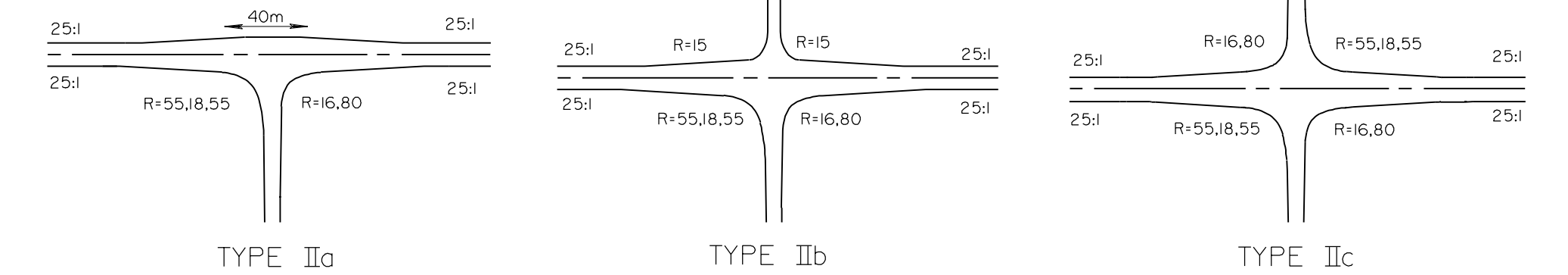
APPENDIX
TEC Intersection Types

D

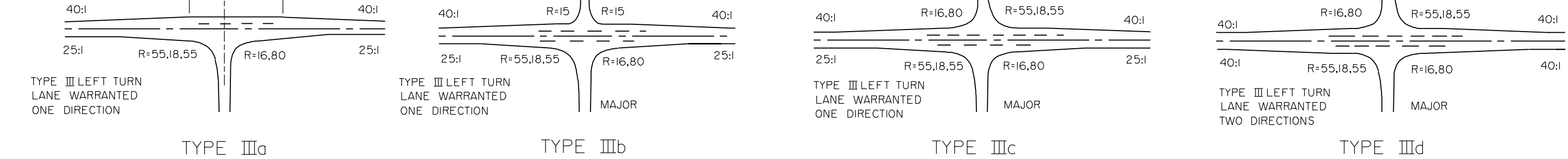
TYPE I's



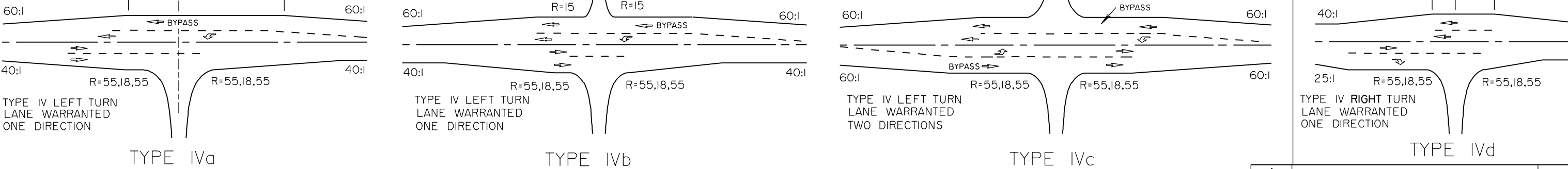
TYPE II's



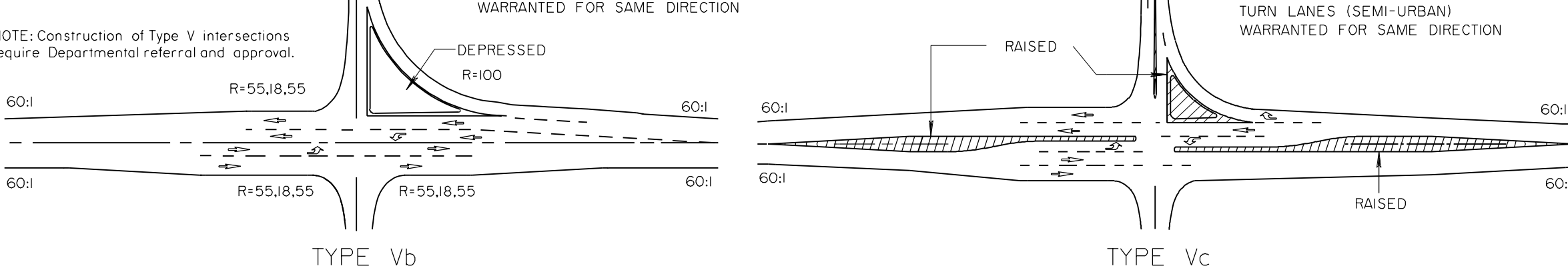
TYPE III's



TYPE IV's



TYPE V's



NOTES: 1. This is not a pavement marking drawing. 2. This figure depicts the typical layouts used for at-grade intersections. Detailed design considerations may dictate some minor alterations for particular intersections. The tapers shown here are typical for a 110 km/h design speed on the main highway.

	REVISED LANE DIMENSIONS	TDN	06/98
No.	REVISIONS	BY	DATE

FIGURE D-7.5

Date: APRIL 1995

STANDARD AT-GRADE INTERSECTION LAYOUTS FOR TWO-LANE HIGHWAYS

Prepared By: LT	Checked By: B.K.	Scale: N.T.S.	PAGE D-III

Graphics File: debd75.man



APPENDIX Trip Generation Parameters and Data

E

Appendix E - Calmar TMP Site Generated Traffic Calculations

Trip Generation Rates

Table T.1 below summarizes the trip rates used to calculate the site generated traffic.

T.1 Site Generated Traffic Trip Generation Rates

TMP Land Use	Unit	AM			PM			Source
		Rate	In	Out	Rate	In	Out	
Single Family	Dwelling Units	0.7	25%	75%	0.94	63%	37%	ITE 210
Multi-Family (low rise)	Dwelling Units	0.4	24%	76%	0.51	63%	37%	ITE 220
Multi-Family (mid rise)	Dwelling Units	0.37	23%	77%	0.39	61%	39%	ITE 221
Industrial	1000 Sq. Ft. GFA	0.23	76%	24%	0.39	20%	80%	Custom
Shopping Plaza (40 to 150k sq ft)	1000 Sq. Ft. GFA	1.73	62%	38%	5.19	49%	51%	ITE 821

Custom Industrial Rate

While the ITE Trip Generation Manual does include industrial uses such as Industrial Park (130), Manufacturing (140), Warehousing (150), and Utility (170), the trip generation rates vary greatly between the types. Based on ISL's experience, trips also vary greatly in rural areas compared to urban areas. As such, a custom industrial rate was developed to better capture the travel patterns in rural Alberta based on data collected from local industrial sites. This rate was developed based on industrial trip generation rate reviews ISL has completed in the past in addition to the trip generation rate for the northeast industrial lands in Calmar calculated from ISL's traffic count data. The average of the various site specific trip rates was then used for the custom industrial trip rate. Table T.2 shows the site specific trip rates and resulting custom rate, while Table T.3 compares the custom rate with the various industrial rates from ITE.

T.2 Site Specific Trip Generation Rates used to Develop a Custom Industrial Rate

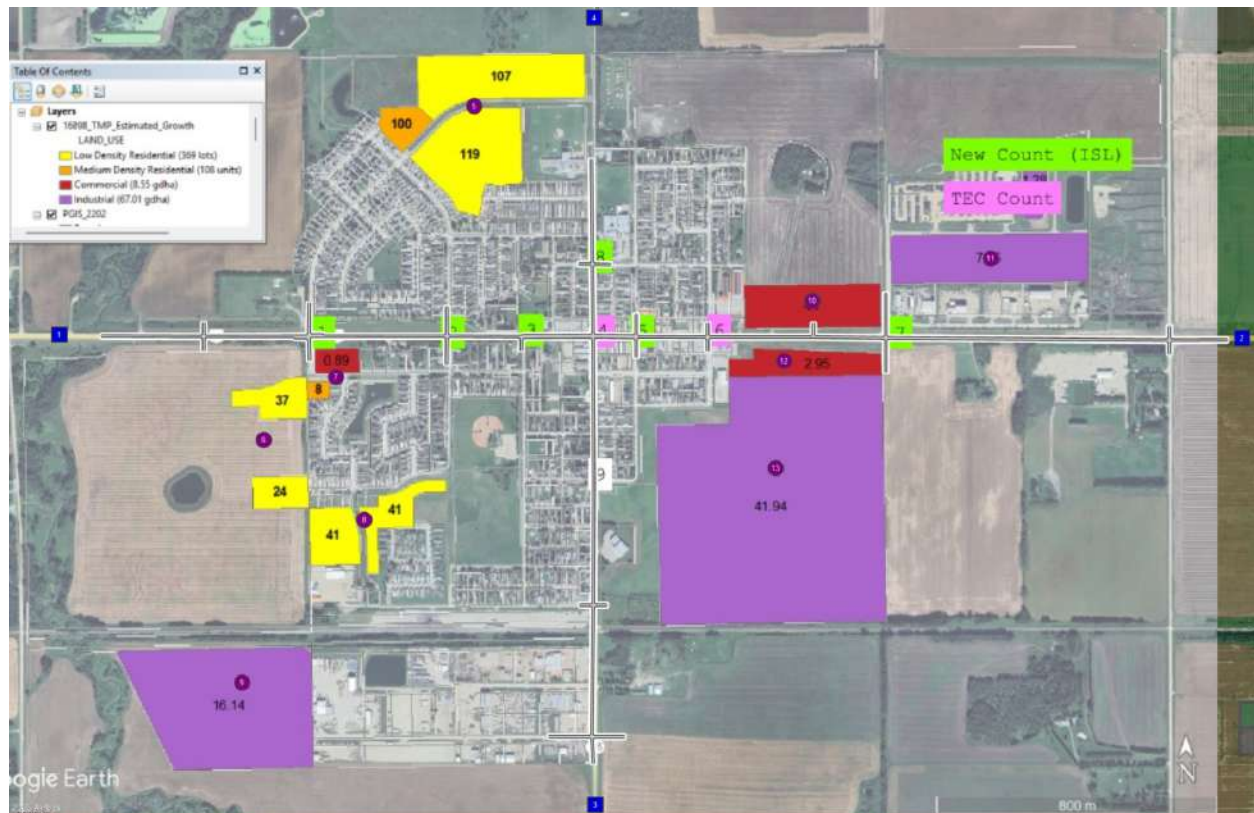
Location	AM				PM			
	Rate (HA)	Rate (kGFA)	In	Out	Rate (HA)	Rate (kGFA)	In	Out
NE at 45 Street (Calmar)	1.15	0.19	87%	13%	2.92	0.49	24%	76%
Dragon Sandblasting (Strathcona)	1.79	0.19	67%	33%	2.54	0.27	12%	88%
Liberty Road (Strathcona)	5.72	0.30	76%	24%	7.70	0.40	25%	75%
Custom Rate (Average)	2.89	0.23	76%	24%	4.39	0.39	20%	80%

T.3 Site Generated Traffic Trip Generation Rates

Location	AM			PM		
	Rate (kGFA)	In	Out	Rate (kGFA)	In	Out
General Light Industrial	0.74	88%	12%	0.65	14%	86%
Industrial Park	0.34	81%	19%	0.34	22%	78%
Manufacturing	0.68	76%	24%	0.74	31%	69%
Warehousing	0.17	77%	23%	0.18	28%	72%
Utility	2.33	87%	13%	2.16	18%	82%
Custom	0.23	76%	24%	0.39	20%	80%

Traffic Analysis Zones

For ease of calculation and modeling, development areas within Calmar were split into traffic analysis zones, shown in Figure F.1 below.



F.1: Traffic Analysis Zones

The land use quantities by zone are summarized in Table T.4 below.

T.4: Land Use Quantities by Zone

Zone	Land Use	Quantity	Units
5	Single Family	226	Dwelling Units
5	Multi-Family (mid rise)	100	Dwelling Units
6	Single Family	61	Dwelling Units
7	Shopping Plaza (40 to 150k sq ft)	24	kGFA
7	Multi-Family (low rise)	8	Dwelling Units
8	Single Family	82	Dwelling Units
9	Industrial	434	kGFA
10	Shopping Plaza (40 to 150k sq ft)	126	kGFA
11	Industrial	206	kGFA
12	Shopping Plaza (40 to 150k sq ft)	79	kGFA
13	Industrial	1,128	kGFA

Gross Site Generated Trips

The gross site generated trips are summarized in Table T.5 below.

T.5 Gross Site Generated Trips

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	48	147	195	158	94	251
6	11	32	43	36	21	57
7	26	18	45	63	65	128
8	14	43	57	49	29	77
9	76	24	100	34	135	169
10	136	83	219	322	335	656
11	36	11	47	16	64	80
12	85	52	137	202	210	412
13	197	62	259	88	352	440
Total	629	473	1103	967	1,305	2,272

Internal Trip Reduction

A 15 percent internal trip reduction was applied to the gross site generated trips. Statistics Canada journey to work data indicates approximately ~12 % of Calmar residents have a commute of 1km or shorter. This was increased to 15 in the AM peak hour and 25 percent in the PM peak hour to account for non-work trips. The internal trip reduction is provided in table T.6 below.

T.6 Internal Trip Reduction

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	7	22	29	39	23	63
6	2	5	6	9	5	14
7	4	3	7	16	16	32
8	2	6	9	12	7	19
9	11	4	15	8	34	42
10	20	12	33	80	84	164
11	5	2	7	4	16	20
12	13	8	21	50	53	103
13	30	9	39	22	88	110
Total	94	71	165	242	326	568

Internal trips were then split between vehicle and non-vehicle trips. Internal vehicle trips (T.7) were distributed onto the roadway network whereas internal non-vehicle trips (T.8) were fully removed from the net site generated trips. A 30% non-vehicle mode share was assumed based on the journey to work statistics Canada data for Calmar residents with a work commute of 1 km or less.

T.7 Internal Vehicle Trips

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	5	15	20	28	16	44
6	1	3	4	6	4	10
7	3	2	5	11	11	22
8	2	5	7	8	5	13
9	8	3	11	6	24	30
10	14	9	23	56	59	115
11	4	1	5	3	11	14
12	9	5	14	35	37	72
13	21	7	28	15	62	77
Total	67	50	117	168	229	397

T.8 Internal Non-Vehicle Trips

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	2	7	9	12	7	19
6	0	1	1	3	2	5
7	1	1	2	5	5	10
8	1	2	3	4	2	6
9	3	1	4	3	10	13
10	6	4	10	24	25	49
11	2	1	3	1	5	6
12	4	2	6	15	16	31
13	9	3	12	7	26	33
Total	28	22	50	74	98	172

Pass-by Reduction

A 30% pass-by reduction was applied to the remaining external commercial PM peak hour trips. No reduction was applied to the AM peak hour. This percentage is based on a review of the ITE 11th edition vehicle pass-by rates for a shopping plaza. The ITE rate is 40% but this was reduced to 30% to be conservative because the Town likely has less through traffic than many of the data sources for the ITE rate. The pass-by trip reduction is provided in Table T.9 below.

T.9 Pass-by Trip Reduction

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	14	14	28
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	72	75	148
11	0	0	0	0	0	0
12	0	0	0	45	47	93
13	0	0	0	0	0	0
Total	0	0	0	131	137	268

Net Site Generated Trips

The net site generated trips, which excludes internal and pass-by trips, are summarized in Table T.10 below.

T.10 Pass-by Trip Reduction

Zone	AM Trips			PM Trips		
	In	Out	Total	In	Out	Total
5	41	125	166	118	70	188
6	9	27	36	27	16	43
7	23	15	38	34	34	68
8	12	37	49	36	21	57
9	65	20	85	25	102	127
10	115	71	186	169	176	344
11	31	10	40	12	48	60
12	72	44	117	106	110	216
13	168	53	221	66	264	330
Total	536	402	937	593	841	1,434

Site Generated Trips Distribution

The net site generated trips were distributed onto the roadway network based on a review of the existing traffic data, as follows:

- 50 Avenue (Highway 39) West: 38%
- 50 Avenue (Highway 39) East: 65%
- 50 Street (Highway 795) North: 1%
- 50 Street (Highway 795) South: 1%

It is noted that, while pass-by and internal vehicle trips are not included in the net site generated trips Table T.10 above, these trips were also distributed onto the network.



APPENDIX
TEC Warrants

F

Traffic Signal Warrant

Six-hour peak traffic volumes were estimated using a factor applied to the sum of the AM and PM peak hour. This factor was calculated based on the existing traffic data. Each leg of the study intersections includes an assumed number of pedestrian volumes based on existing traffic counts or engineering judgement. The pedestrian volumes contribute to the total warrant score. New intersections are assumed to have a shared left/through/right lane for each new approach. Existing intersections were assessed assuming the existing approach geometry. The results are summarized in the table below. Signal warrant sheets are provided in the following pages.

T.1 Traffic Signal Warrant Results

Intersection	Horizon	Scenario	Result	Warrant Score (W)		
				Total	Vehicle	Pedestrian
50 Ave and Westview Dr	Existing	NA	Not Warranted - Vs<75	9	8	1
	20YR	Background	Not Warranted - Vs<75	15	13	2
		Total	NOT Warranted	83	80	3
50 Ave and 52 St	Existing	NA	Not Warranted - Vs<75	25	18	7
	20YR	Background	Not Warranted - Vs<75	39	28	11
		Total	Warranted	107	98	9
50 Ave and 51 St	Existing	NA	Not Warranted - Vs<75	5	3	2
	20YR	Background	Not Warranted - Vs<75	8	5	3
		Total	Not Warranted - Vs<75	23	19	4
50 Ave and 50 St	Existing	NA	NOT Warranted	81	59	22
	20YR	Background	Warranted	169	136	33
		Total	Warranted	449	434	15
50 Ave and 49 St	Existing	NA	Not Warranted - Vs<75	27	15	12
	20YR	Background	Not Warranted - Vs<75	37	25	12
		Total	Not Warranted - Vs<75	65	47	18
50 Ave and 47 St	Existing	NA	Not Warranted - Vs<75	53	43	10
	20YR	Background	Not Warranted - Vs<75	85	69	16
		Total	Warranted	328	304	24
50 Ave and 45 St	Existing	NA	Not Warranted - Vs<75	7	7	0
	20YR	Background	Not Warranted - Vs<75	11	11	0
		Total	Warranted	295	295	0
51 Ave and 50 St	Existing	NA	Not Warranted - Vs<75	2	1	1
	20YR	Background	Not Warranted - Vs<75	3	2	1
		Total	NOT Warranted	9	8	1

Intersection	Horizon	Scenario	Result	Warrant Score (W)		
				Total	Vehicle	Pedestrian
50 St and 44 Ave	Existing	NA	NOT Warranted	1	1	0
	20YR	Background	NOT Warranted	2	2	0
		Total	NOT Warranted	19	19	0
50 St and 42 Ave	Existing	NA	NOT Warranted	2	2	0
	20YR	Background	NOT Warranted	3	3	0
		Total	NOT Warranted	26	26	0



for Warrant Calculation Results, please hit 'Page Down'	Main Street (name)	50 St	Comments Existing Background 6 Hour Traffic Data	Direction (EW or NS)	EW	Road Authority:	TEC
	Side Street (name)	44 Ave		Direction (EW or NS)	NS	City:	Calmar
	Quadrant / Int #			Analysis Date:	2025 May 07, Wed		
	CHECK SHEET	Count Date:		2025 Mar 19, Wed			
				Date Entry Format:	(yyyy-mm-dd)		

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 St	WB				1					1			
50 St	EB									0			
44 Ave	NB				1					1			
44 Ave	SB				1					1			

Saturation Flow Rates (if not default) (vphpl)

Left Turn

Through

Right Turn

1,650

1,800

1,500

Default Saturation Flow Rates (vphpl)

Are the 44 Ave NB right turns significantly impeded by through movements? (y/n)	n
Are the 44 Ave SB right turns significantly impeded by through movements? (y/n)	n
Are the 50 St WB right turns significantly impeded by through movements? (y/n)	n

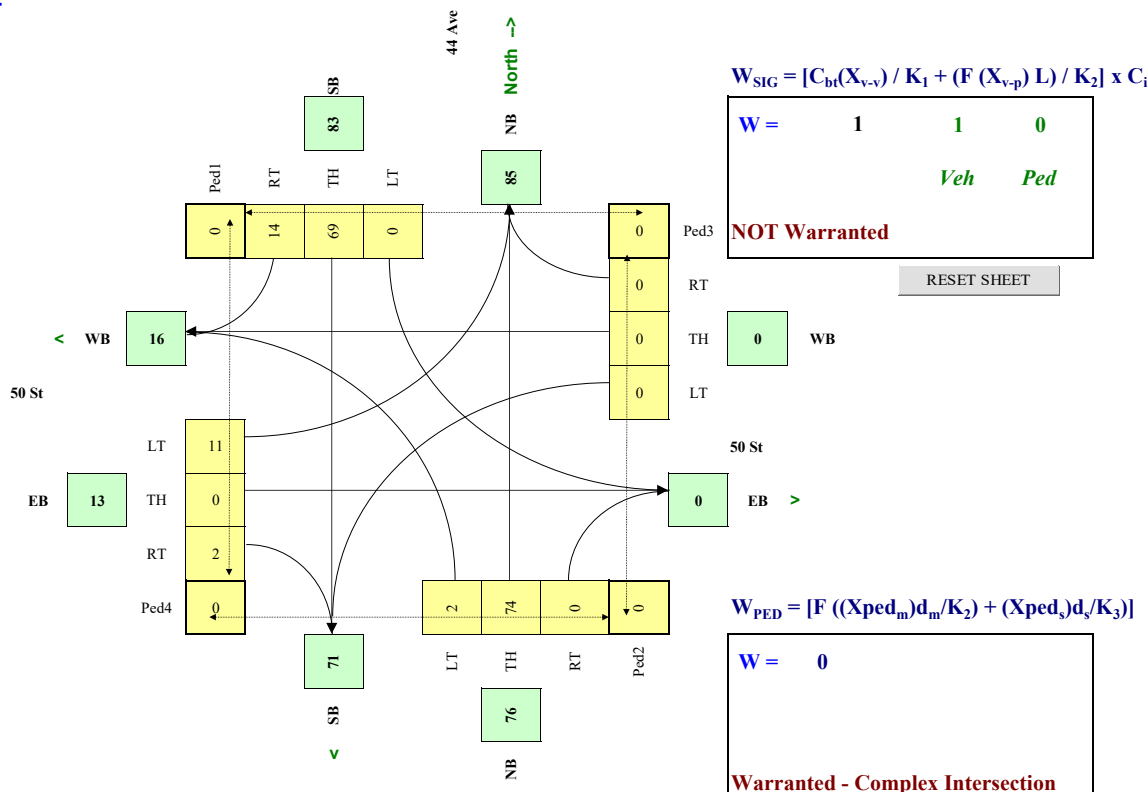
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	y

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
44 Ave	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	10	446	0	0	415	83	0	0	0	65	0	10				
Total (6-hour peak)	10	446	0	0	415	83	0	0	0	65	0	10	0	0	0	0
Average (6-hour peak)	2	74	0	0	69	14	0	0	0	11	0	2	0	0	0	0
Actual Pedestrian Crossing Distance (m)													15.0	15.0	15.0	15.0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 St	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	42 Ave	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments Existing Background 6 Hour Traffic Data		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 St	WB				1						1			
50 St	EB										0			
42 Ave	NB				1						1			
42 Ave	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 42 Ave NB right turns significantly impeded by through movements? (y/n) n
Are the 42 Ave SB right turns significantly impeded by through movements? (y/n) n
Are the 50 St WB right turns significantly impeded by through movements? (y/n) n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

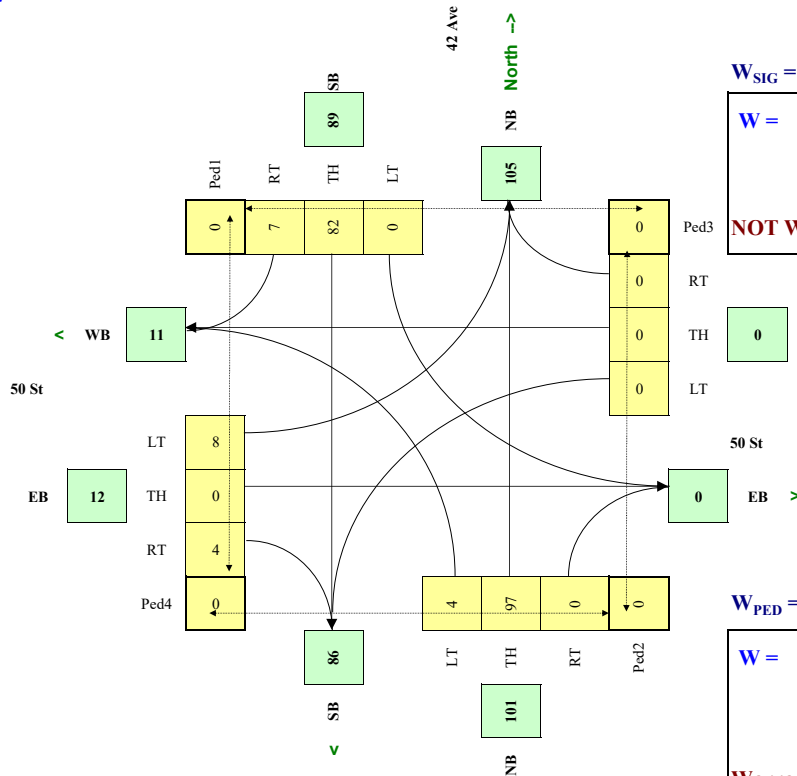
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
42 Ave	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	23	581	0	0	490	43	0	0	0	48	0	26				
Total (6-hour peak)	23	581	0	0	490	43	0	0	0	48	0	26	0	0	0	0
Average (6-hour peak)	4	97	0	0	82	7	0	0	0	8	0	4	0	0	0	0

Actual Pedestrian Crossing Distance (m)

15.0	15.0	15.0	15.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	2	2	0
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	Westview Dr	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	Existing Background 6 Hr Total Volumes	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB			1				1				1					
50 Ave EB			1				1				1					
Westview Dr NB					1						1					
Westview Dr SB					1						1					

Are the Westview Dr NB right turns significantly impeded by through movements? (y/n) n
Are the Westview Dr SB right turns significantly impeded by through movements? (y/n) n

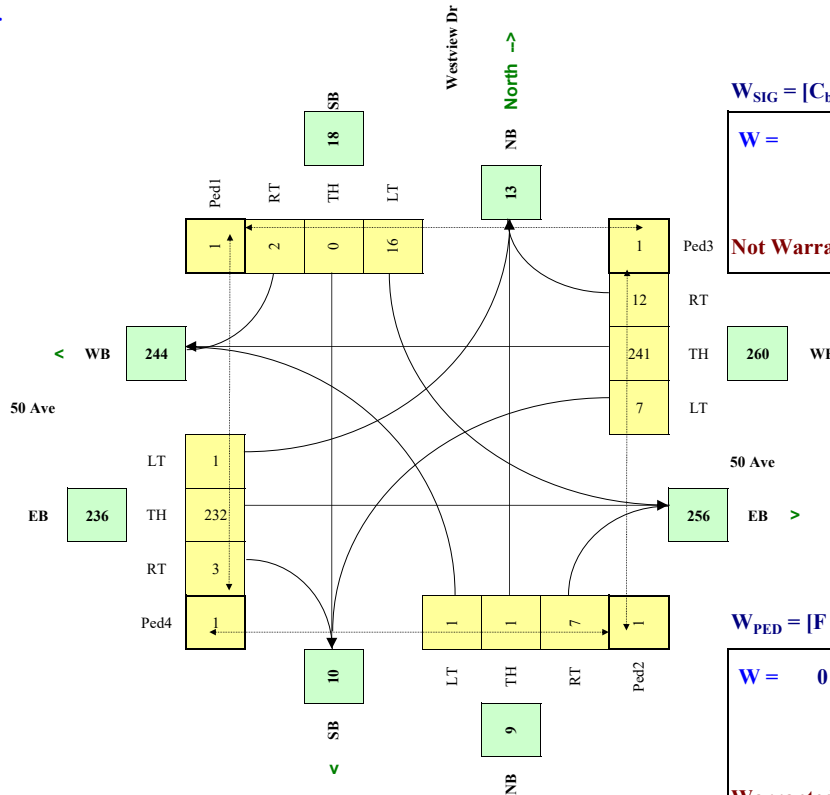
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
Westview Dr	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	5	3	44	98	0	10	39	1448	70	5	1393	18	6	6	6	6
Total (6-hour peak)	5	3	44	98	0	10	39	1,448	70	5	1,393	18	6	6	6	6
Average (6-hour peak)	1	1	7	16	0	2	7	241	12	1	232	3	1	1	1	1

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	9	8	1
		Veh	Ped

Not Warranted - Vs<75

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	52 St	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments Existing Background Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase
50 Ave	WB				1						1			
50 Ave	EB				1						1			
52 St	NB				1						1			
52 St	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

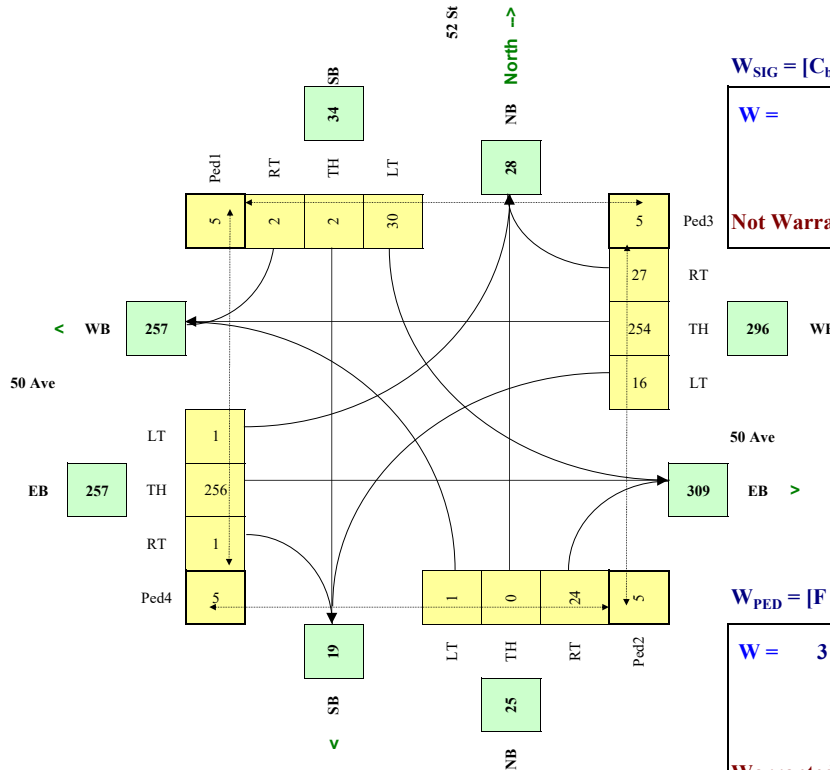
Are the 52 St NB right turns significantly impeded by through movements? (y/n) n
Are the 52 St SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
52 St	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	5	0	144	178	13	10	93	1525	160	5	1533	5	30	30	30	30
Total (6-hour peak)	5	0	144	178	13	10	93	1,525	160	5	1,533	5	30	30	30	30
Average (6-hour peak)	1	0	24	30	2	2	16	254	27	1	256	1	5	5	5	5
Actual Pedestrian Crossing Distance (m)													18.0	18.0	14.0	14.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	25	18	7
		Veh	Ped
Not Warranted - Vs<75			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	3
Warranted - Complex Intersection	



for Warrant Calculation Results, please hit 'Page Down'	Main Street (name)	50 Ave	Comments Existing Background 6 Hr Total Volumes	Direction (EW or NS)	EW	Road Authority:	TEC
	Side Street (name)	51 St		Direction (EW or NS)	NS	City:	Calmar
	Quadrant / Int #			Analysis Date:	2025 May 07, Wed		
	CHECK SHEET	Count Date:		2025 Mar 19, Wed			
				Date Entry Format:	(yyyy-mm-dd)		

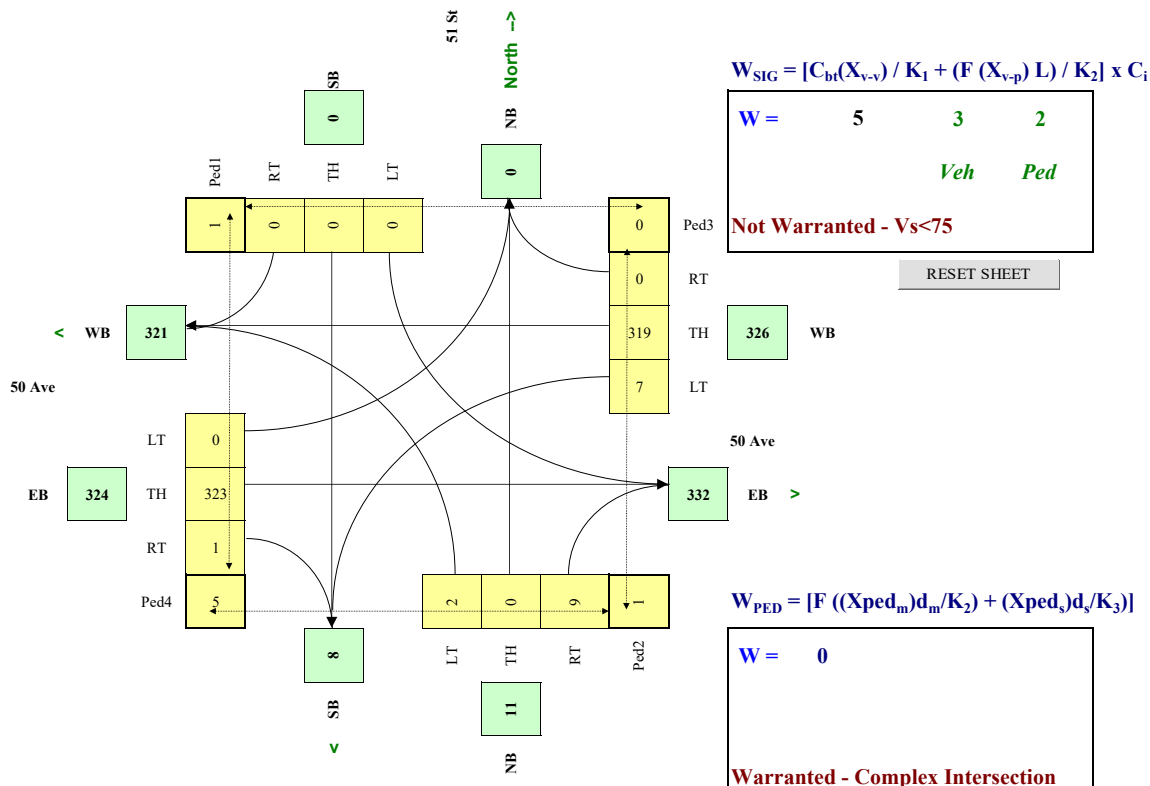
Are the 51 St NB right turns significantly impeded by through movements? (y/n)	n
	n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)	n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)	n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	11	0	54	0	0	0	40	1914	0	0	1935	8	6	6		30
Total (6-hour peak)	11	0	54	0	0	0	40	1,914	0	0	1,935	8	6	6	0	30
Average (6-hour peak)	2	0	9	0	0	0	7	319	0	0	323	1	1	1	0	5
Actual Pedestrian Crossing Distance (m)													20.0	20.0		14.0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	50 St	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments Existing Background Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave	WB	1				1					1				Left Turn	1,650
50 Ave	EB	1				1					1				Through	1,800
50 St	NB				1						1				Right Turn	1,500
50 St	SB				1						1					

Are the 50 St NB right turns significantly impeded by through movements? (y/n) n
Are the 50 St SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

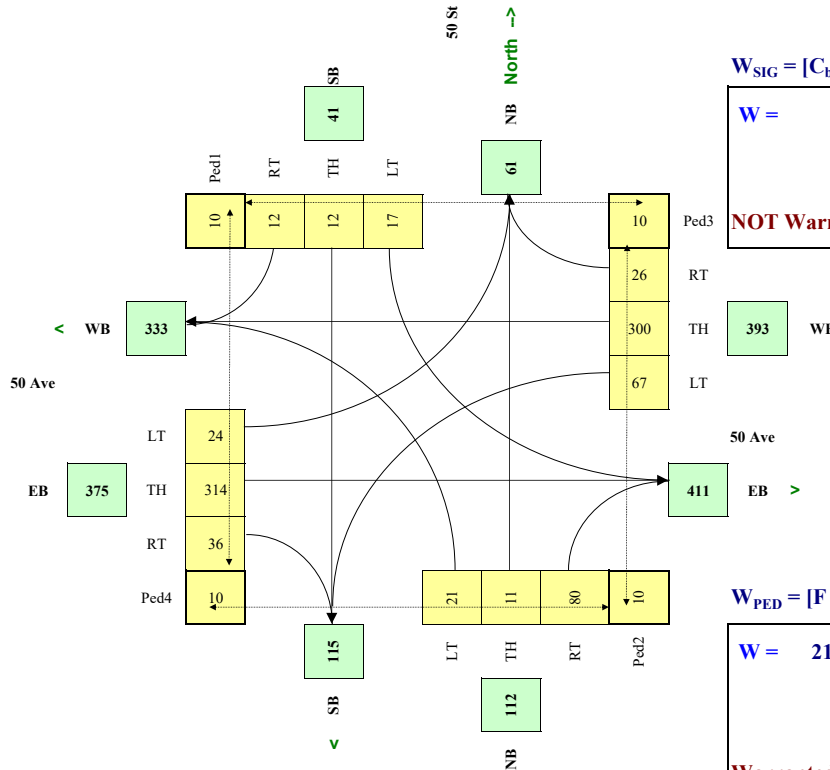
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
50 St	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours															Ped1	Ped2	Ped3	Ped4
Traffic Input															NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	W Side	E Side	N Side	S Side
6 Hour Average																		
	126	66	480	101	74	71	401	1799	156	145	1886	216	60	60	60	60	60	60
Total (6-hour peak)	126	66	480	101	74	71	401	1,799	156	145	1,886	216	60	60	60	60	60	60
Average (6-hour peak)	21	11	80	17	12	12	67	300	26	24	314	36	10	10	10	10	10	10

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	81	59	22
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W = 21

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	49 St	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	Existing Background 6 Hr Total Volumes	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB					1						1				Left Turn	1,650
50 Ave EB					1						1				Through	1,800
49 St NB					1						1				Right Turn	1,500
49 St SB					1						1					

Are the 49 St NB right turns significantly impeded by through movements? (y/n) n
Are the 49 St SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
49 St	NS	50	5.0%	n	0.0

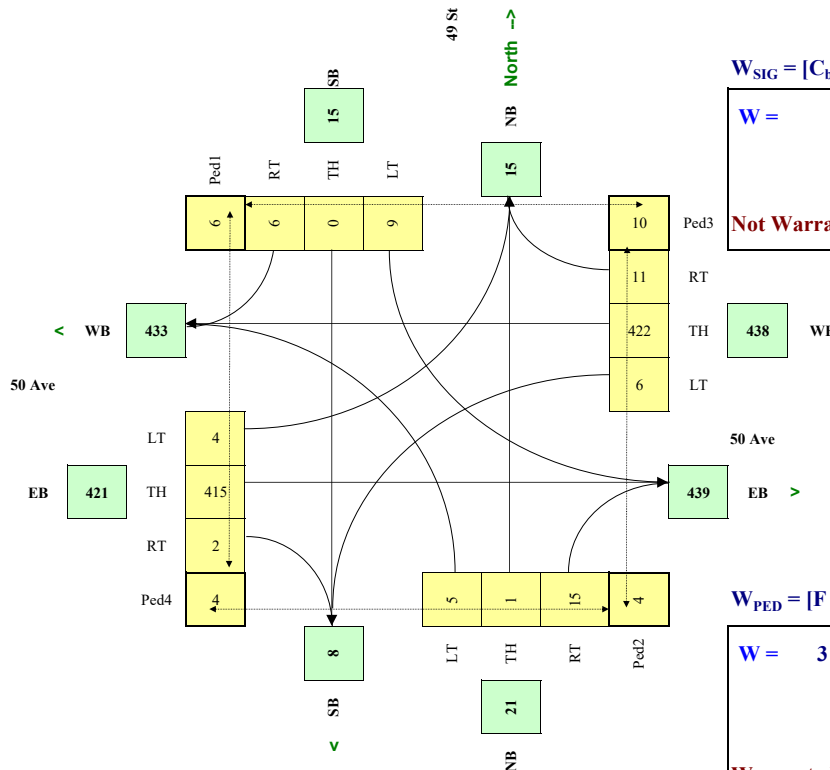
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	32	3	90	52	0	35	35	2529	66	23	2491	12	35	25	60	25
Total (6-hour peak)	32	3	90	52	0	35	35	2,529	66	23	2,491	12	35	25	60	25
Average (6-hour peak)	5	1	15	9	0	6	6	422	11	4	415	2	6	4	10	4

Actual Pedestrian Crossing Distance (m)

20.0	20.0	14.0	14.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	27	15	12
		Veh	Ped

Not Warranted - Vs<75

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	3

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	47 St	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments Existing Background Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase
50 Ave	WB				1						1			
50 Ave	EB				1						1			
47 St	NB				1						1			
47 St	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 47 St NB right turns significantly impeded by through movements? (y/n) n
Are the 47 St SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

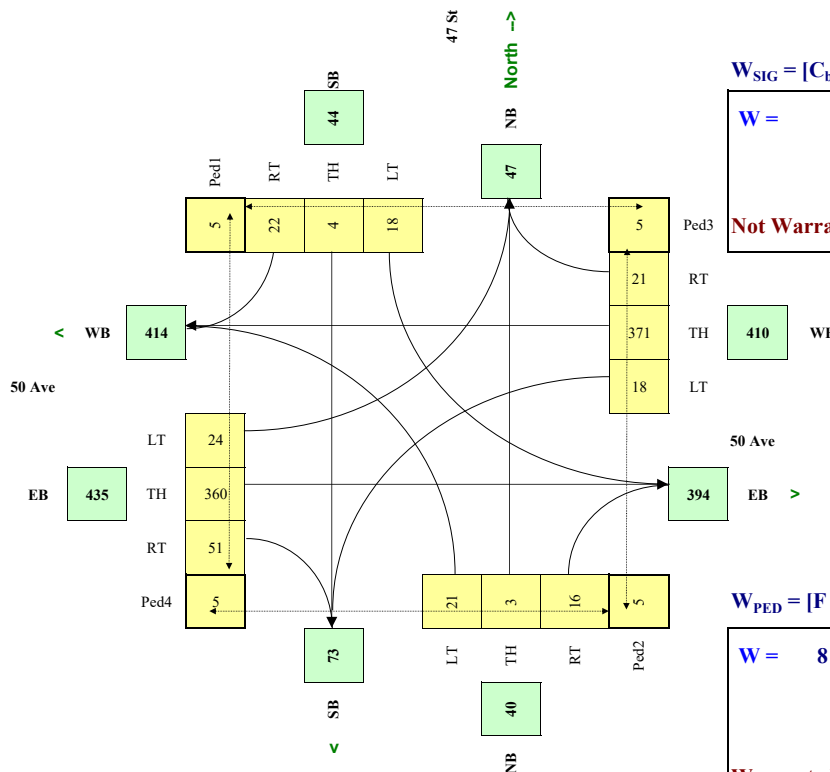
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
47 St	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	126	16	96	106	25	131	109	2228	123	142	2162	303	30	30	30	30
Total (6-hour peak)	126	16	96	106	25	131	109	2,228	123	142	2,162	303	30	30	30	30
Average (6-hour peak)	21	3	16	18	4	22	18	371	21	24	360	51	5	5	5	5

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	53	43	10
		Veh	Ped

Not Warranted - Vs<75

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	8

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	45 St	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	Existing Background 6 Hr Total Volumes	Analysis Date:	2025 May 07, Wed
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB					1					1				Left Turn	1,650
50 Ave EB					1					1				Through	1,800
45 St NB										0				Right Turn	1,500
45 St SB					1					1					

Are the 45 St SB right turns significantly impeded by through movements? (y/n)
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)

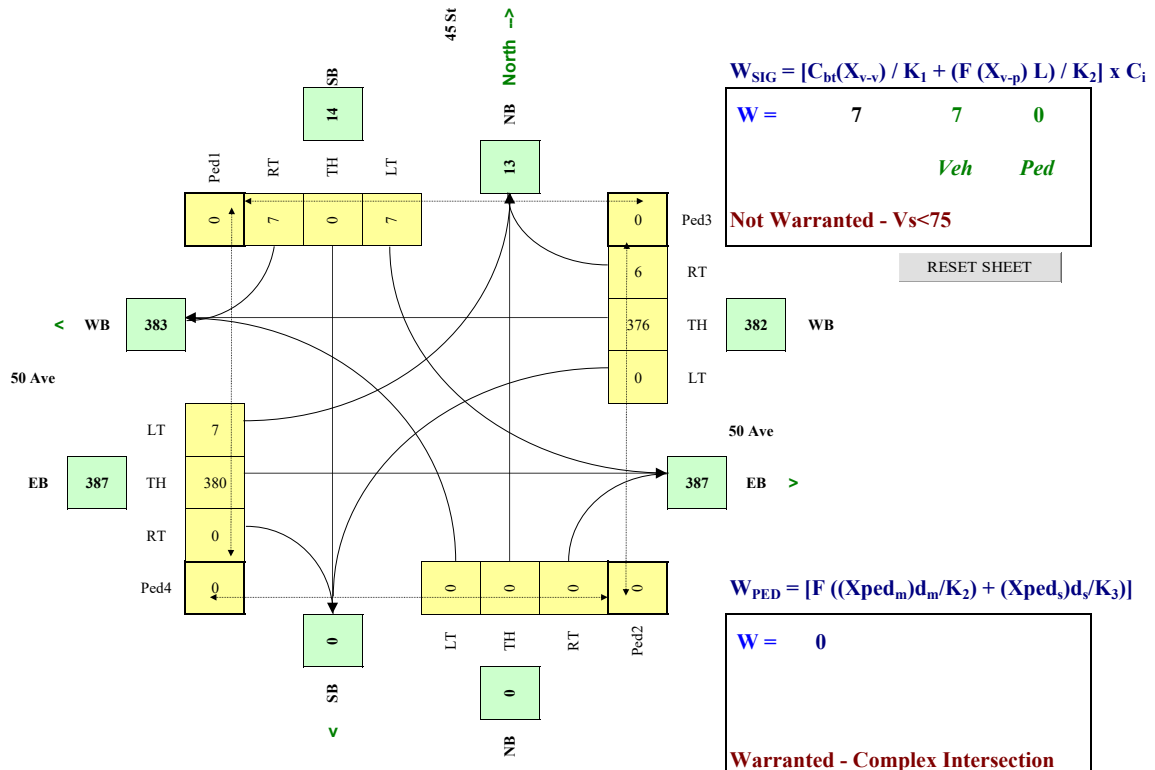
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
45 St	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
6 Hour Average	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
	0	0	0	42	0	39	0	2258	34	42	2279	0				
Total (6-hour peak)	0	0	0	42	0	39	0	2,258	34	42	2,279	0	0	0	0	0
Average (6-hour peak)	0	0	0	7	0	7	0	376	6	7	380	0	0	0	0	0
Actual Pedestrian Crossing Distance (m)																

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 St	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	44 Ave	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 St	WB										0					
50 St	EB				1						1					1,650
44 Ave	NB					1					1					1,800
44 Ave	SB		1								1					1,500

Are the 44 Ave NB right turns significantly impeded by through movements? (y/n)

n
n
n
n

Are the 50 St EB right turns significantly impeded by through movements? (y/n)

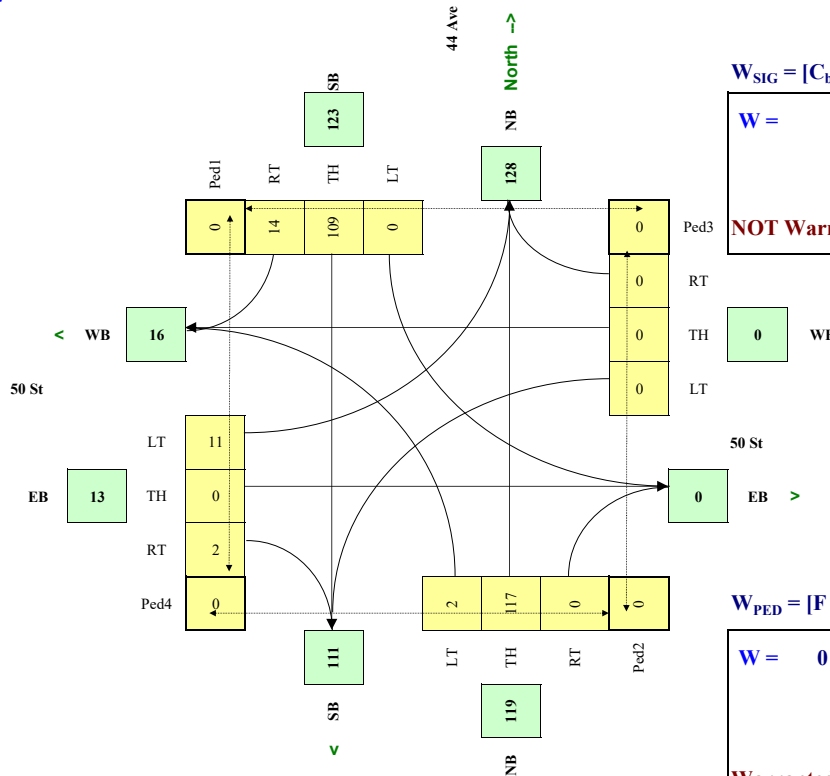
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
44 Ave	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	10	704	0	0	655	83	0	0	0	65	0	10				
Total (6-hour peak)	10	704	0	0	655	83	0	0	0	65	0	10	0	0	0	0
Average (6-hour peak)	2	117	0	0	109	14	0	0	0	11	0	2			0	0
Actual Pedestrian Crossing Distance (m)													15.0	15.0	15.0	15.0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	2	2	0
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 St	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	42 Ave	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		
CHECK SHEET					
for Warrant Calculation Results, please hit 'Page Down'		Analysis Date: 2025 May 07, Wed			
		Count Date: 2025 Mar 19, Wed			
		Date Entry Format: (yyyy-mm-dd)			

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 St	WB				1						1			
50 St	EB										0			
42 Ave	NB				1						1			
42 Ave	SB				1						1			

Are the 42 Ave NB right turns significantly impeded by through movements? (y/n) n
Are the 42 Ave SB right turns significantly impeded by through movements? (y/n) n
Are the 50 St WB right turns significantly impeded by through movements? (y/n) n

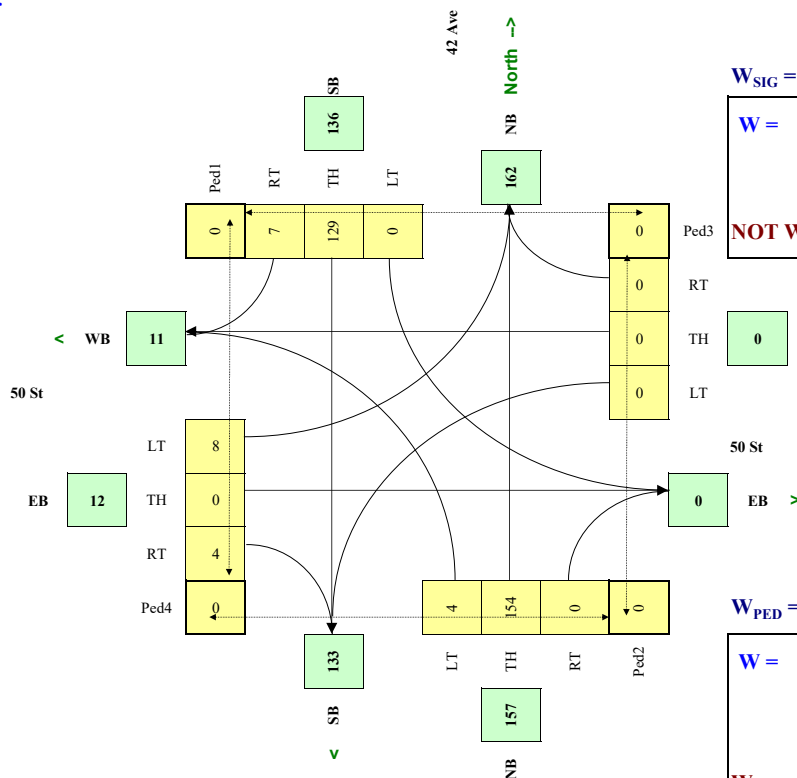
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
42 Ave	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	23	921	0	0	773	43	0	0	0	48	0	26				
Total (6-hour peak)	23	921	0	0	773	43	0	0	0	48	0	26	0	0	0	0
Average (6-hour peak)	4	154	0	0	129	7	0	0	0	8	0	4	0	0	0	0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	3	3	0
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W = 0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	Westview Dr.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB			1				1				1				Left Turn	1,650
50 Ave EB			1				1				1				Through	1,800
Westview Dr. NB					1						1				Right Turn	1,500
Westview Dr. SB					1						1					

Are the Westview Dr. NB right turns significantly impeded by through movements? (y/n) n
Are the Westview Dr. SB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
Westview Dr.	NS	50	5.0%	n	0.0

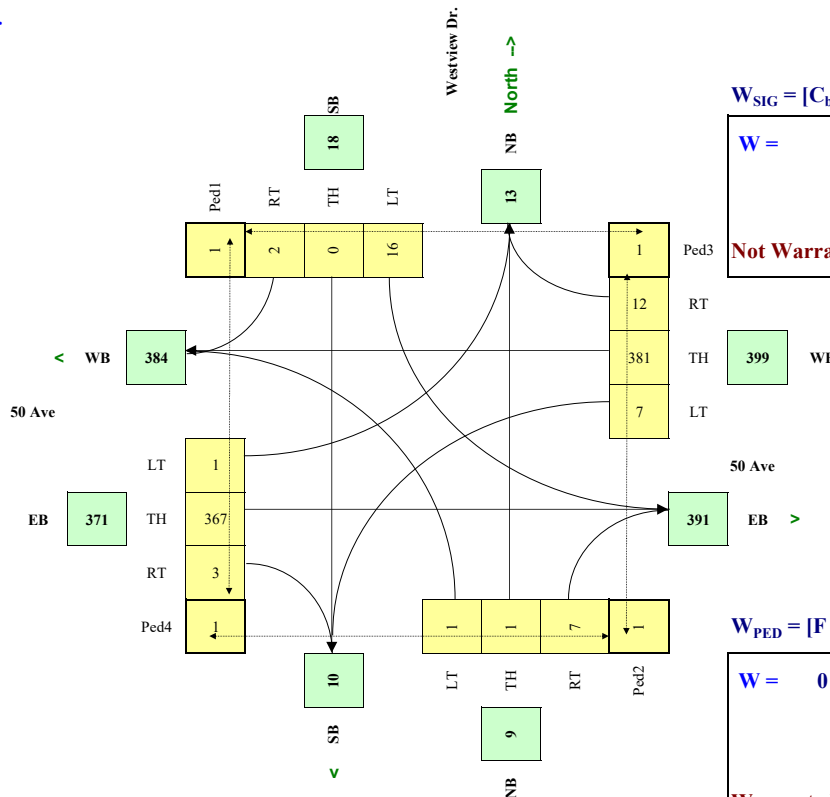
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	5	3	44	98	0	10	39	2287	70	5	2202	18	6	6	6	6
Total (6-hour peak)	5	3	44	98	0	10	39	2,287	70	5	2,202	18	6	6	6	6
Average (6-hour peak)	1	1	7	16	0	2	7	381	12	1	367	3	1	1	1	1

Actual Pedestrian Crossing Distance (m)

20.0	20.0	14.0	14.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	15	13	2
		Veh	Ped

Not Warranted - $V_s < 75$

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	52 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 Ave WB	WB				1						1			
50 Ave EB	EB				1						1			
52 St. NB	NB				1						1			
52 St. SB	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

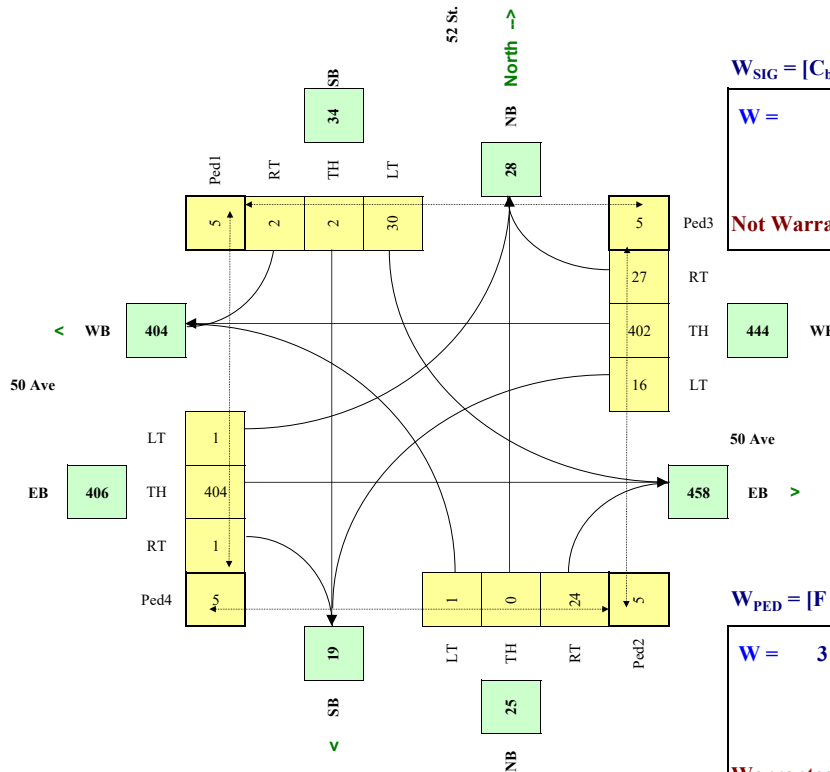
Are the 52 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 52 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
52 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(y/n)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	5	0	144	178	13	10	93	2410	160	5	2423	5	30	30	30	30
Total (6-hour peak)	5	0	144	178	13	10	93	2,410	160	5	2,423	5	30	30	30	30
Average (6-hour peak)	1	0	24	30	2	2	16	402	27	1	404	1	5	5	5	5
Actual Pedestrian Crossing Distance (m)													18.0	18.0	14.0	14.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	39	28	11
		Veh	Ped
Not Warranted - Vs<75			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	3
Warranted - Complex Intersection	



Main Street (name) Side Street (name) Quadrant / Int # for Warrant Calculation Results, please hit 'Page Down'	50 Ave	Direction (EW or NS) Direction (EW or NS) Comments	EW	Road Authority:	TEC
	51 St.		NS	City:	Calmar
			20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
			Date Entry Format:	(yyyy-mm-dd)	

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (n)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 Ave	WB				1						1			
50 Ave	EB				1						1			
51 St.	NB				1						1			
51 St.	SB										0			

Saturation Flow Rates (if not default) (vphpl)		Default Saturation Flow Rates (vphpl)
Left Turn		1,650
Through		1,800
Right Turn		1,500

Are the 51 St. NB right turns significantly impeded by through movements? (y/n)

Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)

Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)

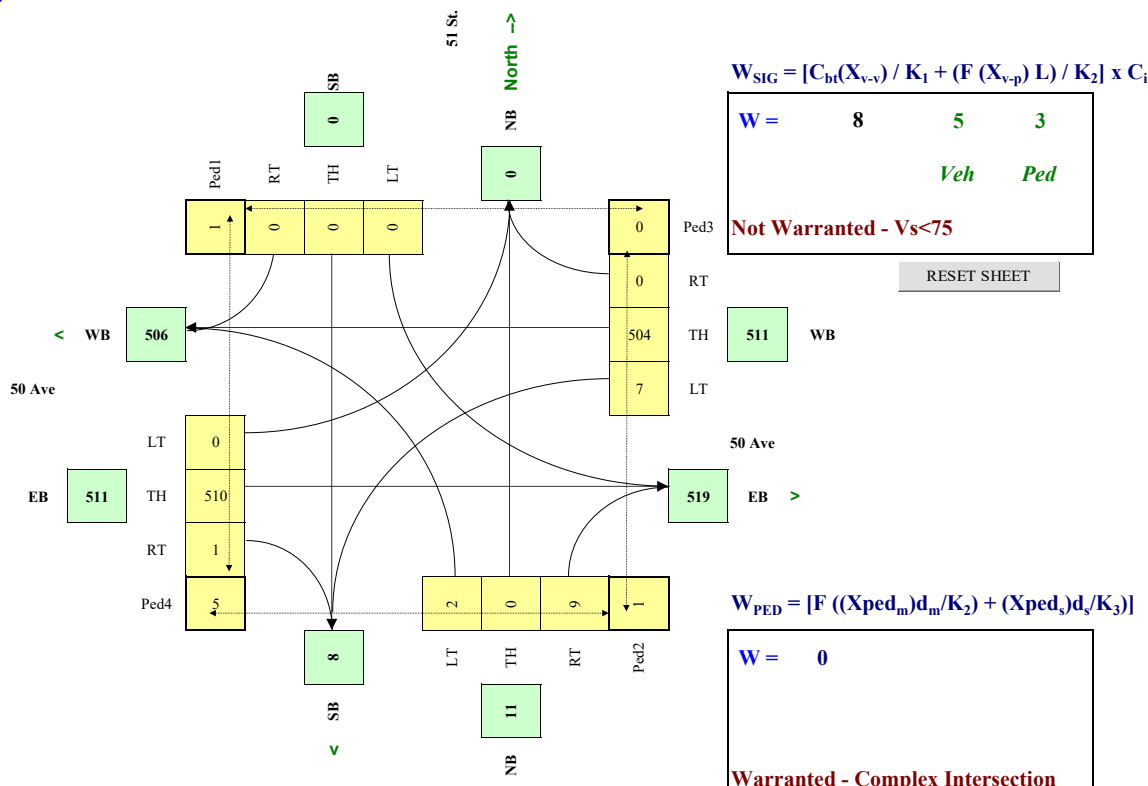
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
51 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	11	0	54	0	0	0	40	3023	0	0	3058	8	6	6		30
Total (6-hour peak)	11	0	54	0	0	0	40	3,023	0	0	3,058	8	6	6	0	30
Average (6-hour peak)	2	0	9	0	0	0	7	504	0	0	510	1	1	1	0	5
Actual Pedestrian Crossing Distance (m)													20.0	20.0		14.0

0	0	510	1
Actual Pedestrian Crossing Distance (m)			

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	50 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Background Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 Ave WB	WB	1				1					1			
50 Ave EB	EB	1				1					1			
50 St. NB	NB				1						1			
50 St. SB	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 50 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 50 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

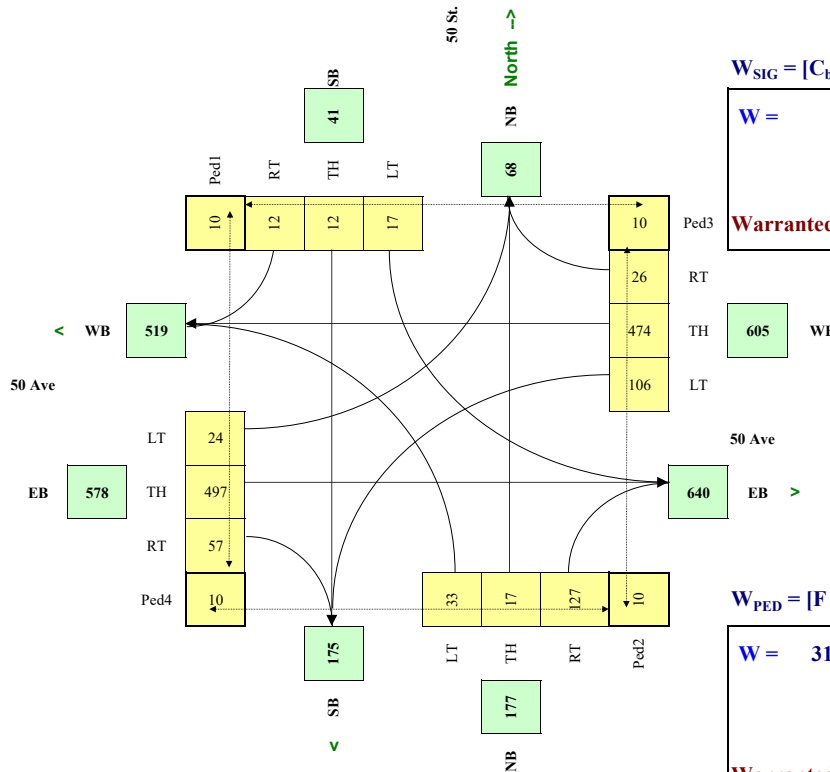
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
50 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours																	
Traffic Input																	
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	Ped1 NS W Side	Ped2 NS E Side
6 Hour Average																	
	199	104	759	101	74	71	633	2842	156	145	2981	341	60	60	60	60	60
Total (6-hour peak)	199	104	759	101	74	71	633	2,842	156	145	2,981	341	60	60	60	60	60
Average (6-hour peak)	33	17	127	17	12	12	106	474	26	24	497	57	10	10	10	10	10

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	169	136	33
		Veh	Ped
Warranted			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	31
Warranted - Complex Intersection	



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	49 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB					1					1				Left Turn	1,650
50 Ave EB					1					1				Through	1,800
49 St. NB					1					1				Right Turn	1,500
49 St. SB					1					1					

Are the 49 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 49 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

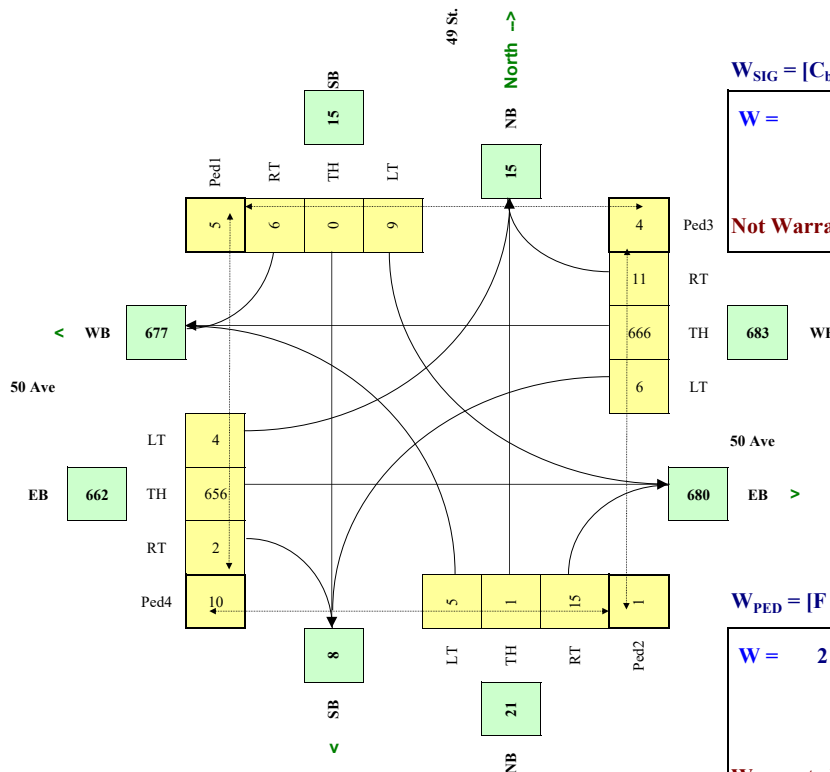
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
49 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(y/n)	2,400
Central Business District	(y/n)	y

Set Peak Hours																
Traffic Input																
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	Ped1 NS W Side	Ped2 NS E Side	Ped3 EW N Side	Ped4 EW S Side
6 Hour Average																
	32	3	90	52	0	35	35	3997	66	23	3936	12	30	8	26	61
Total (6-hour peak)	32	3	90	52	0	35	35	3,997	66	23	3,936	12	30	8	26	61
Average (6-hour peak)	5	1	15	9	0	6	6	666	11	4	656	2	5	1	4	10

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	37	25	12
		Veh	Ped
Not Warranted - $V_s < 75$			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	2
Warranted - Complex Intersection	



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	47 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments Existing Background Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase
50 Ave	WB				1					1			
50 Ave	EB				1					1			
47 St.	NB				1					1			
47 St.	SB				1					1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

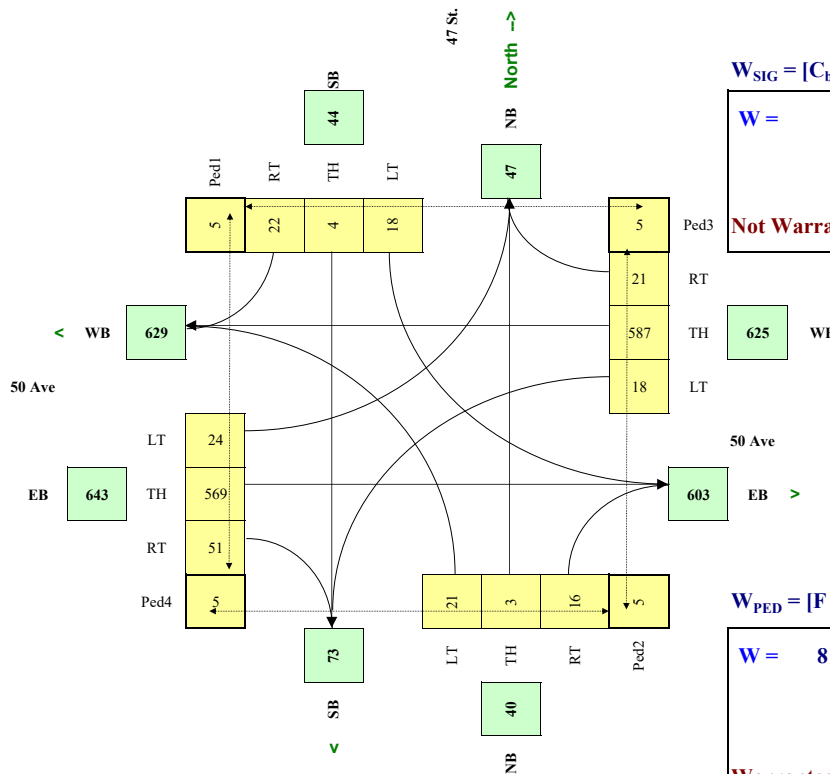
Are the 47 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 47 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	y

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
47 St.	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	126	16	96	106	25	131	109	3519	123	142	3415	303	30	30	30	30
Total (6-hour peak)	126	16	96	106	25	131	109	3,519	123	142	3,415	303	30	30	30	30
Average (6-hour peak)	21	3	16	18	4	22	18	587	21	24	569	51	5	5	5	5
Actual Pedestrian Crossing Distance (m)													18.0	18.0	14.0	14.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	85	69	16
		Veh	Ped
Not Warranted - Vs<75			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	8
Warranted - Complex Intersection	



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	45 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Background Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase
50 Ave WB	WB				1						1			
50 Ave EB	EB				1						1			
45 St. NB	NB										0			
45 St. SB	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 45 St. SB right turns significantly impeded by through movements? (y/n)
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)

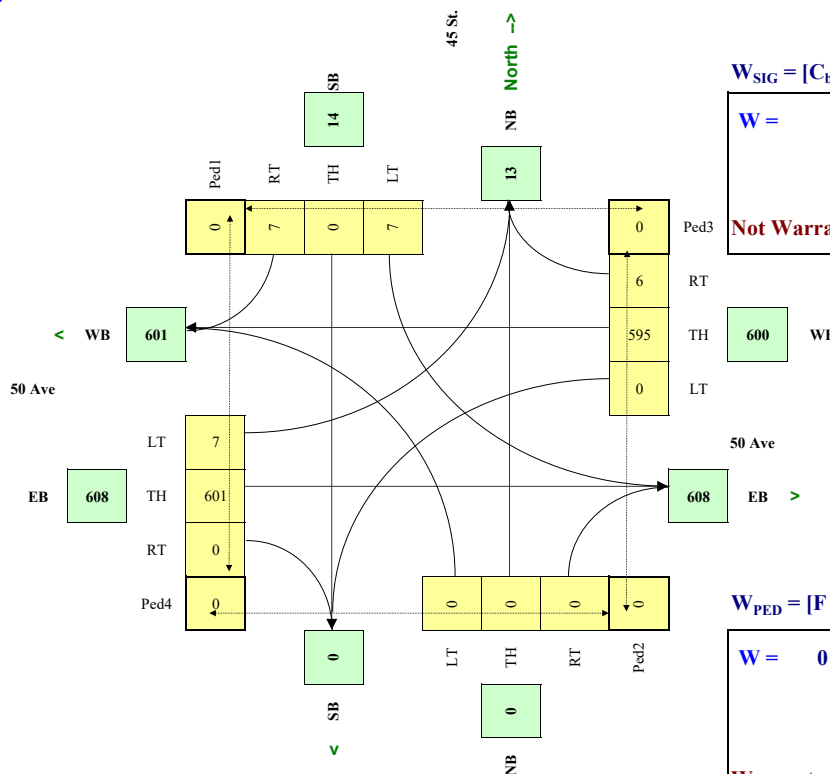
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
45 St.	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	0	0	0	42	0	39	0	3568	34	42	3603	0				
Total (6-hour peak)	0	0	0	42	0	39	0	3,568	34	42	3,603	0	0	0	0	0
Average (6-hour peak)	0	0	0	7	0	7	0	595	6	7	601	0	0	0	0	0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	11	11	0
		Veh	Ped

Not Warranted - Vs<75

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 St	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	44 Ave	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 St	WB				1						1					1,650
50 St	EB				1						1					1,800
44 Ave	NB				1						1					1,500
44 Ave	SB				1						1					

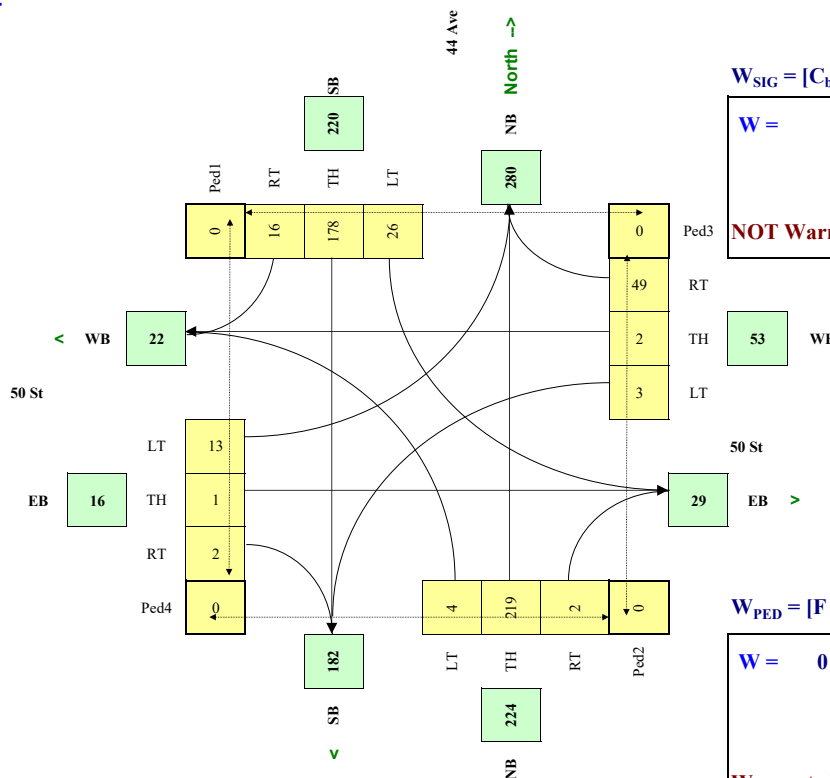
Are the 44 Ave NB right turns significantly impeded by through movements? (y/n) n
Are the 44 Ave SB right turns significantly impeded by through movements? (y/n) n
Are the 50 St WB right turns significantly impeded by through movements? (y/n) n
Are the 50 St EB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
44 Ave	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	21	1311	10	157	1066	95	15	13	292	75	8	10				
Total (6-hour peak)	21	1,311	10	157	1,066	95	15	13	292	75	8	10	0	0	0	0
Average (6-hour peak)	4	219	2	26	178	16	3	2	49	13	1	2	0	0	0	0
Actual Pedestrian Crossing Distance (m)													15.0	15.0	15.0	15.0

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	19	19	0
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 St	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	42 Ave	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 St	WB										0					
50 St	EB				1						1					1,650
42 Ave	NB				1						1					1,800
42 Ave	SB				1						1					1,500

Are the 42 Ave NB right turns significantly impeded by through movements? (y/n) n
Are the 42 Ave SB right turns significantly impeded by through movements? (y/n) n
Are the 50 St EB right turns significantly impeded by through movements? (y/n) n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 St	EW	50	8.0%	n	0.0
42 Ave	NS	50	5.0%	n	0.0

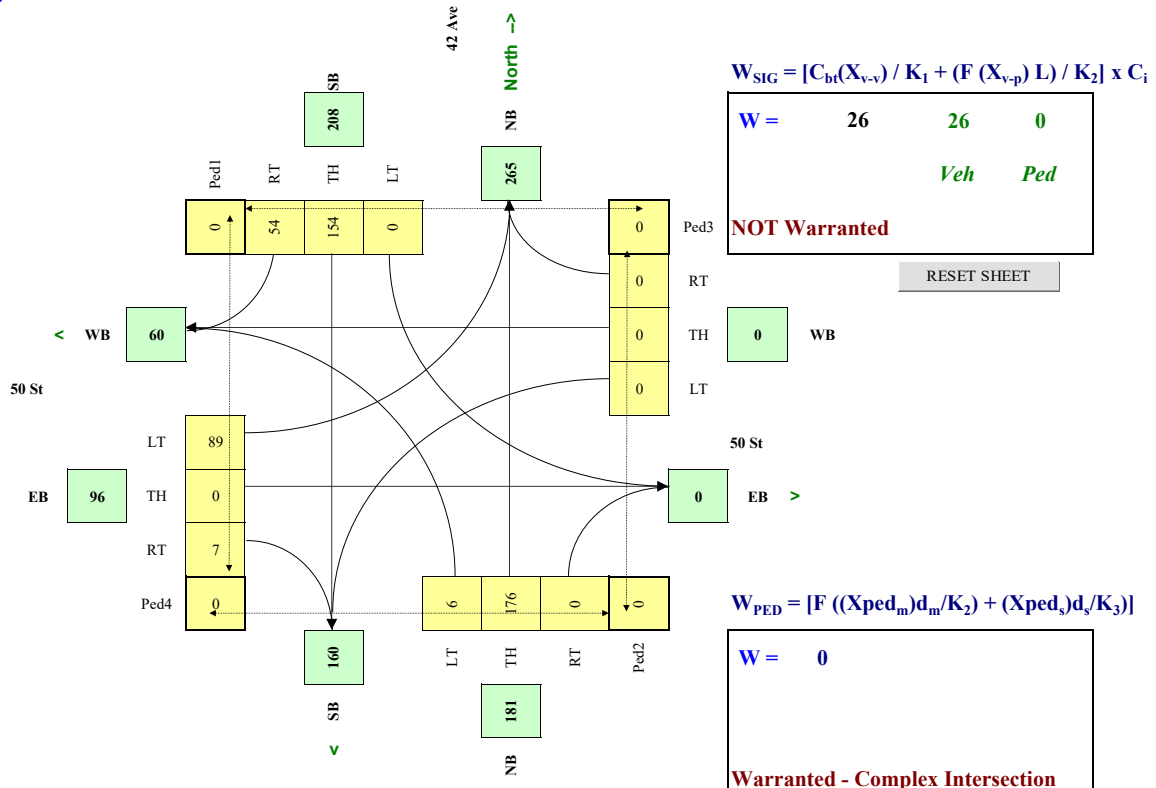
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours														Ped1	Ped2	Ped3	Ped4
Traffic Input														NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT		W Side	E Side	N Side	S Side
6 Hour Average																	
	33	1053	0	0	921	324	0	0	0	536	0	41					
Total (6-hour peak)	33	1,053	0	0	921	324	0	0	0	536	0	41		0	0	0	0
Average (6-hour peak)	6	176	0	0	154	54	0	0	0	89	0	7		0	0	0	0

Actual Pedestrian Crossing Distance (m)

15.0	15.0	15.0	15.0

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	Westview Dr.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB	WB	1		1			1				1				Left Turn	1,650
50 Ave EB	EB	1	1								1				Through	1,800
Westview Dr. NB	NB				1						1				Right Turn	1,500
Westview Dr. SB	SB				1						1					

Are the Westview Dr. NB right turns significantly impeded by through movements? (y/n) n
Are the Westview Dr. SB right turns significantly impeded by through movements? (y/n) n

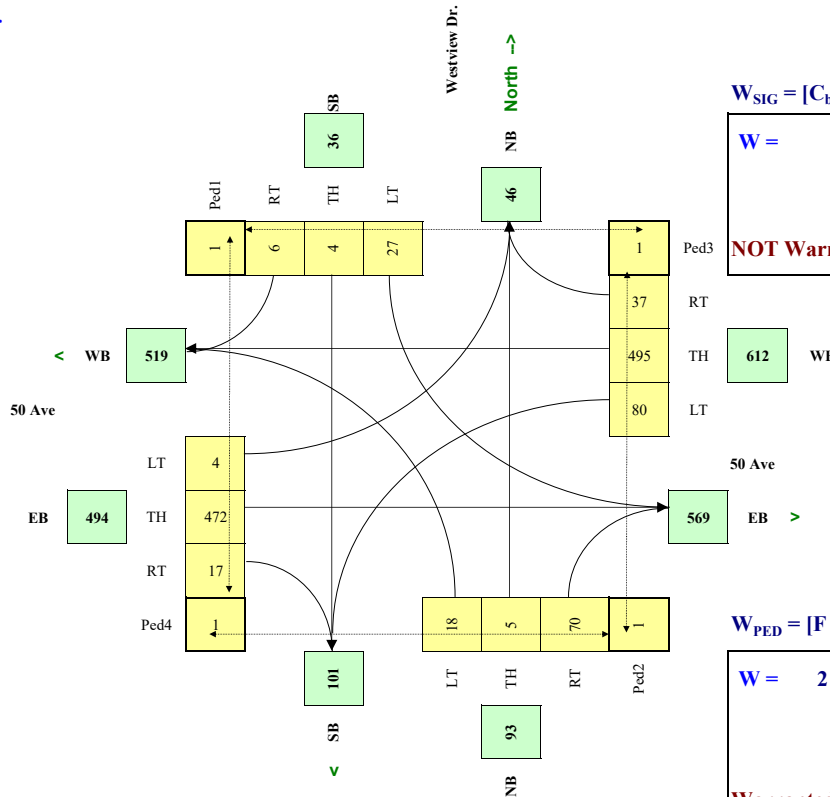
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
Westview Dr.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours																
Traffic Input																
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	Ped1 NS W Side	Ped2 NS E Side	Ped3 EW N Side	Ped4 EW S Side
6 Hour Average																
	109	28	422	161	21	36	482	2,968	220	26	2831	104	6	6	6	6
Total (6-hour peak)	109	28	422	161	21	36	482	2,968	220	26	2,831	104	6	6	6	6
Average (6-hour peak)	18	5	70	27	4	6	80	495	37	4	472	17	1	1	1	1

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	83	80	3
		Veh	Ped

NOT Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W = 2

Warranted - Complex Intersection



TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	Commercial Access	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Total Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB	WB			1		1					2				Left Turn	1,650
50 Ave EB	EB		1	1							2				Through	1,800
Commercial Access NB	NB				1						1				Right Turn	1,500
Commercial Access SB	SB										1					

Are the Commercial Access NB right turns significantly impeded by through movements? (y/n) n
Are the Commercial Access SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n

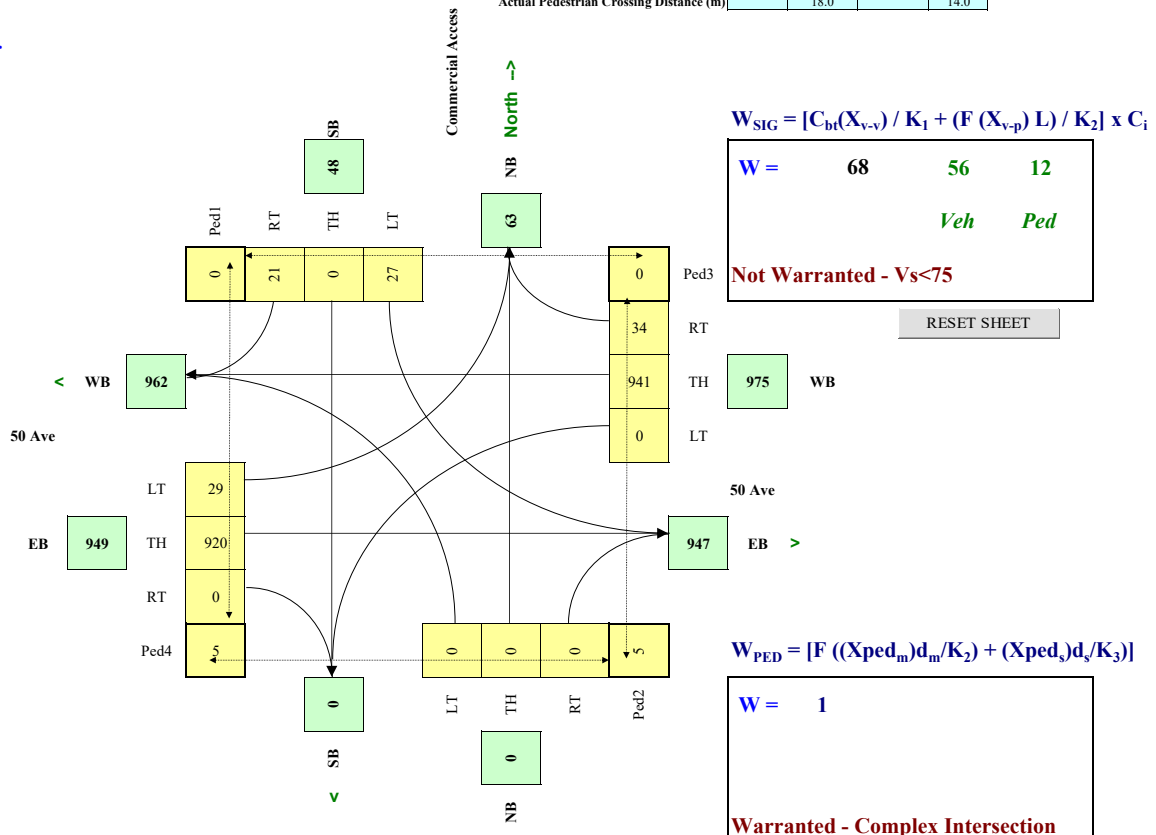
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	y

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
Commercial Access	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	0	0	0	161	0	128	0	5,643	205	175	5,520	0	0	30	0	30
Total (6-hour peak)	0	0	0	161	0	128	0	5,643	205	175	5,520	0	0	30	0	30
Average (6-hour peak)	0	0	0	27	0	21	0	941	34	29	920	0	0	5	0	5

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements





for Warrant Calculation Results, please hit 'Page Down'	Main Street (name)	50 Ave	Comments 20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Direction (EW or NS)	EW	Road Authority:	TEC
	Side Street (name)	52 St.		Direction (EW or NS)	NS	City:	Calmar
	Quadrant / Int #			Analysis Date:	2025 May 07, Wed		
	CHECK SHEET	Count Date:		TEC 2024			
	Date Entry Format:	(yyyy-mm-dd)					

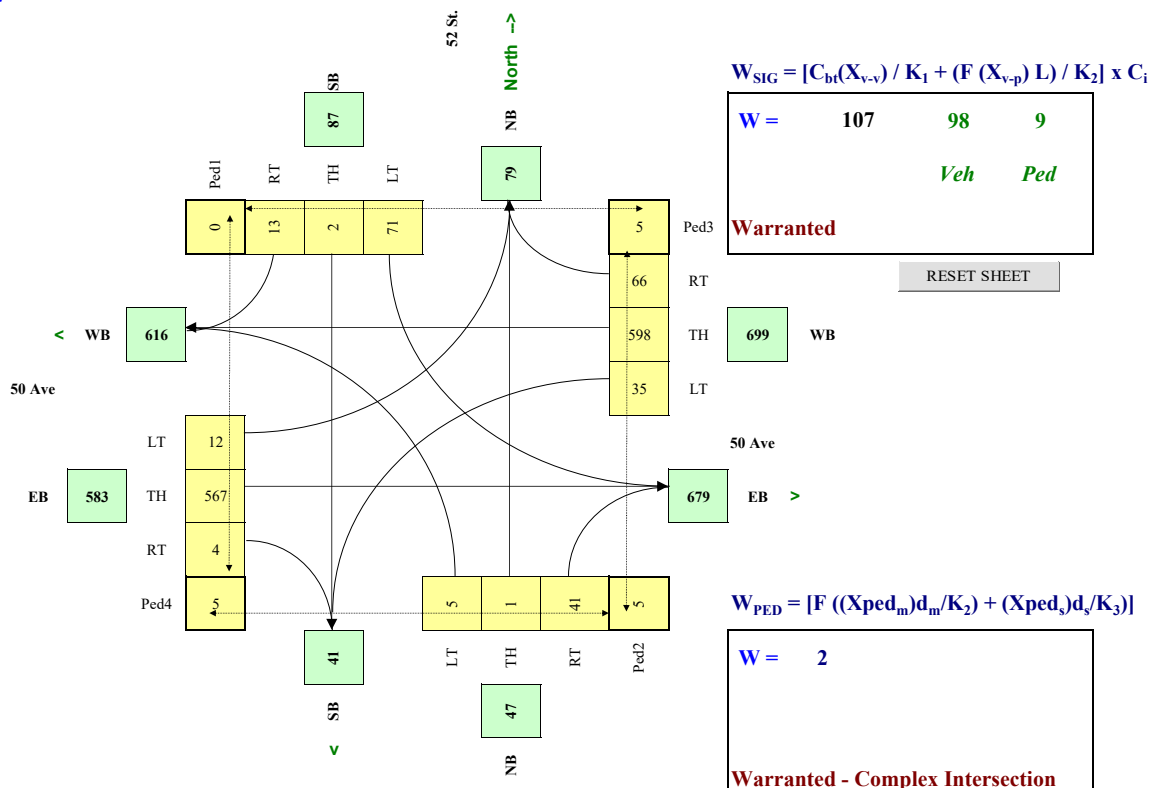
Are the 52 St. NB right turns significantly impeded by through movements?	(y/n)	n
Are the 52 St. SB right turns significantly impeded by through movements?	(y/n)	n
Are the 50 Ave WB right turns significantly impeded by through movements?	(y/n)	n
Are the 50 Ave EB right turns significantly impeded by through movements?	(y/n)	n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	31	5	243	426	13	80	209	3586	397	72	3403	23		30	30	30
Total (6-hour peak)	31	5	243	426	13	80	209	3,586	397	72	3,403	23	0	30	30	30
Average (6-hour peak)	5	1	41	71	2	13	35	598	66	12	567	4	0	5	5	5
Actual Pedestrian Crossing Distance (m)															14.0	14.0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	51 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Total Note: The 6-hour traffic is calculated by (AM+PM) x a factor		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actuated Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB					1						1				Left Turn	1,650
50 Ave EB					1						1				Through	1,800
51 St. NB					1						1				Right Turn	1,500
51 St. SB											0					

Are the 51 St. NB right turns significantly impeded by through movements? (y/n)

n

Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)

n

Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)

n

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
51 St.	NS	50	5.0%	n	0.0

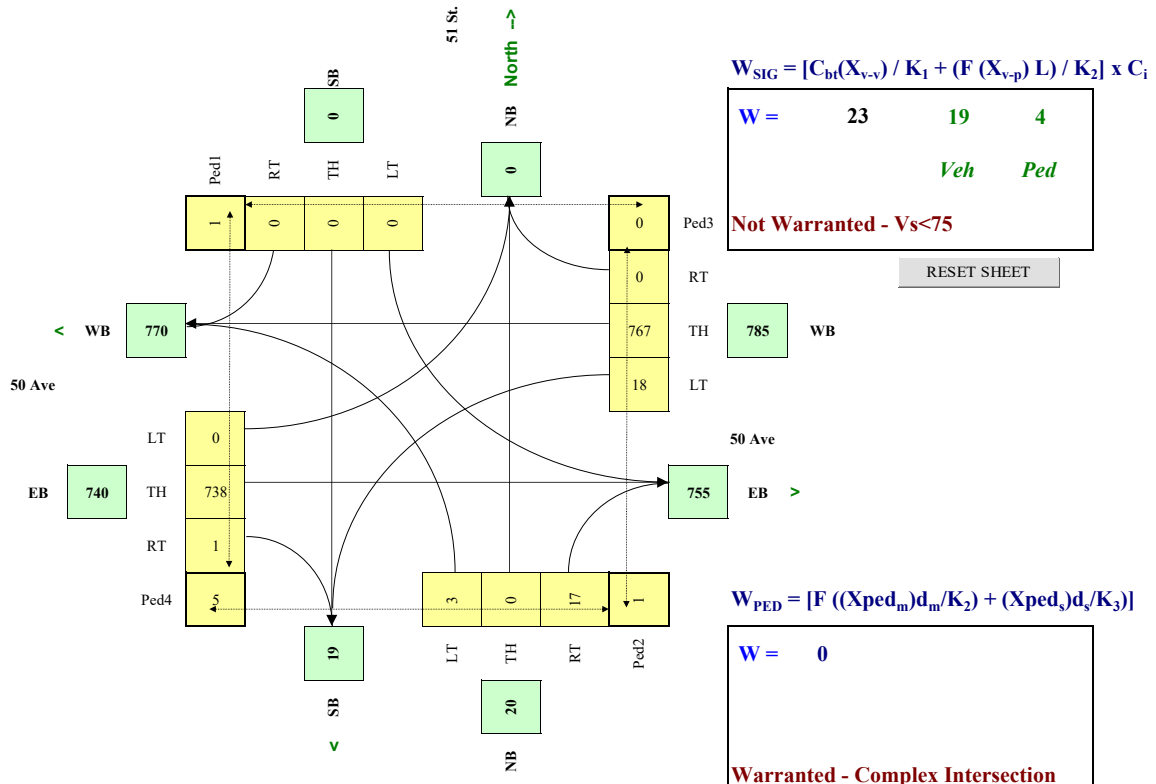
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)		2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	16	0	102	0	0	0	105	4604	0	0	4430	8	6	6		30
Total (6-hour peak)	16	0	102	0	0	0	105	4,604	0	0	4,430	8	6	6	0	30
Average (6-hour peak)	3	0	17	0	0	0	18	767	0	0	738	1	1	1	0	5

Actual Pedestrian Crossing Distance (m)

20.0	20.0		14.0

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	50 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Total Note: The 6-hour traffic is calculated by (AM+PM) x 2.73		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	TEC 2024
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase
50 Ave WB	WB	1				1					1			
50 Ave EB	EB	1				1					1			
50 St. NB	NB				1						1			
50 St. SB	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 50 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 50 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

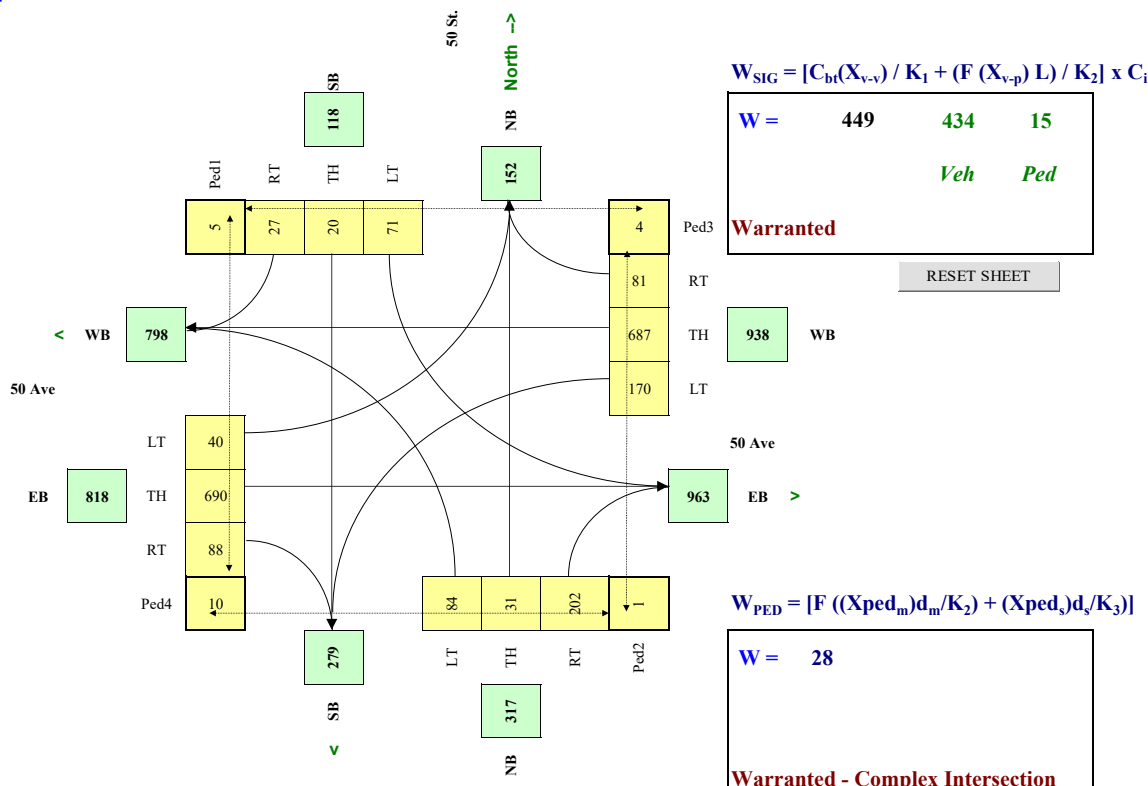
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
50 St.	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	502	186	1212	426	120	164	1021	4120	486	238	4141	530	30	8	26	61
Total (6-hour peak)	502	186	1,212	426	120	164	1,021	4,120	486	238	4,141	530	30	8	26	61
Average (6-hour peak)	84	31	202	71	20	27	170	687	81	40	690	88	5	1	4	10

Actual Pedestrian Crossing Distance (m)

20.0	20.0	14.0	14.0

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	49 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments 20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours		Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
for Warrant Calculation Results, please hit 'Page Down'				Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase
50 Ave WB	WB				1						1			
50 Ave EB	EB				1						1			
49 St. NB	NB				1						1			
49 St. SB	SB				1						1			

Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
Left Turn	1,650
Through	1,800
Right Turn	1,500

Are the 49 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 49 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

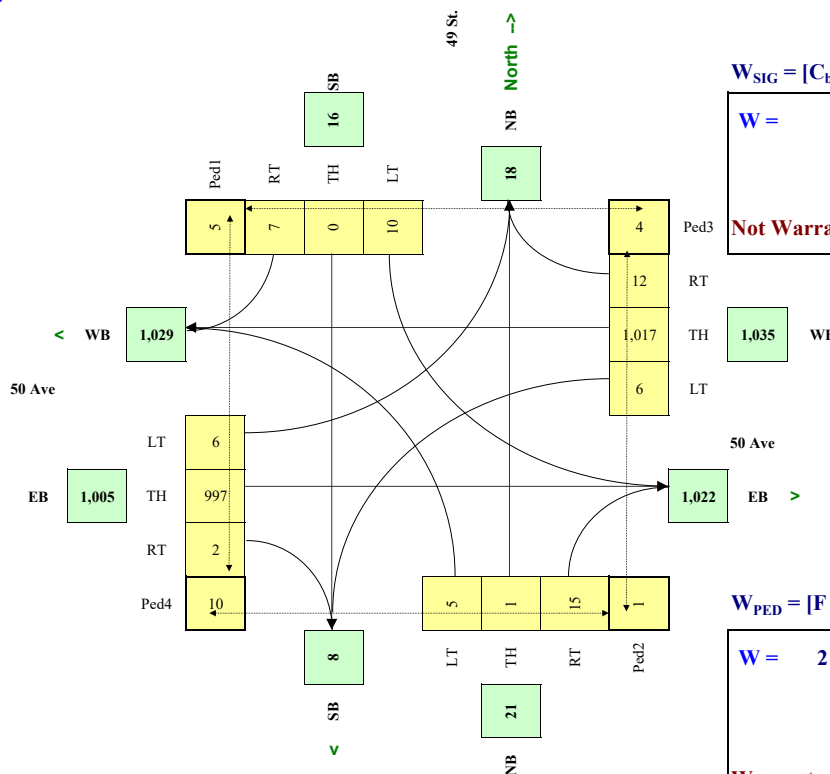
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	y
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	y

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
49 St.	NS	50	5.0%	n	0.0

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	32	3	90	58	0	40	35	6101	72	35	5982	12	30	8	26	61
Total (6-hour peak)	32	3	90	58	0	40	35	6,101	72	35	5,982	12	30	8	26	61
Average (6-hour peak)	5	1	15	10	0	7	6	1,017	12	6	997	2	5	1	4	10

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	65	47	18
		Veh	Ped
Not Warranted - Vs<75			

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	2
Warranted - Complex Intersection	

TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS) Direction (EW or NS) 20 Year Total Note: The 6-hour traffic is calculated by (AM+PM) x 2.73	EW	Road Authority:	TEC
Side Street (name)	47 St.		NS	City:	Calmar
Quadrant / Int #				Analysis Date:	2025 May 07, Wed
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET			Count Date:	TEC 2024
				Date Entry Format:	(yyyy-mm-dd)

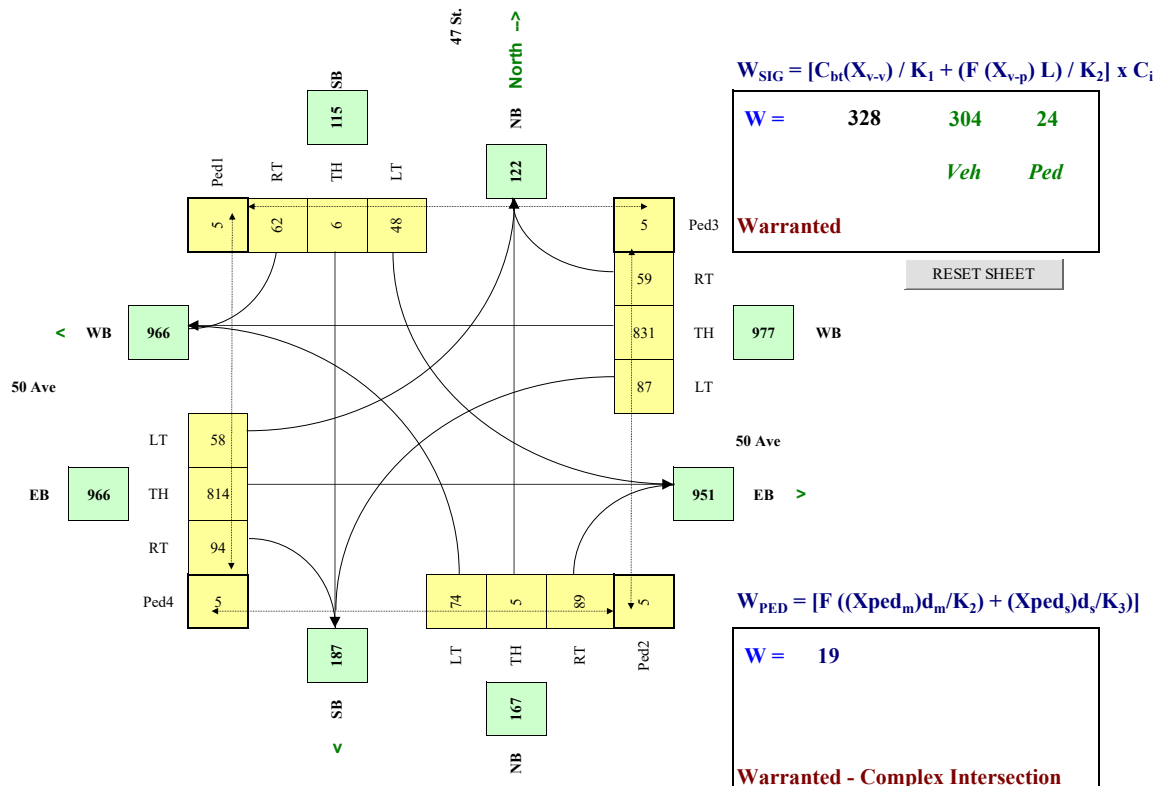
Lane Configuration		Excl LT	Th & LT	Through	Th+RT-LT	Th & RT	Excl RT	RT Channelization (y/n)	UpStream Signal (m)	# of 'Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave	WB	1				1			400	1				Left Turn	1,650
50 Ave	EB	1				1				1				Through	1,800
47 St.	NB				1									Right Turn	1,500
47 St.	SB				1					1					
Are the 47 St. NB right turns significantly impeded by through movements? (y/n)								n							
Are the 47 St. SB right turns significantly impeded by through movements? (y/n)								n							
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n)								n							
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n)								n							
												Demographics			
												Elem. School/Mobility Challenged	(y/n)	n	
												Senior's Complex	(y/n)	n	

Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
47 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	2,400
Central Business District	(y/n)	y

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input	NB			SB			WB			EB			NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	442	27	532	287	35	369	519	4985	355	349	4884	565	30	30	30	30
Total (6-hour peak)	442	27	532	287	35	369	519	4,985	355	349	4,884	565	30	30	30	30
Average (6-hour peak)	74	5	89	48	6	62	87	831	59	58	814	94	5	5	5	5
Actual Pedestrian Crossing Distance (m)													18.0	18.0	14.0	14.0

Average 6-hour Peak Turning Movements





TEC - Traffic Signal & Pedestrian Signal Head Warrant Analysis

Main Street (name)	50 Ave	Direction (EW or NS)	EW	Road Authority:	TEC
Side Street (name)	45 St.	Direction (EW or NS)	NS	City:	Calmar
Quadrant / Int #		Comments	20 Year Total Note: Total 6 Hr estimates based on factor of 6 hr existing count and AM+PM peak hours	Analysis Date:	2025 May 07, Wed
	CHECK SHEET			Count Date:	2025 Mar 19, Wed
				Date Entry Format:	(yyyy-mm-dd)

for Warrant Calculation Results, please hit 'Page Down'

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	RT	Channelization (y/n)	UpStream Signal (m)	# of Thru Lanes	LT Phase Type	RTOR Allowed (y/n)	Actual Thru Phase	Saturation Flow Rates (if not default) (vphpl)	Default Saturation Flow Rates (vphpl)
50 Ave WB	WB	1				1					1				Left Turn	1,650
50 Ave EB	EB	1				1					1				Through	1,800
45 St. NB	NB				1						1				Right Turn	1,500
45 St. SB	SB										1					

Are the 45 St. NB right turns significantly impeded by through movements? (y/n) n
Are the 45 St. SB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave WB right turns significantly impeded by through movements? (y/n) n
Are the 50 Ave EB right turns significantly impeded by through movements? (y/n) n

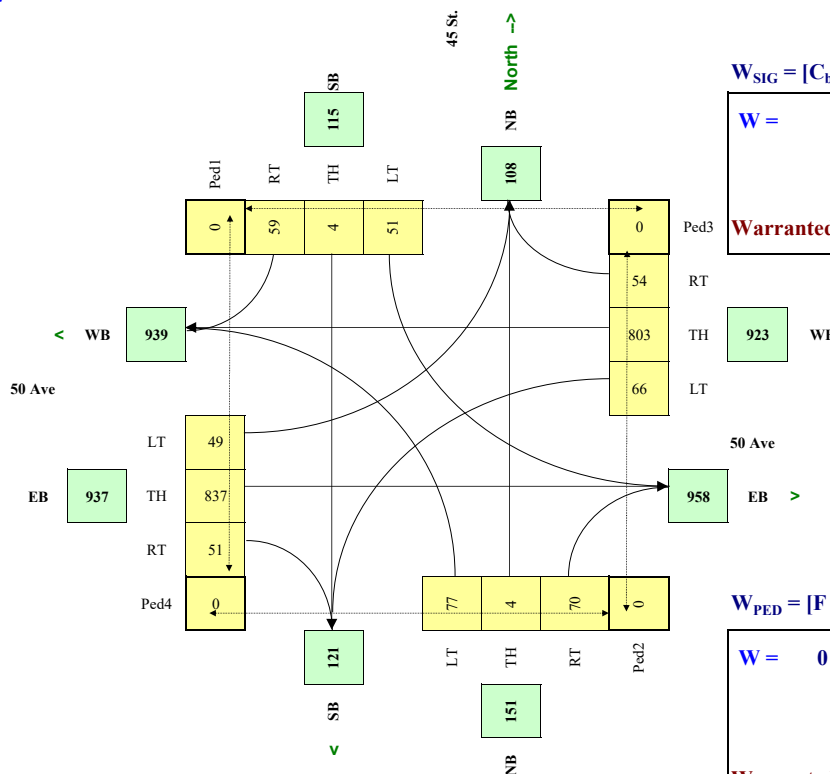
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
50 Ave	EW	50	8.0%	n	0.0
45 St.	NS	50	5.0%	n	0.0

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population (#)	(#)	2,400
Central Business District	(y/n)	n

Set Peak Hours													Ped1	Ped2	Ped3	Ped4
Traffic Input													NS	NS	EW	EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
6 Hour Average																
	459	26	419	307	26	354	393	4818	325	296	5023	304	0	0	0	0
Total (6-hour peak)	459	26	419	307	26	354	393	4,818	325	296	5,023	304	0	0	0	0
Average (6-hour peak)	77	4	70	51	4	59	66	803	54	49	837	51	0	0	0	0

Actual Pedestrian Crossing Distance (m)

Average 6-hour Peak Turning Movements



$$W_{SIG} = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$

W =	295	295	0
		Veh	Ped

Warranted

RESET SHEET

$$W_{PED} = [F((X_{ped_m})d_m/K_2) + (X_{ped_s})d_s/K_3]$$

W =	0

Warranted - Complex Intersection

Right Turn Warrant Assessment

Right turn warrants are only required for unsignalized intersections under provincial jurisdiction. A right turn lane warrant is warranted if all three criteria are met based on ATEC's HGDC:

- Main Road AADT ≥ 1800
- Intersecting Road AADT ≥ 900 , and
- Right Turn AADT ≥ 360 for the movement in question

The right turn warrant criteria and results are summarized in the table below.

Intersecting Road	Direction	Scenario	Main Road AADT	Intersecting Road AADT	Right Turn AADT	RTL Warrant Met
45 St.	EBR	20YrTot	19830	2880	540	YES
	WBR	Existing	8130	290	60	NO
		20YrBG	12750	290	60	NO
		20YrTot	19780	2370	580	YES
47 St.	EBR	Existing	8190	1140	490	YES
		20YrBG	12440	1180	520	YES
		20YrTot	19500	3600	960	YES
	WBR	Existing	8450	880	250	NO
		20YrBG	12900	940	210	NO
		20YrTot	19560	2420	600	YES
49 St.	EBR	Existing	8410	300	20	NO
		20YrBG	13050	300	20	NO
		20YrTot	19680	300	20	NO
	WBR	Existing	8180	310	110	NO
		20YrBG	12820	310	110	NO
		20YrTot	19460	360	120	NO
50 St.	EBR	Existing	8440	2680	350	NO
		20YrBG	12620	3580	580	YES
		20YrTot	19250	6060	900	YES
	WBR	Existing	6920	700	220	NO
		20YrBG	11110	1130	270	NO
		20YrTot	16370	2760	820	YES

Intersecting Road	Direction	Scenario	Main Road AADT	Intersecting Road AADT	Right Turn AADT	RTL Warrant Met
51 St.	EBR	Existing	6790	210	20	NO
		20YrBG	10610	210	20	NO
		20YrTot	15880	410	20	NO
52 St.		Existing	6520	520	20	NO
		20YrBG	9660	480	10	NO
		20YrTot	14760	970	50	NO
	WBR	Existing	5400	800	370	NO
		20YrBG	8670	670	290	NO
		20YrTot	12860	1790	710	YES
RR. 265	EBR	Existing	8260	140	30	NO
		20YrBG	13270	170	30	NO
		20YrTot	20340	170	30	NO
	WBR	Existing	8260	60	10	NO
		20YrBG	13240	40	10	NO
		20YrTot	20310	40	10	NO
Westview Dr.	EBR	Existing	5520	210	40	NO
		20YrBG	8440	210	40	NO
		20YrTot	12610	2100	190	NO
	WBR	Existing	5140	350	130	NO
		20YrBG	8060	350	130	NO
		20YrTot	10820	910	400	YES



Left Turn Warrant Assessment

The need for a left turn was analyzed using TEC's interaction analysis tool for two-lane undivided highways. The left turn assessment sheets are provided in the following pages.



Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	5,140
Minor (intersecting) Road A.A.D.T	210
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	245
Opposing volume (V_{opp}), veh/h:	347
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	40

OUTPUT	Value
Percent left-turns in advancing volume:	0.4%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.0%
Calculated conflicts per hour, veh/h:	0.1

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

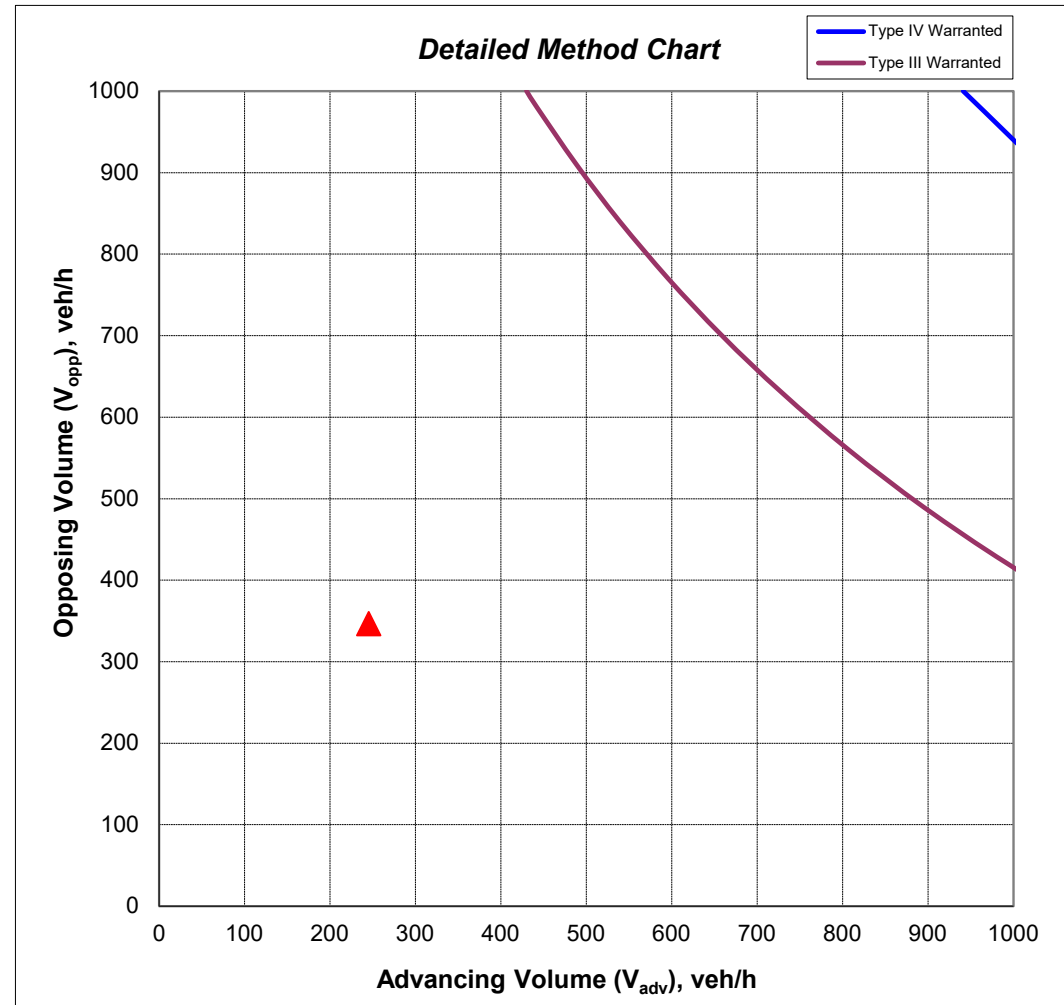
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	5,400
Minor (intersecting) Road A.A.D.T	520
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	246
Opposing volume (V_{opp}), veh/h:	426
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	20

OUTPUT	Value
Percent left-turns in advancing volume:	0.4%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.0%
Calculated conflicts per hour, veh/h:	0.1

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

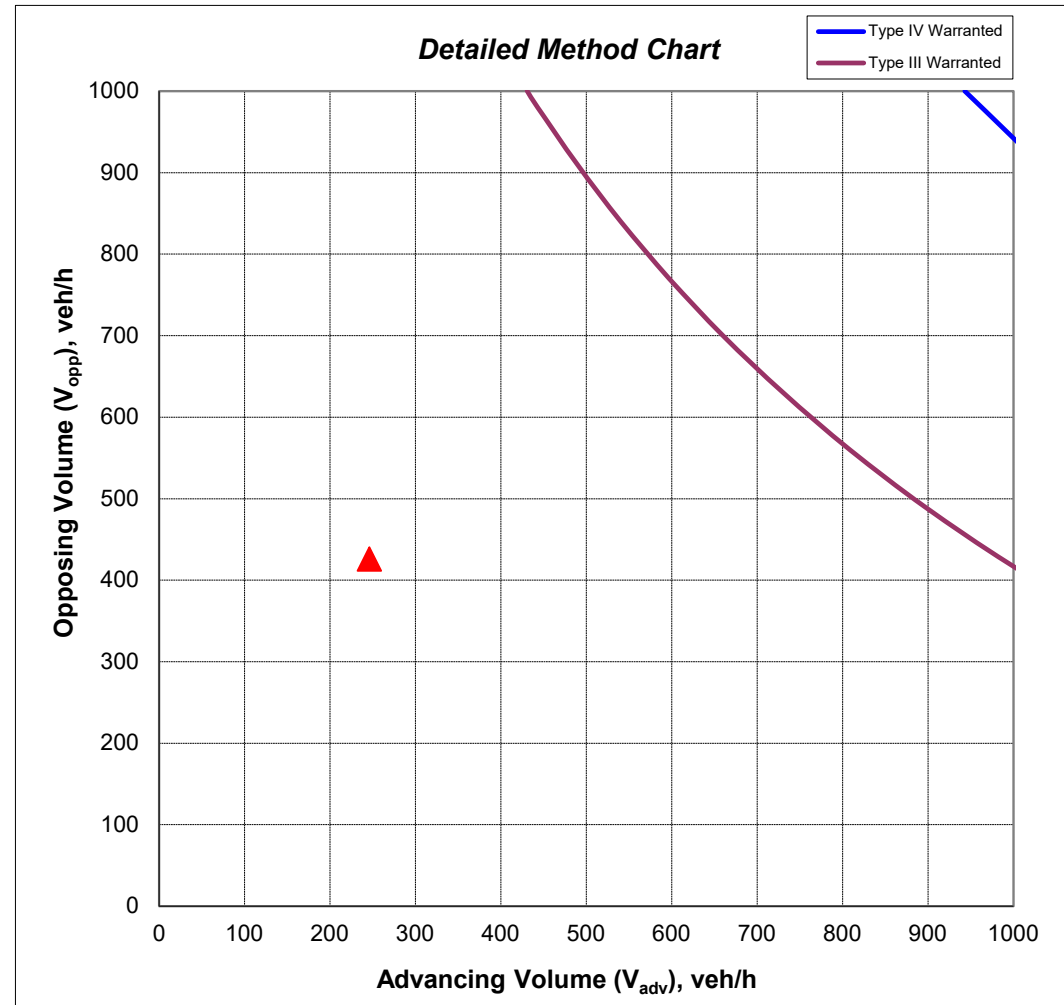
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	6,920
Minor (intersecting) Road A.A.D.T	2,680
Left turn volume (V_{LT}), veh/h:	23
Advancing volume (V_{adv}), veh/h:	310
Opposing volume (V_{opp}), veh/h:	530
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	350

OUTPUT	Value
Percent left-turns in advancing volume:	7.4%
Percent trucks in left turn volume:	8.7%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.5%
Calculated conflicts per hour, veh/h:	4.6

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

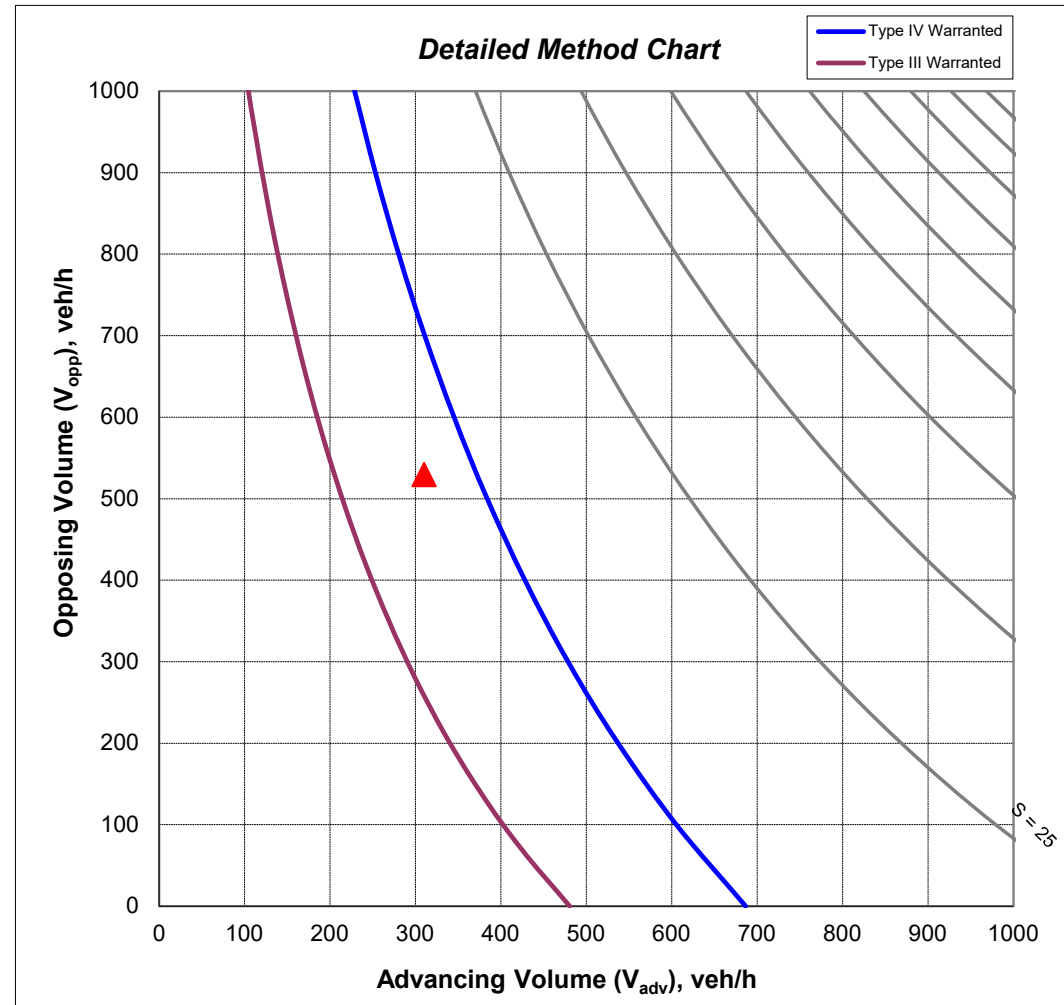
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,180
Minor (intersecting) Road A.A.D.T	300
Left turn volume (V_{LT}), veh/h:	7
Advancing volume (V_{adv}), veh/h:	332
Opposing volume (V_{opp}), veh/h:	565
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	20

OUTPUT	Value
Percent left-turns in advancing volume:	2.1%
Percent trucks in left turn volume:	14.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.6%
Calculated conflicts per hour, veh/h:	1.8

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

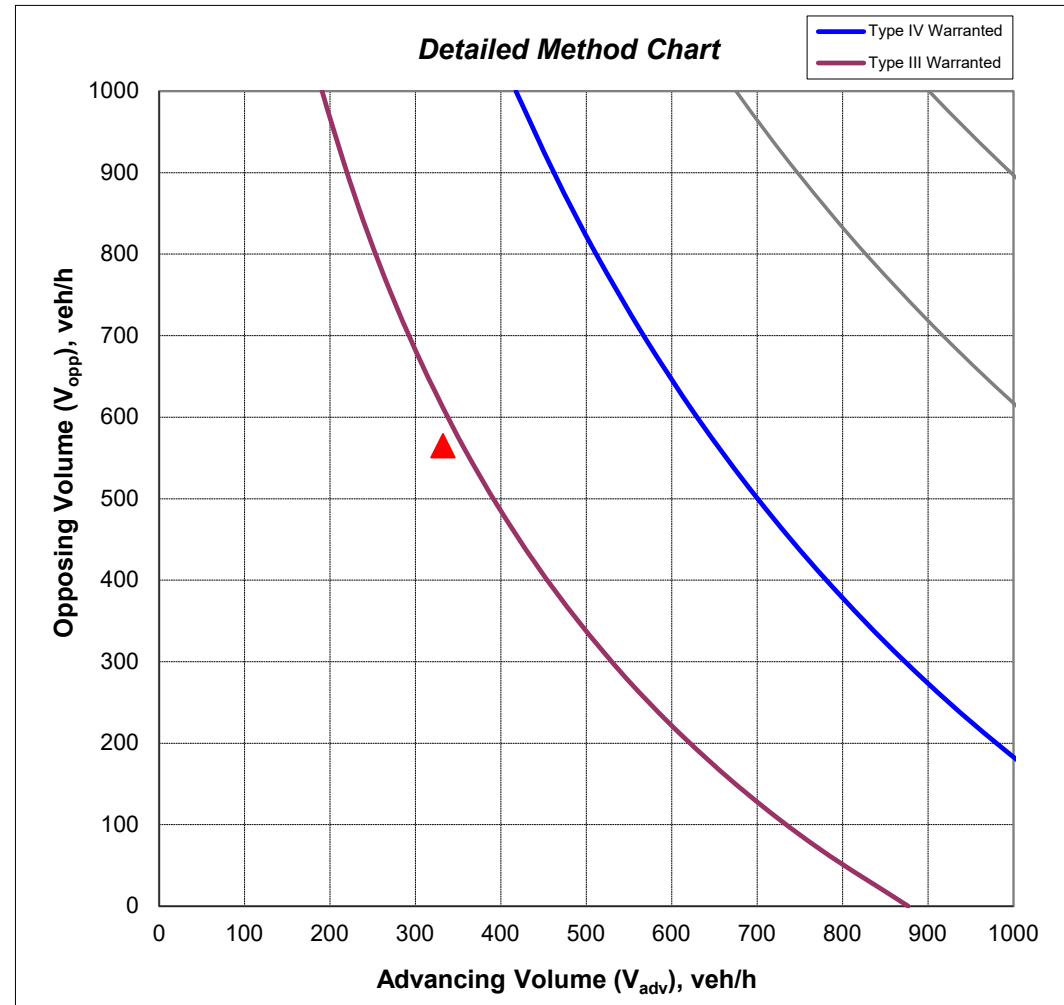
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,450
Minor (intersecting) Road A.A.D.T	1,140
Left turn volume (V_{LT}), veh/h:	19
Advancing volume (V_{adv}), veh/h:	340
Opposing volume (V_{opp}), veh/h:	567
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	490

OUTPUT	Value
Percent left-turns in advancing volume:	5.6%
Percent trucks in left turn volume:	10.5%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.5%
Calculated conflicts per hour, veh/h:	5.0

Use Detailed Method

Type III **RT Lane warranted**

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

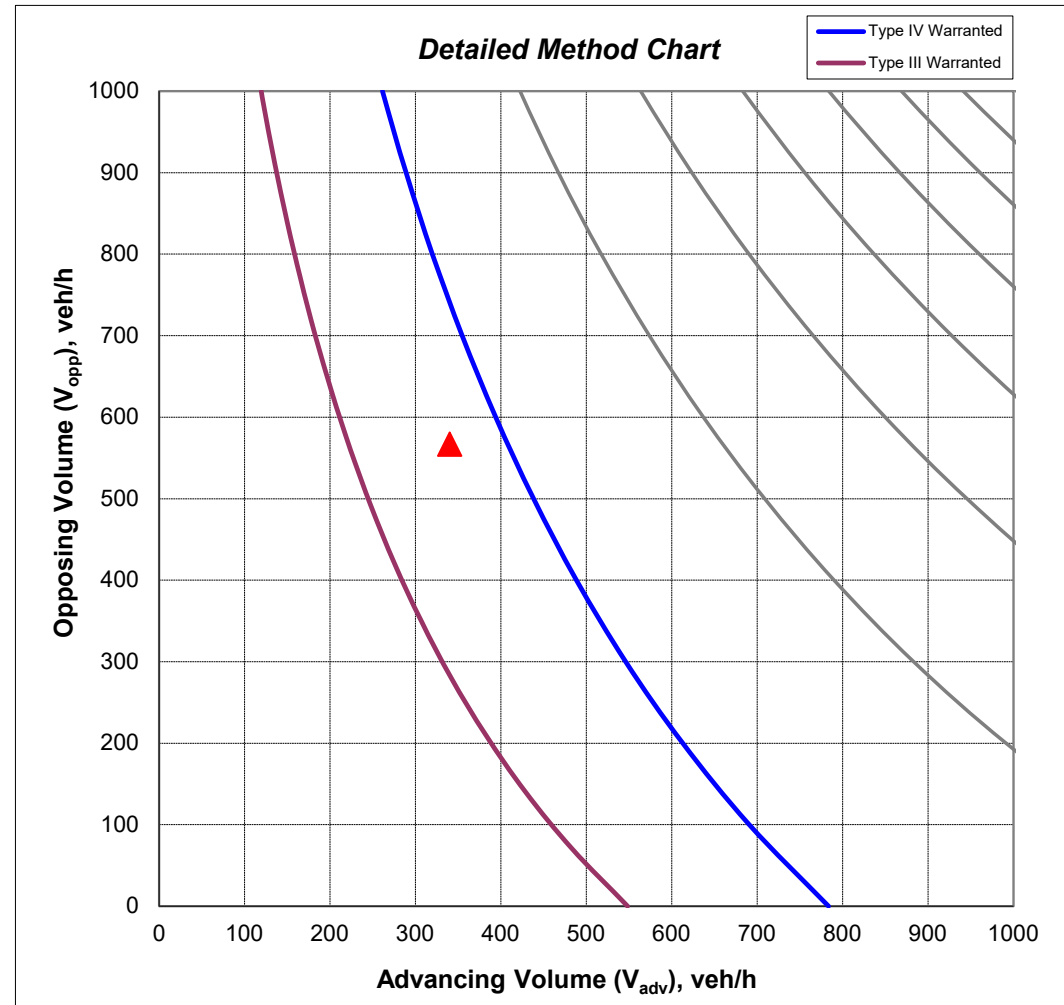
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,130
Minor (intersecting) Road A.A.D.T	290
Left turn volume (V_{LT}), veh/h:	5
Advancing volume (V_{adv}), veh/h:	350
Opposing volume (V_{opp}), veh/h:	557
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	-

OUTPUT	Value
Percent left-turns in advancing volume:	1.4%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.4%
Calculated conflicts per hour, veh/h:	1.4

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

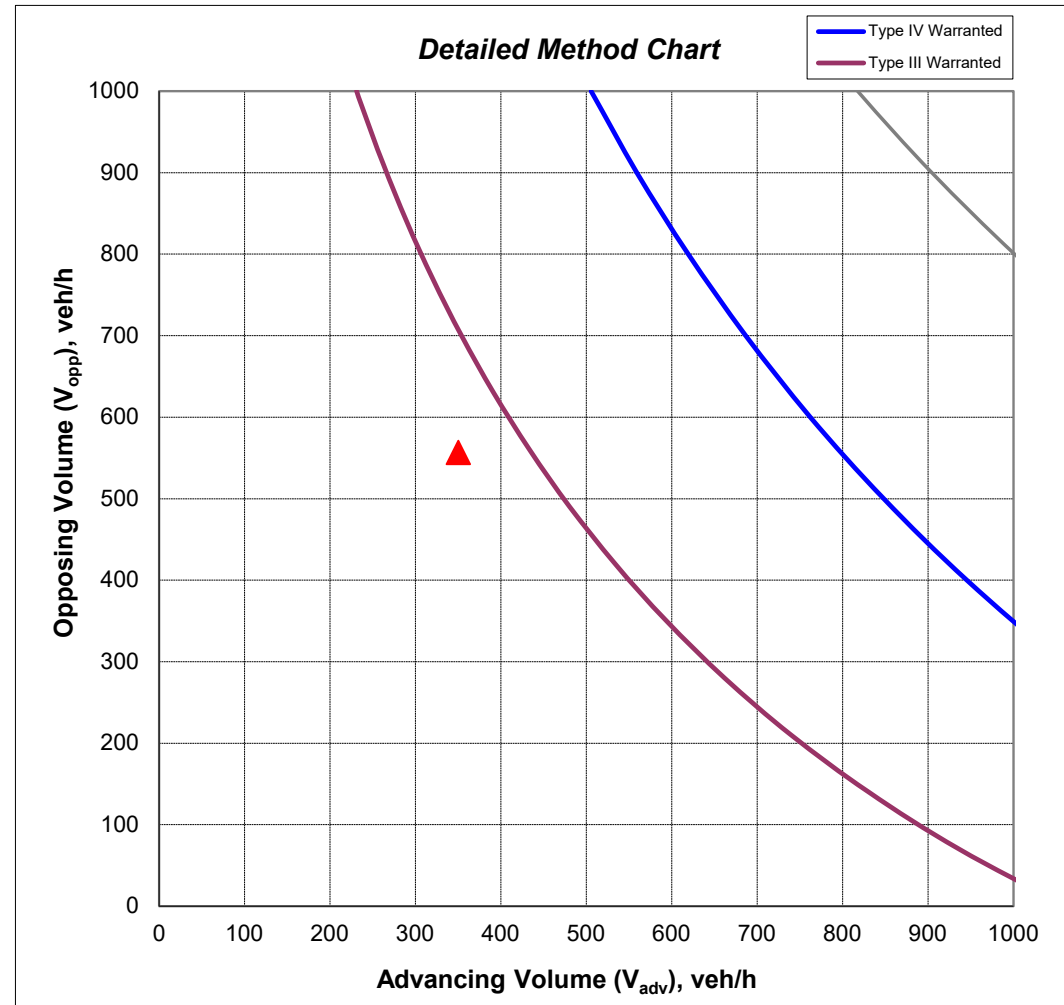
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,260
Minor (intersecting) Road A.A.D.T	140
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	388
Opposing volume (V_{opp}), veh/h:	521
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	30

OUTPUT	Value
Percent left-turns in advancing volume:	0.3%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.1%
Calculated conflicts per hour, veh/h:	0.3

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

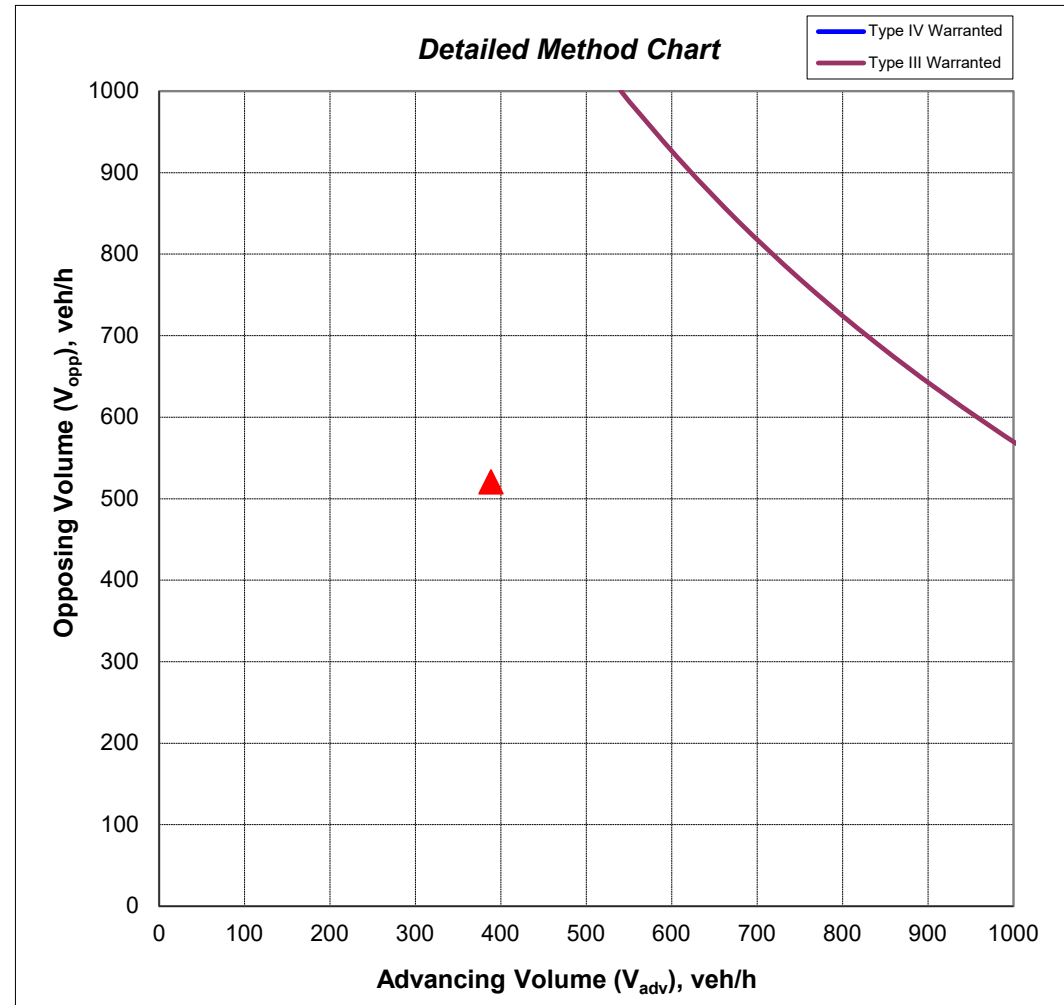
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,060
Minor (intersecting) Road A.A.D.T	210
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	383
Opposing volume (V_{opp}), veh/h:	525
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	40

OUTPUT	Value
Percent left-turns in advancing volume:	0.3%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.1%
Calculated conflicts per hour, veh/h:	0.3

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

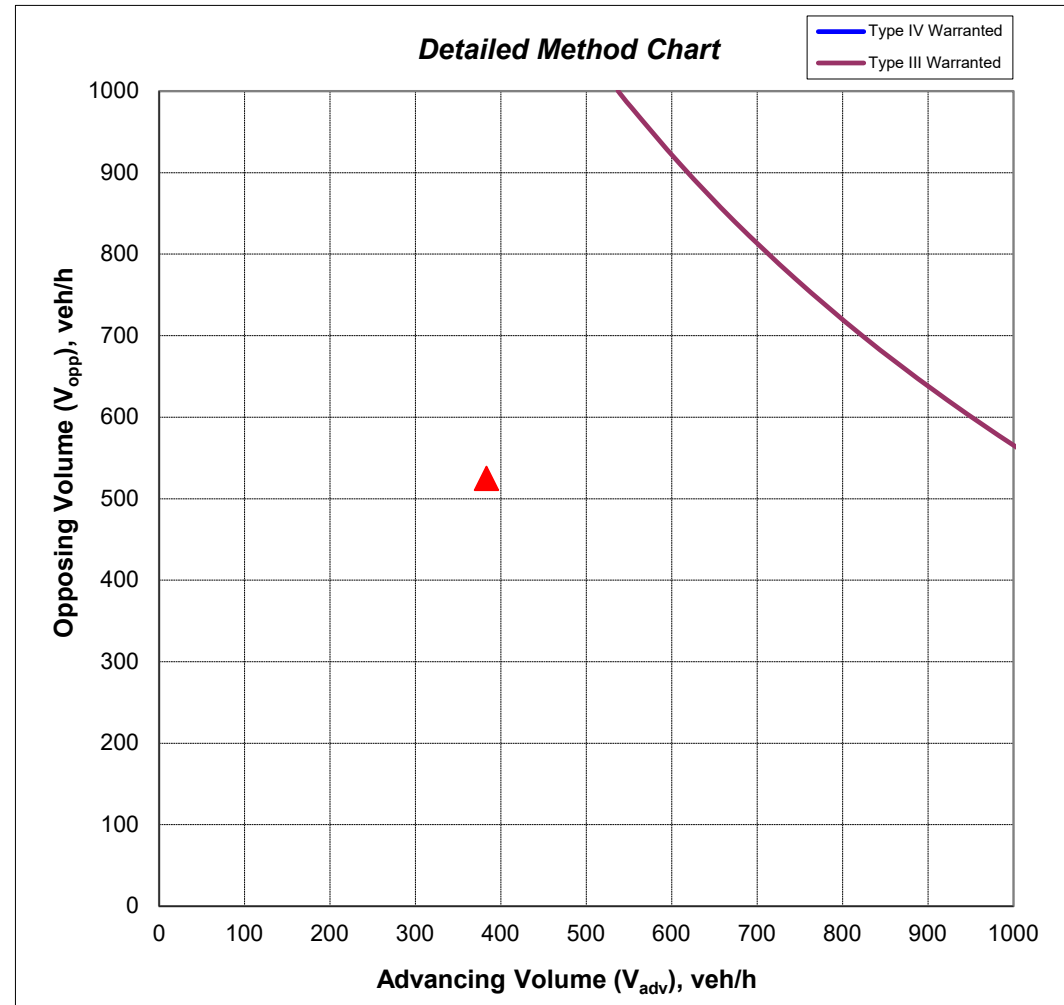
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,670
Minor (intersecting) Road A.A.D.T	480
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	388
Opposing volume (V_{opp}), veh/h:	621
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	10

OUTPUT	Value
Percent left-turns in advancing volume:	0.3%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.1%
Calculated conflicts per hour, veh/h:	0.4

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

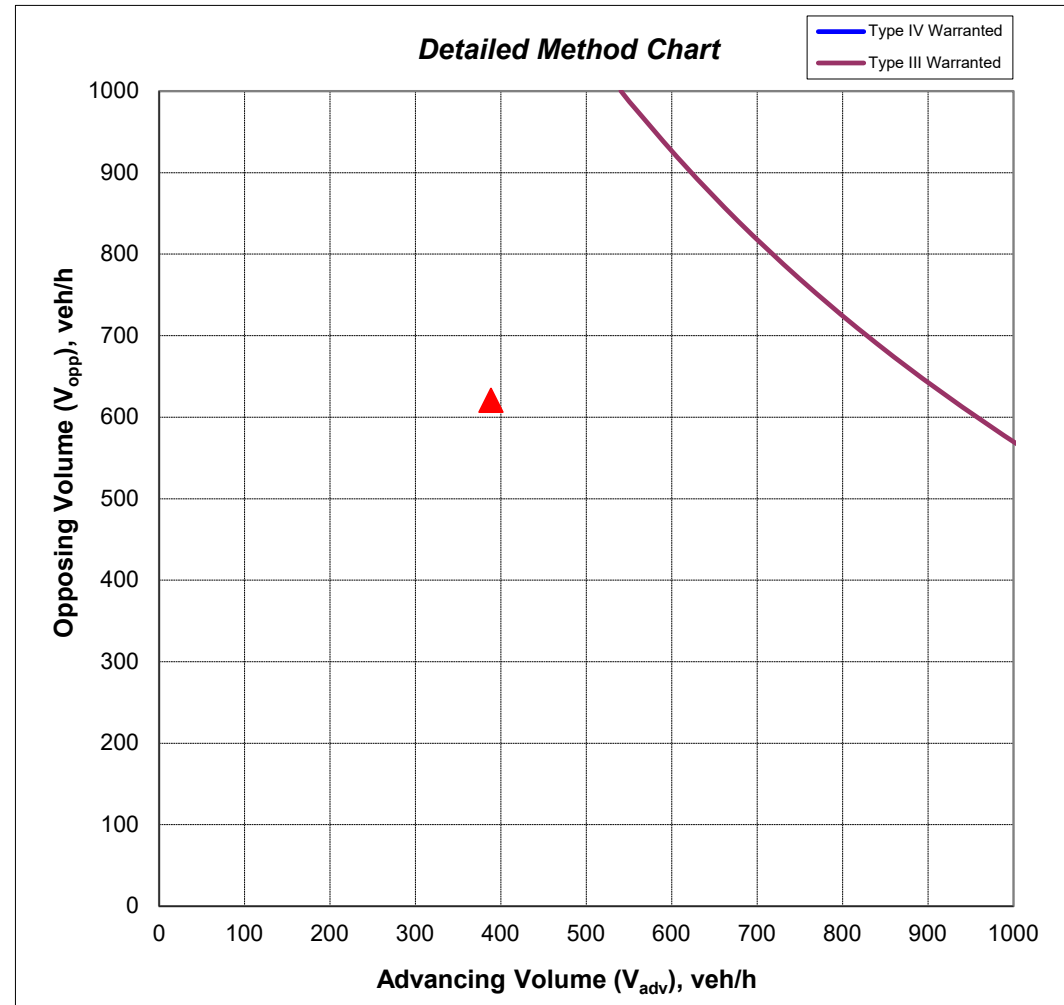
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	11,110
Minor (intersecting) Road A.A.D.T	3,580
Left turn volume (V_{LT}), veh/h:	23
Advancing volume (V_{adv}), veh/h:	404
Opposing volume (V_{opp}), veh/h:	821
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	580

OUTPUT	Value
Percent left-turns in advancing volume:	5.7%
Percent trucks in left turn volume:	8.7%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	3.6%
Calculated conflicts per hour, veh/h:	14.6

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Not Required	base storage requirement - standard storage length + additional truck storage = total additional storage required

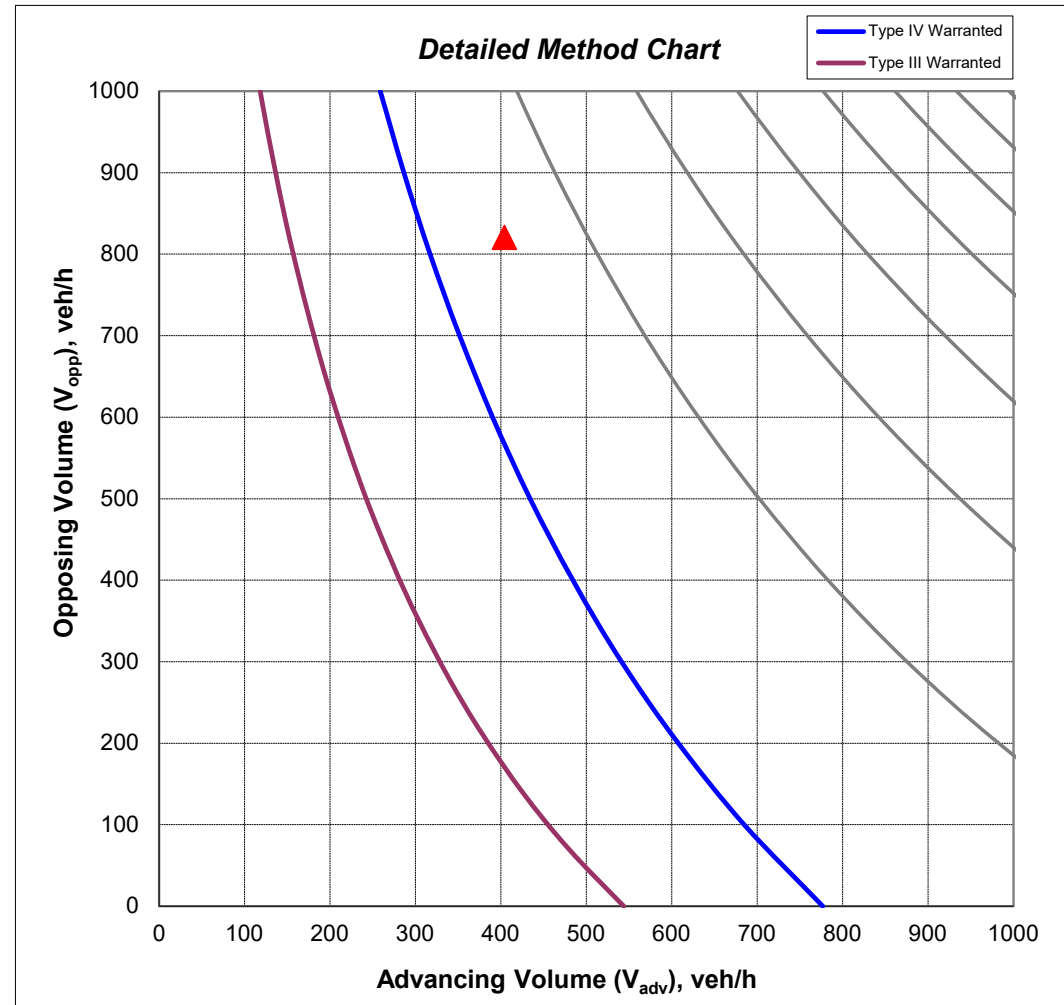
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,820
Minor (intersecting) Road A.A.D.T	300
Left turn volume (V_{LT}), veh/h:	7
Advancing volume (V_{adv}), veh/h:	519
Opposing volume (V_{opp}), veh/h:	885
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	20

OUTPUT	Value
Percent left-turns in advancing volume:	1.3%
Percent trucks in left turn volume:	14.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.7%
Calculated conflicts per hour, veh/h:	8.8

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

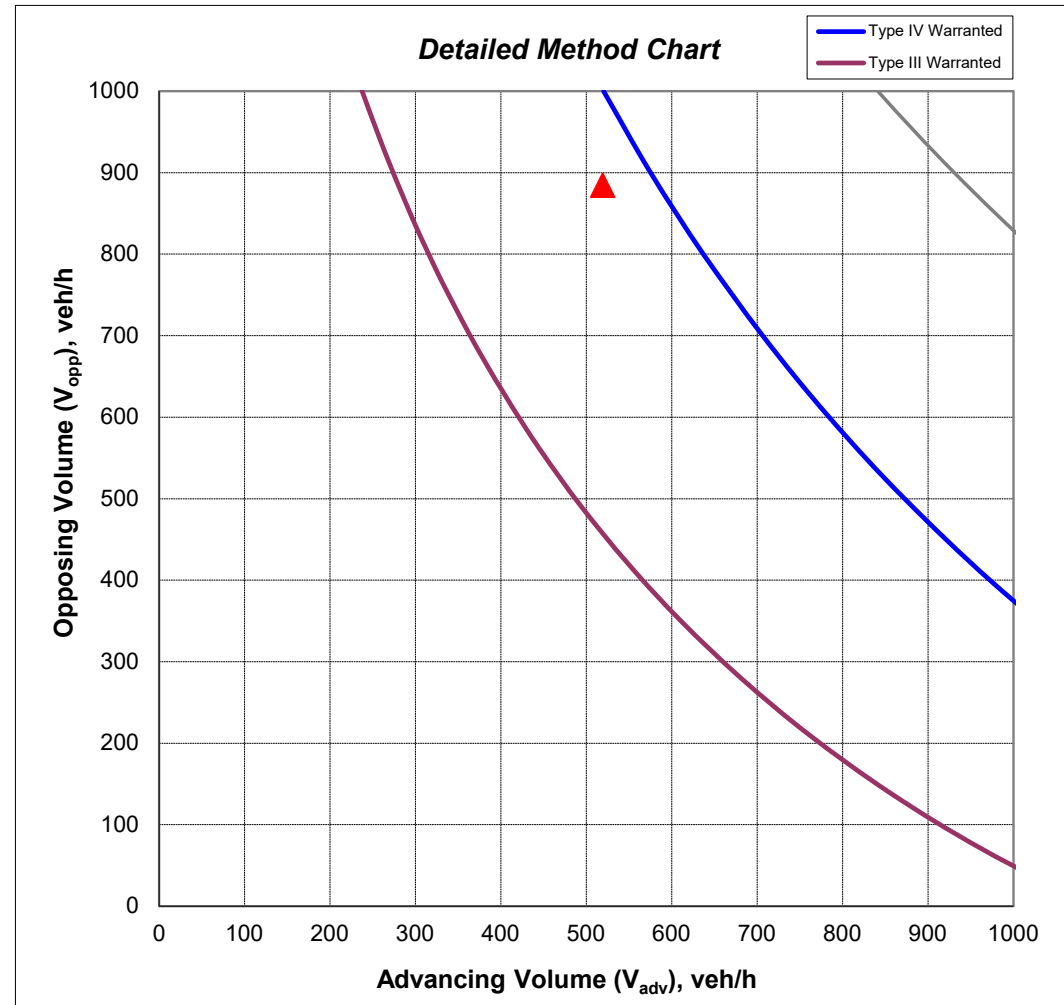
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,900
Minor (intersecting) Road A.A.D.T	1,180
Left turn volume (V_{LT}), veh/h:	19
Advancing volume (V_{adv}), veh/h:	526
Opposing volume (V_{opp}), veh/h:	866
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	520

OUTPUT	Value
Percent left-turns in advancing volume:	3.6%
Percent trucks in left turn volume:	10.5%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	4.4%
Calculated conflicts per hour, veh/h:	22.9

Use Detailed Method

Type IV

RT Lane
warranted

Additional Storage Not Required	base storage requirement	-
	- standard storage length	-
	+ additional truck storage	-
	= total additional storage required	-

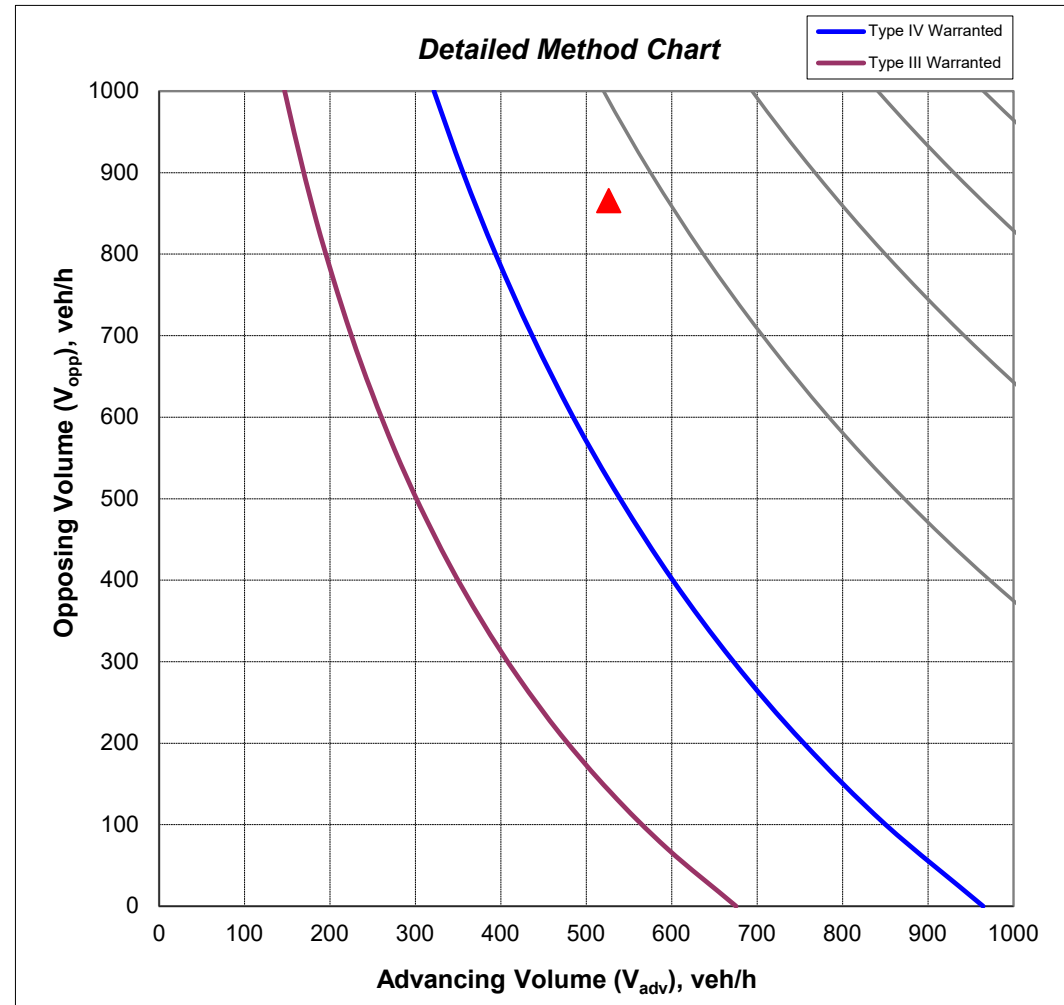
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,750
Minor (intersecting) Road A.A.D.T	290
Left turn volume (V_{LT}), veh/h:	5
Advancing volume (V_{adv}), veh/h:	550
Opposing volume (V_{opp}), veh/h:	877
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	-

OUTPUT	Value
Percent left-turns in advancing volume:	0.9%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.3%
Calculated conflicts per hour, veh/h:	6.9

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

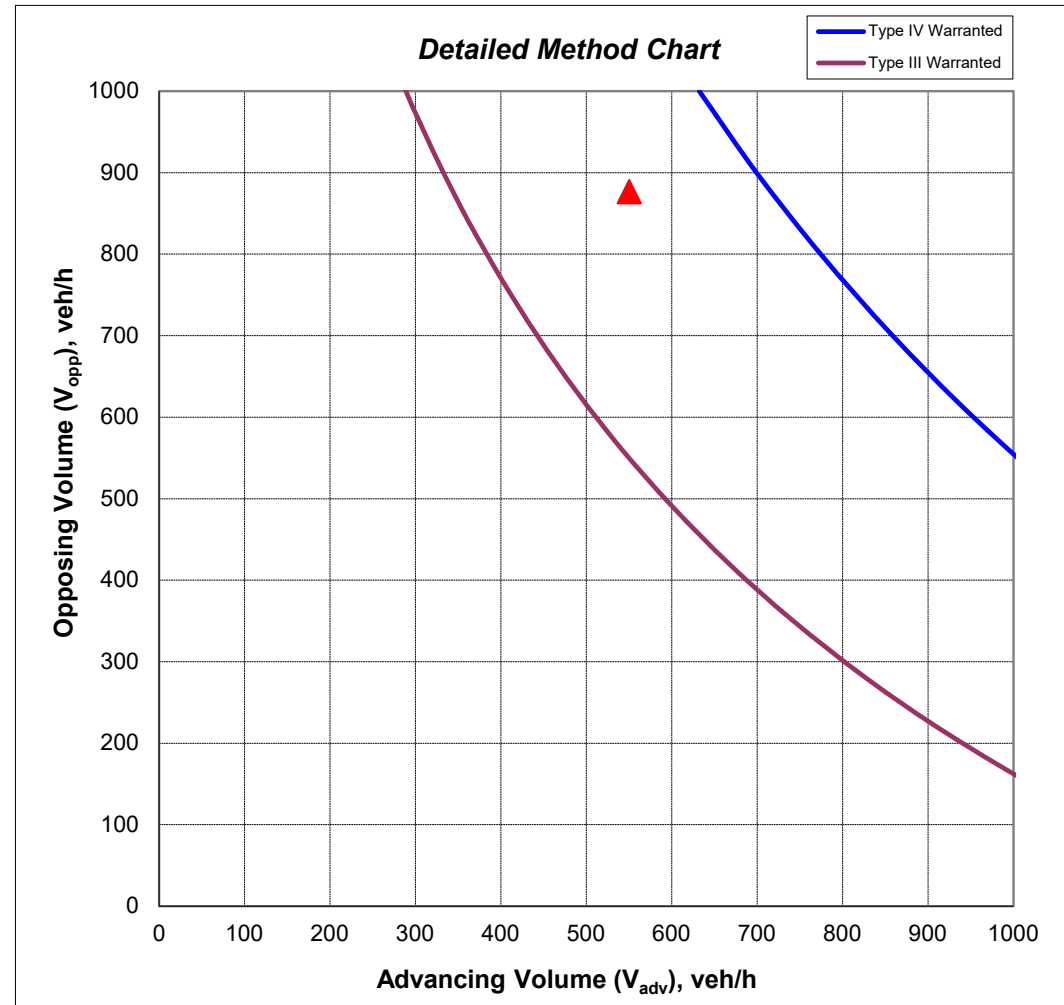
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	13,240
Minor (intersecting) Road A.A.D.T	170
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	610
Opposing volume (V_{opp}), veh/h:	822
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	30

OUTPUT	Value
Percent left-turns in advancing volume:	0.2%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.3%
Calculated conflicts per hour, veh/h:	1.5

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

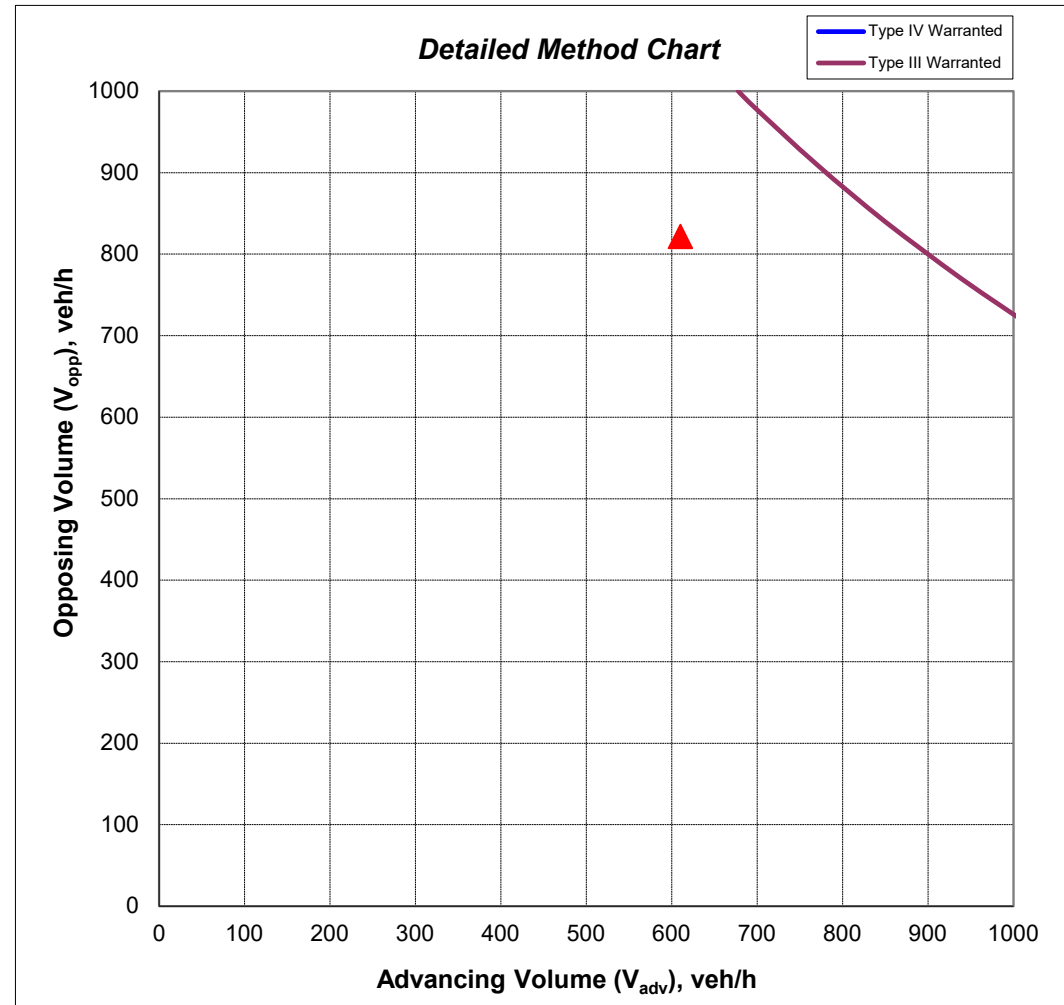
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	10,820
Minor (intersecting) Road A.A.D.T	2,100
Left turn volume (V_{LT}), veh/h:	7
Advancing volume (V_{adv}), veh/h:	533
Opposing volume (V_{opp}), veh/h:	848
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	190

OUTPUT	Value
Percent left-turns in advancing volume:	1.3%
Percent trucks in left turn volume:	14.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.6%
Calculated conflicts per hour, veh/h:	8.6

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

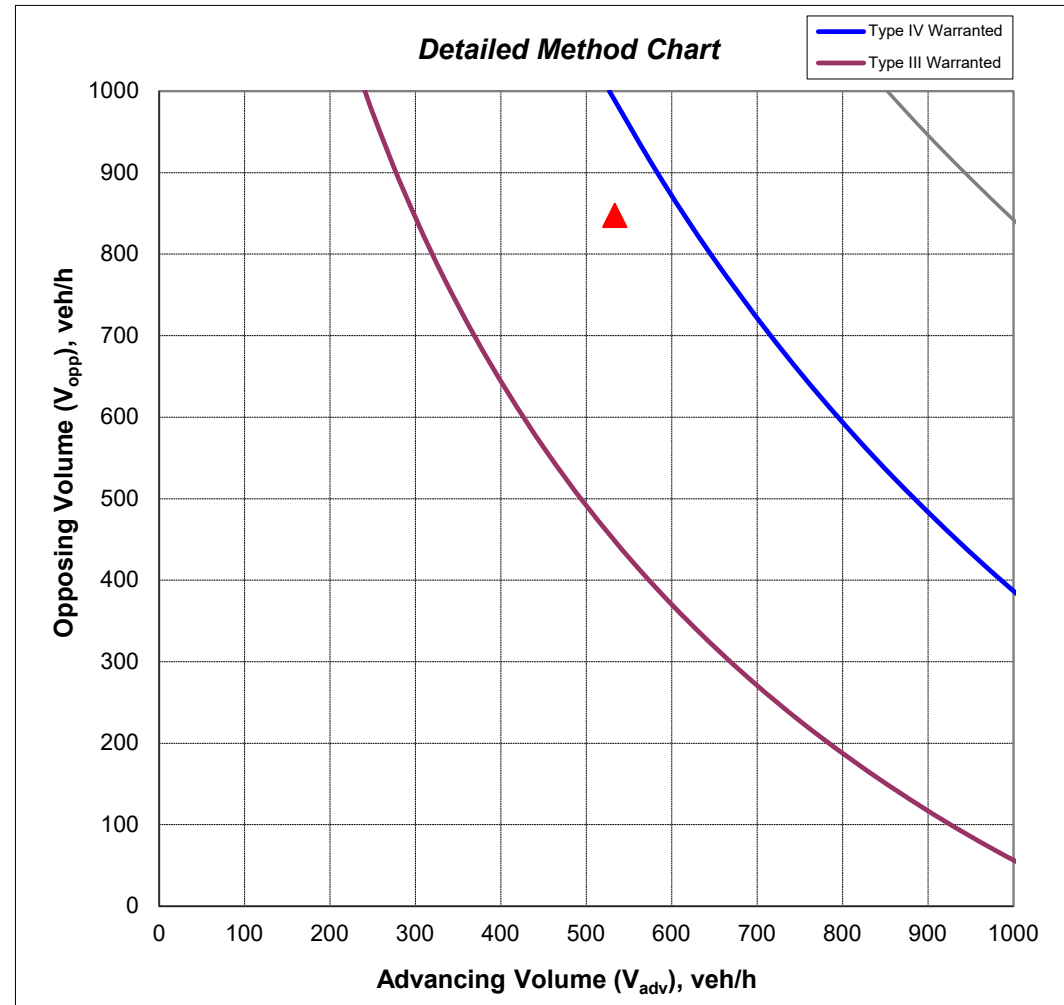
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,860
Minor (intersecting) Road A.A.D.T	970
Left turn volume (V_{LT}), veh/h:	18
Advancing volume (V_{adv}), veh/h:	595
Opposing volume (V_{opp}), veh/h:	1,014
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	50

OUTPUT	Value
Percent left-turns in advancing volume:	3.0%
Percent trucks in left turn volume:	5.6%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	6.3%
Calculated conflicts per hour, veh/h:	37.7

Use Detailed Method

Type IV

Additional Storage Required	<i>base storage requirement</i>	25 m
	<i>- standard storage length</i>	15 m
	<i>+ additional truck storage</i>	0 m
	= total additional storage required	10 m

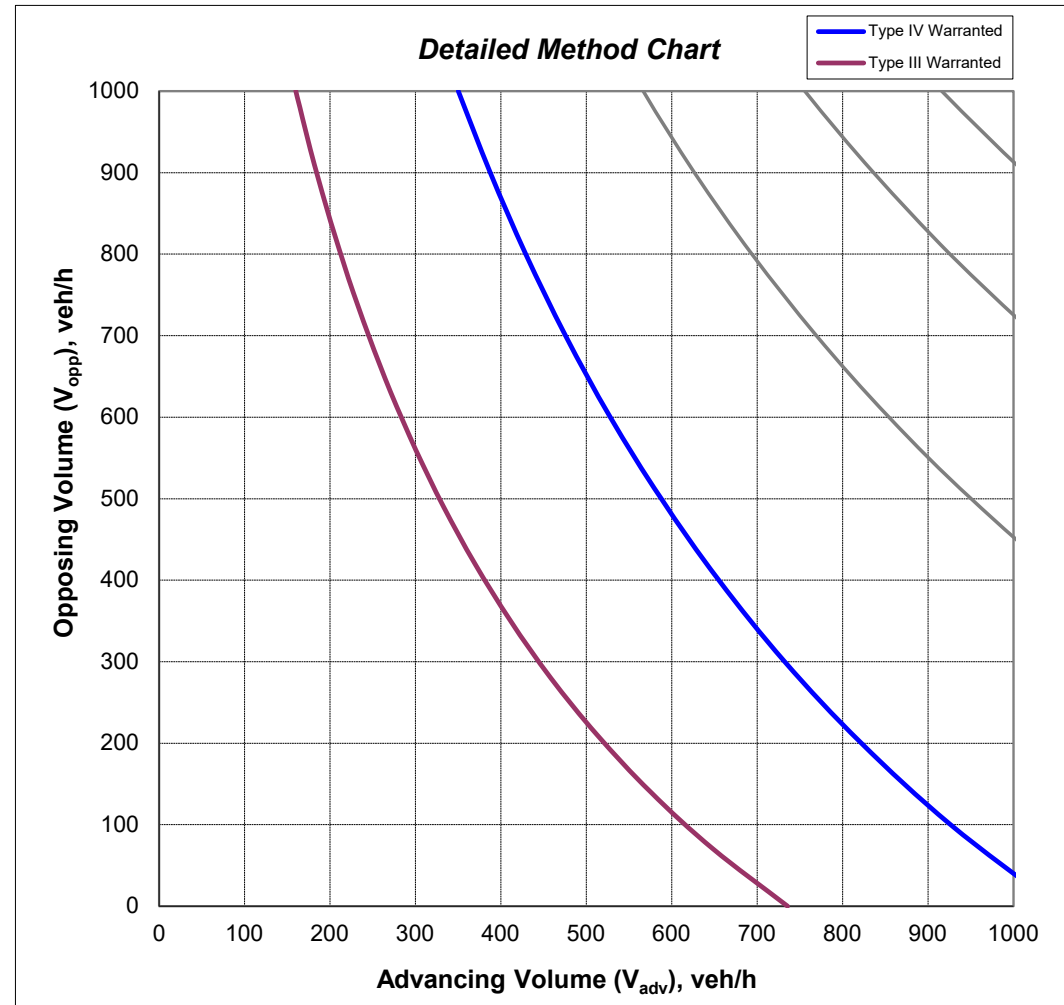
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	16,370
Minor (intersecting) Road A.A.D.T	6,060
Left turn volume (V_{LT}), veh/h:	44
Advancing volume (V_{adv}), veh/h:	626
Opposing volume (V_{opp}), veh/h:	1,273
Left turn truck volume, trucks/h:	4
Right turn volume (V_{RT}), veh/day:	900

OUTPUT	Value
Percent left-turns in advancing volume:	7.0%
Percent trucks in left turn volume:	9.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	26.2%
Calculated conflicts per hour, veh/h:	164.1

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	55 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	40 m

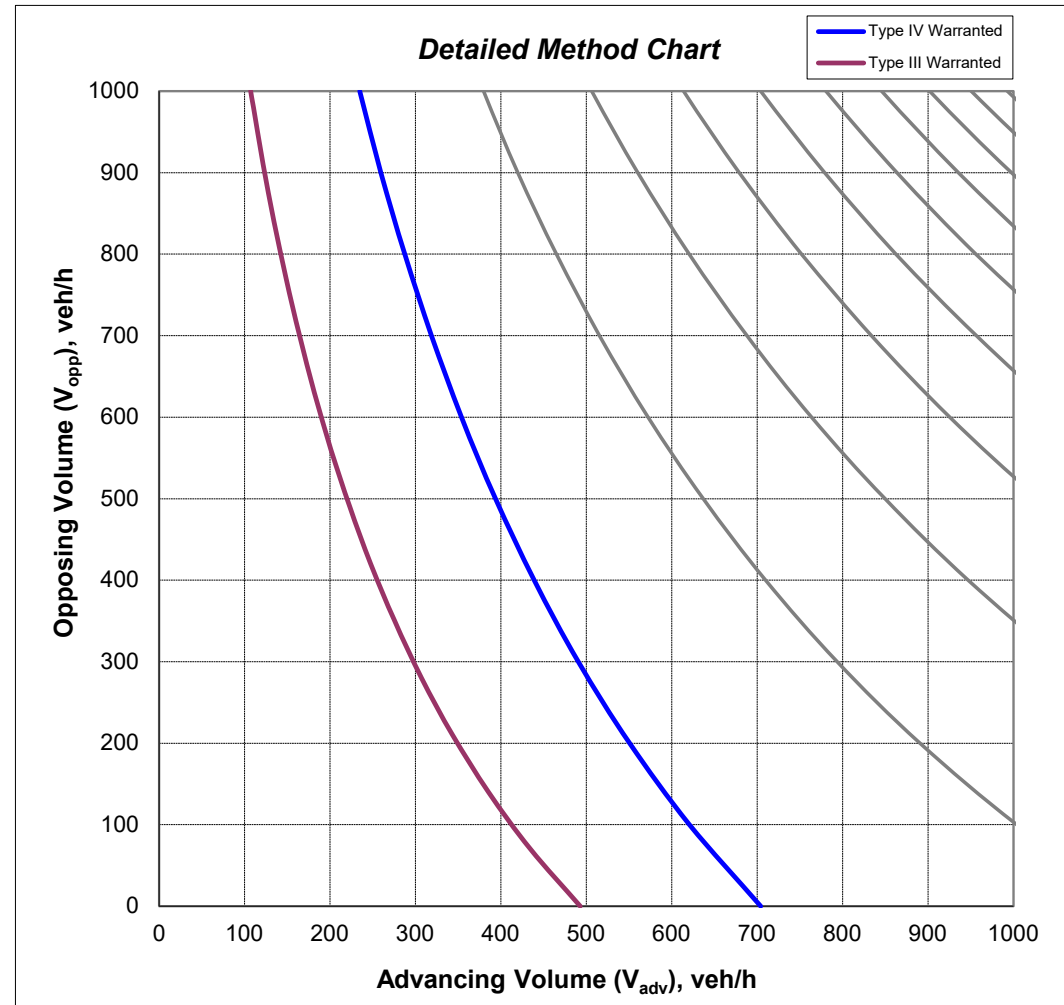
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,460
Minor (intersecting) Road A.A.D.T	300
Left turn volume (V_{LT}), veh/h:	9
Advancing volume (V_{adv}), veh/h:	879
Opposing volume (V_{opp}), veh/h:	1,336
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	20

OUTPUT	Value
Percent left-turns in advancing volume:	1.0%
Percent trucks in left turn volume:	11.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	9.1%
Calculated conflicts per hour, veh/h:	79.8

Use Detailed Method

Type IV

Additional Storage Required	<i>base storage requirement</i>	25 m
	<i>- standard storage length</i>	15 m
	<i>+ additional truck storage</i>	0 m
	= total additional storage required	10 m

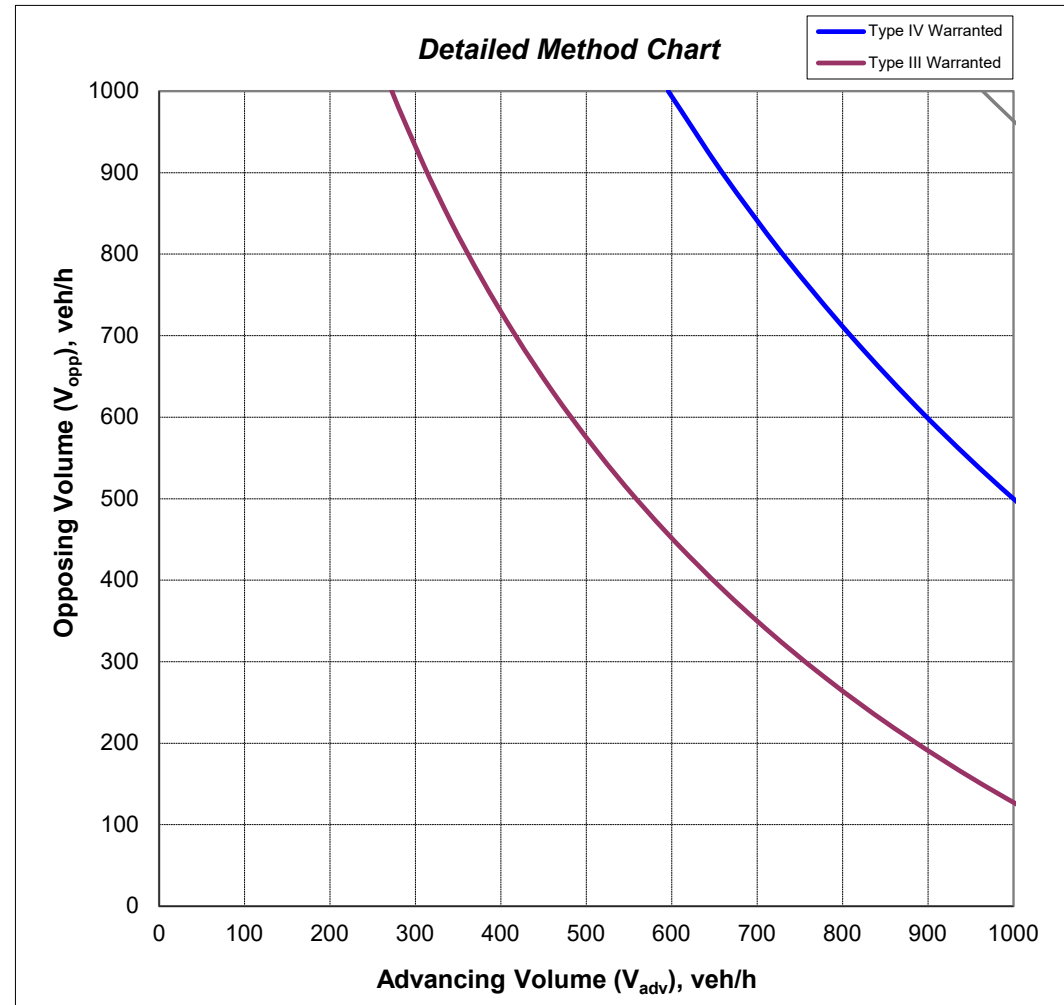
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,560
Minor (intersecting) Road A.A.D.T	3,600
Left turn volume (V_{LT}), veh/h:	64
Advancing volume (V_{adv}), veh/h:	834
Opposing volume (V_{opp}), veh/h:	1,319
Left turn truck volume, trucks/h:	5
Right turn volume (V_{RT}), veh/day:	960

OUTPUT	Value
Percent left-turns in advancing volume:	7.7%
Percent trucks in left turn volume:	7.8%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	55.3%
Calculated conflicts per hour, veh/h:	460.9

Use Detailed Method

Type IV		RT Lane warranted
Additional Storage Required	base storage requirement	95 m
	- standard storage length	15 m
	+ additional truck storage	0 m
	= total additional storage required	80 m

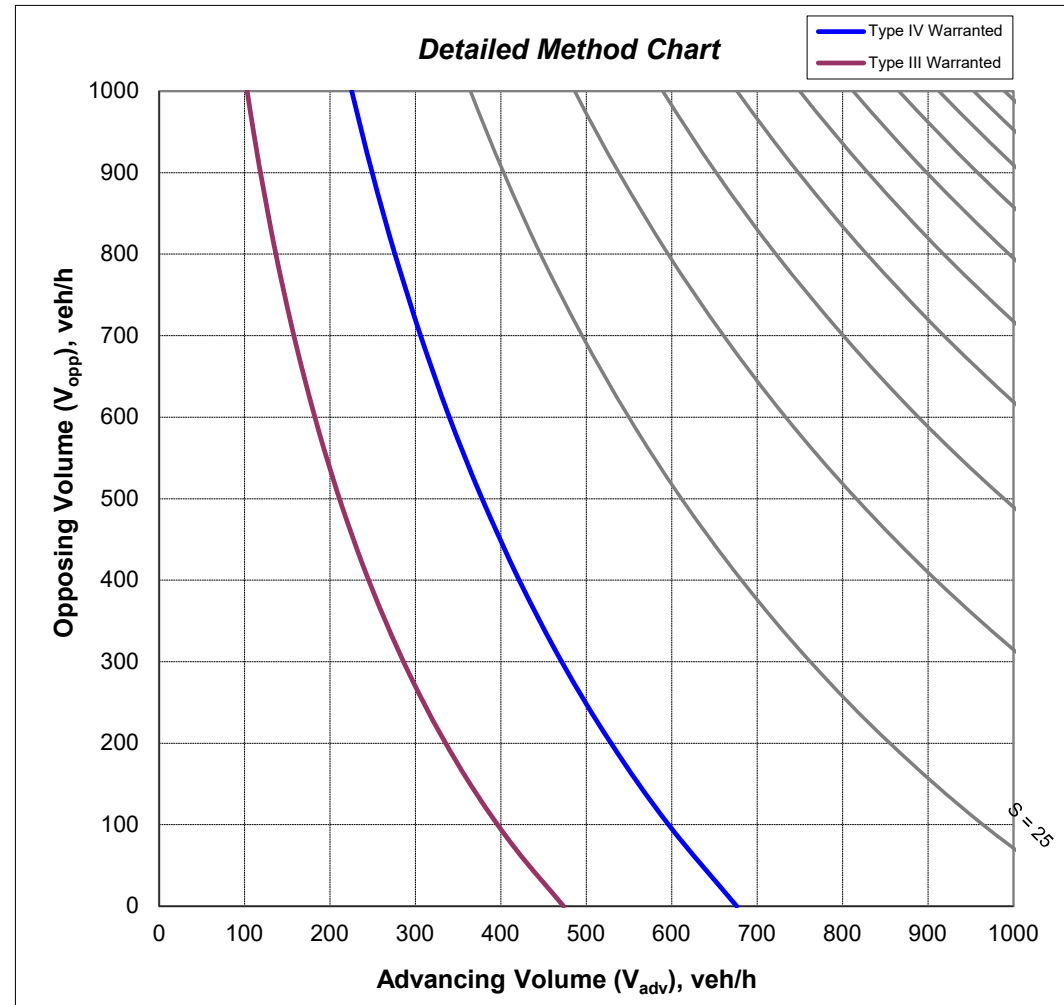
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,780
Minor (intersecting) Road A.A.D.T	2,880
Left turn volume (V_{LT}), veh/h:	57
Advancing volume (V_{adv}), veh/h:	937
Opposing volume (V_{opp}), veh/h:	1,266
Left turn truck volume, trucks/h:	5
Right turn volume (V_{RT}), veh/day:	540

OUTPUT	Value
Percent left-turns in advancing volume:	6.1%
Percent trucks in left turn volume:	8.8%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	50.6%
Calculated conflicts per hour, veh/h:	474.5

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	95 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	80 m

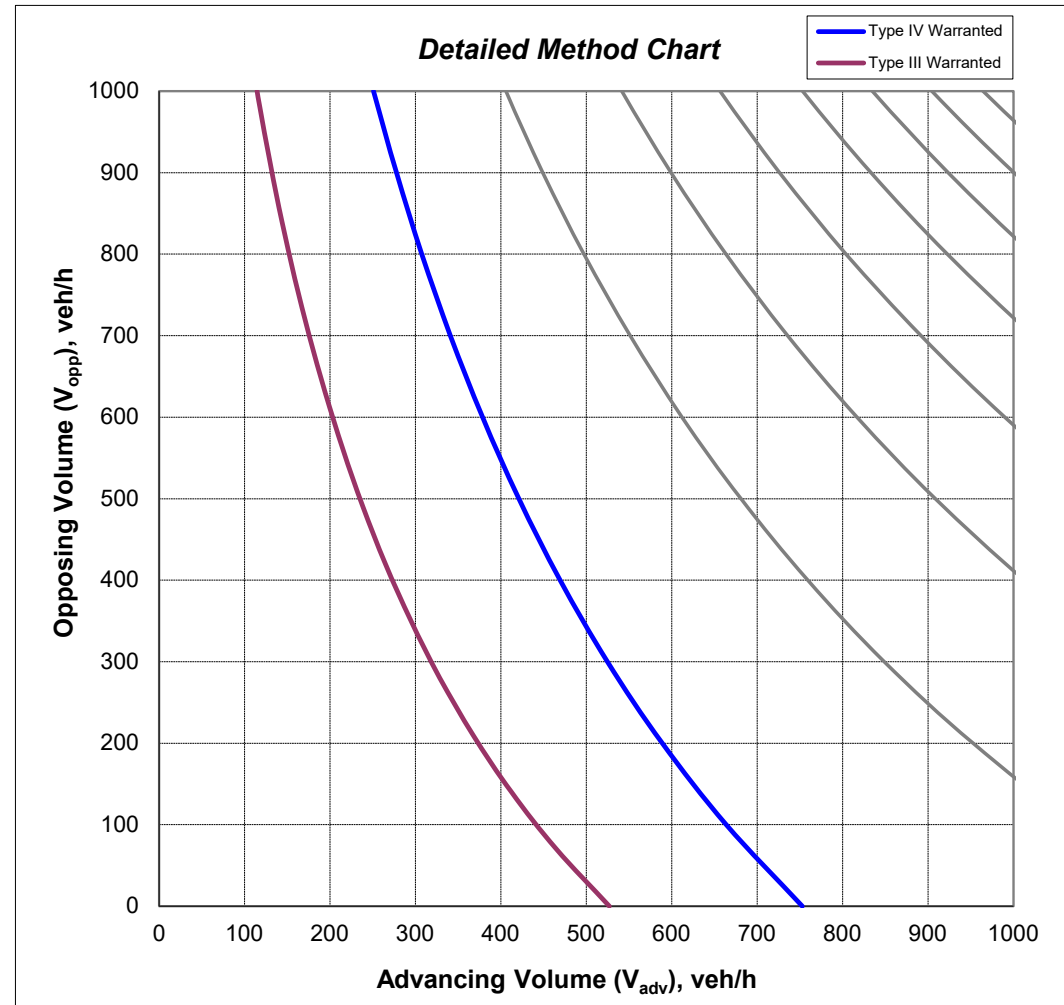
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis **Rural Two-Lane Undivided Highways**

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	20,310
Minor (intersecting) Road A.A.D.T	170
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	1,153
Opposing volume (V_{opp}), veh/h:	1,208
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	30

OUTPUT	Value
Percent left-turns in advancing volume:	0.1%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.0%
Calculated conflicts per hour, veh/h:	11.9

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

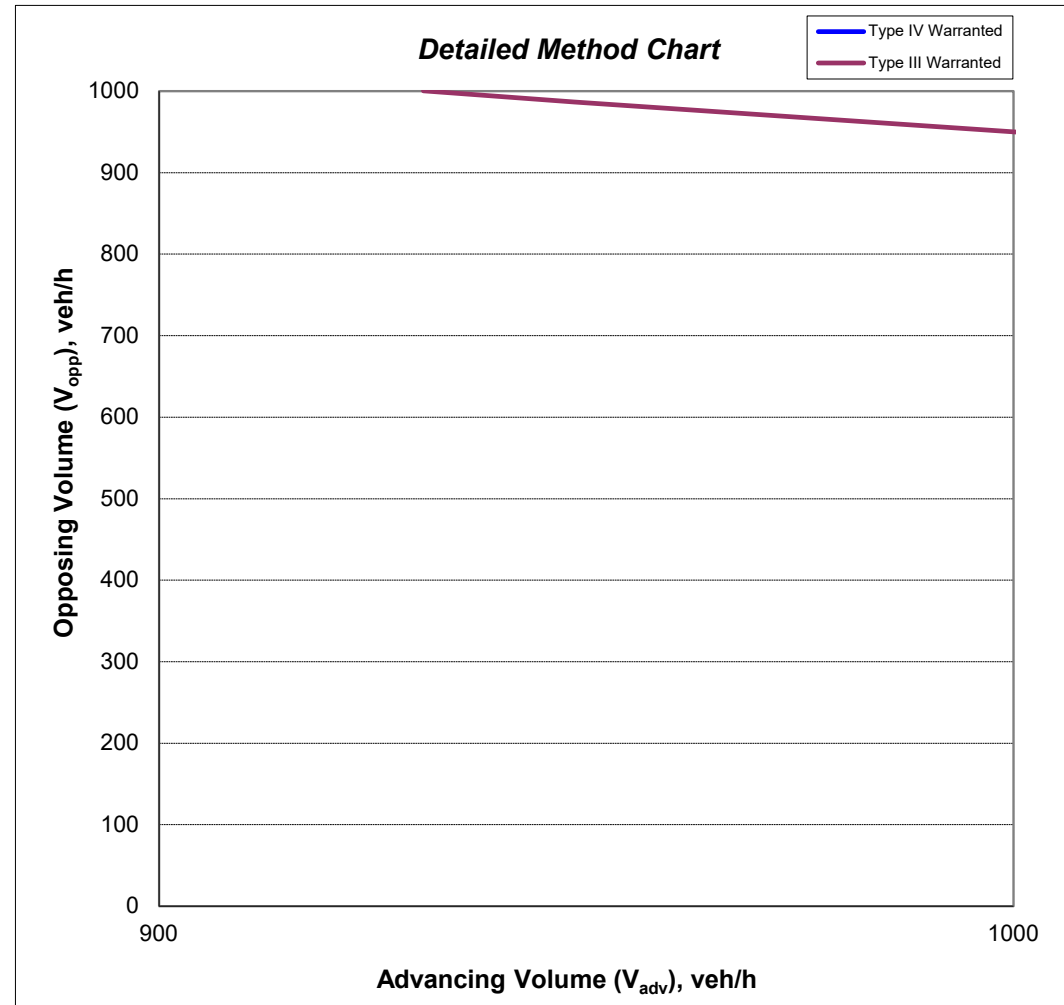
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: EB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	5,520
Minor (intersecting) Road A.A.D.T	350
Left turn volume (V_{LT}), veh/h:	14
Advancing volume (V_{adv}), veh/h:	347
Opposing volume (V_{opp}), veh/h:	245
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	130

OUTPUT	Value
Percent left-turns in advancing volume:	4.0%
Percent trucks in left turn volume:	7.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.6%
Calculated conflicts per hour, veh/h:	1.9

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

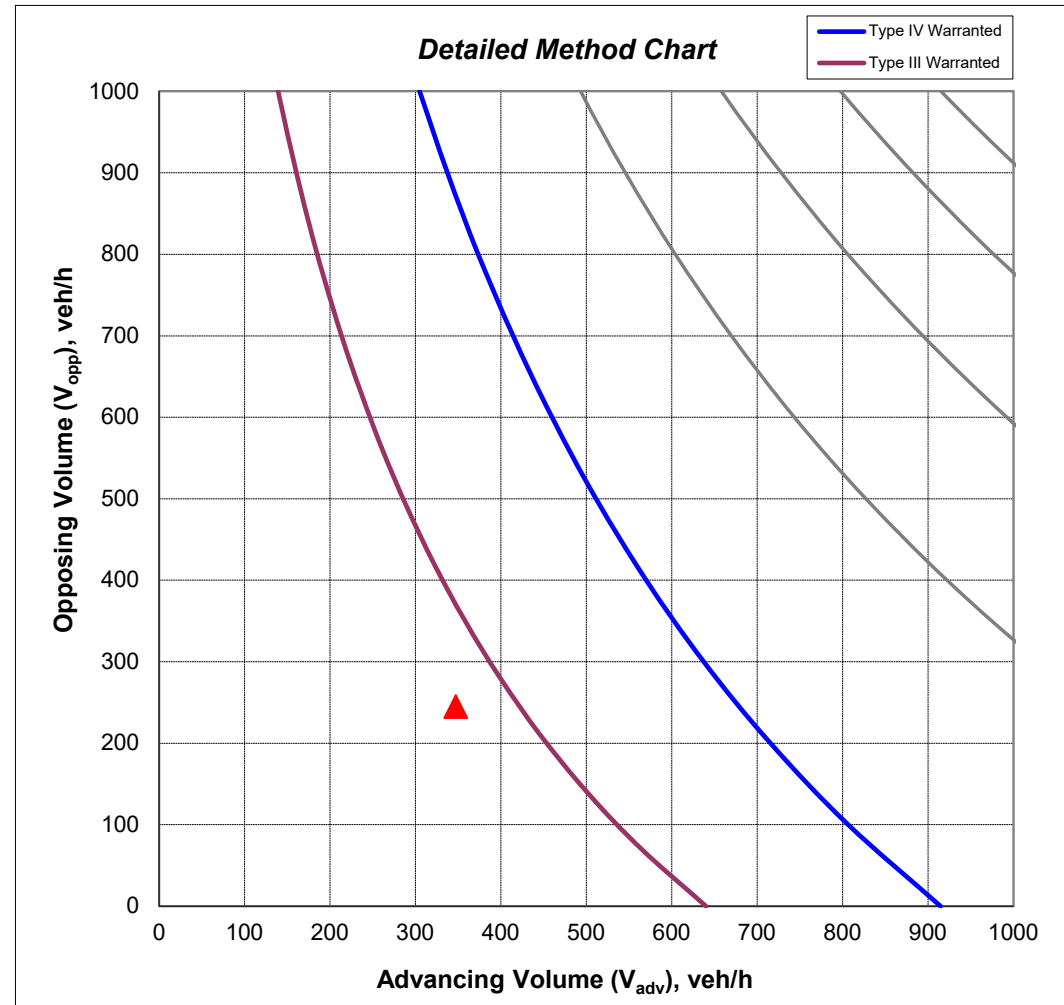
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	6,520
Minor (intersecting) Road A.A.D.T	800
Left turn volume (V_{LT}), veh/h:	32
Advancing volume (V_{adv}), veh/h:	426
Opposing volume (V_{opp}), veh/h:	246
Left turn truck volume, trucks/h:	3
Right turn volume (V_{RT}), veh/day:	370

OUTPUT	Value
Percent left-turns in advancing volume:	7.5%
Percent trucks in left turn volume:	9.4%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.5%
Calculated conflicts per hour, veh/h:	6.4

Use Detailed Method

Type III

Additional Storage Not Required	base storage requirement	-
	- standard storage length	-
	+ additional truck storage	-
	= total additional storage required	-

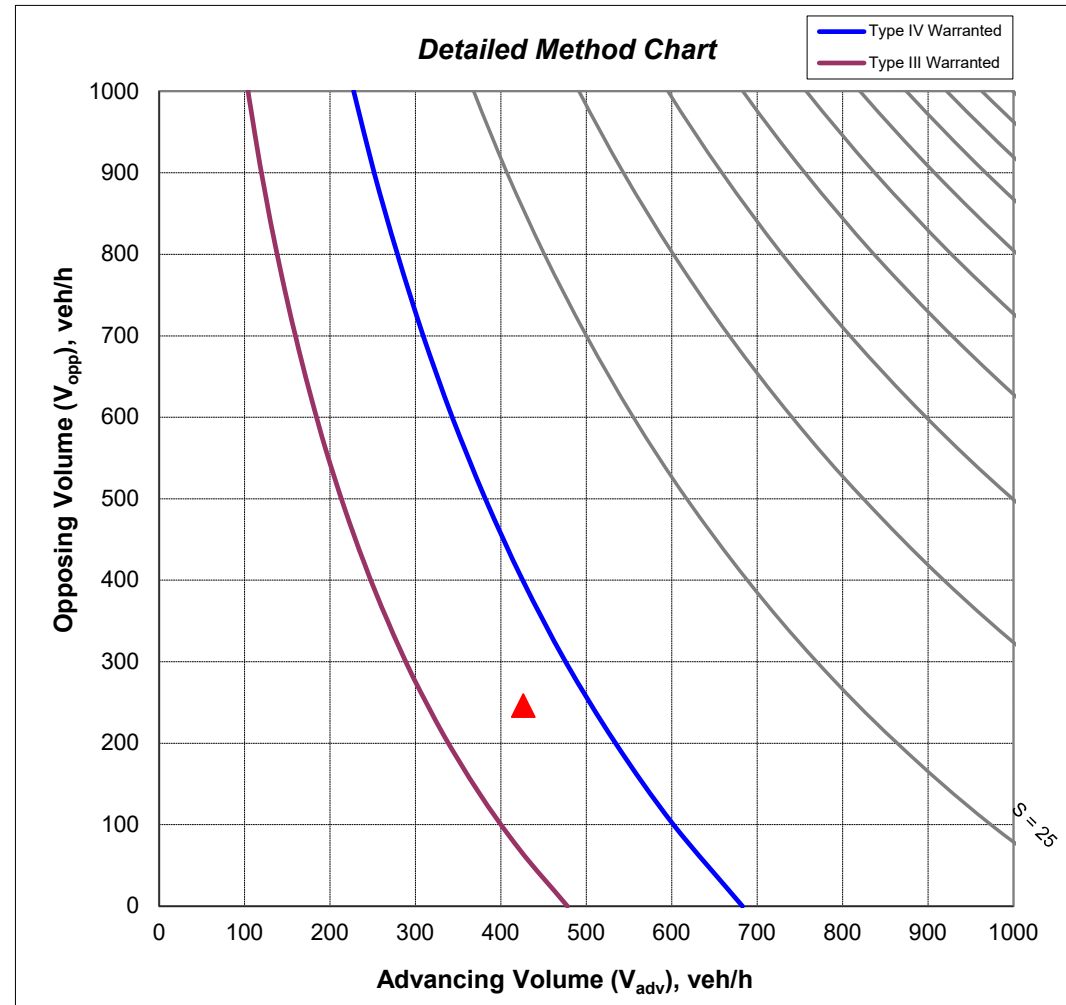
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	6,790
Minor (intersecting) Road A.A.D.T	210
Left turn volume (V_{LT}), veh/h:	12
Advancing volume (V_{adv}), veh/h:	460
Opposing volume (V_{opp}), veh/h:	281
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	-

OUTPUT	Value
Percent left-turns in advancing volume:	2.6%
Percent trucks in left turn volume:	8.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.7%
Calculated conflicts per hour, veh/h:	3.2

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

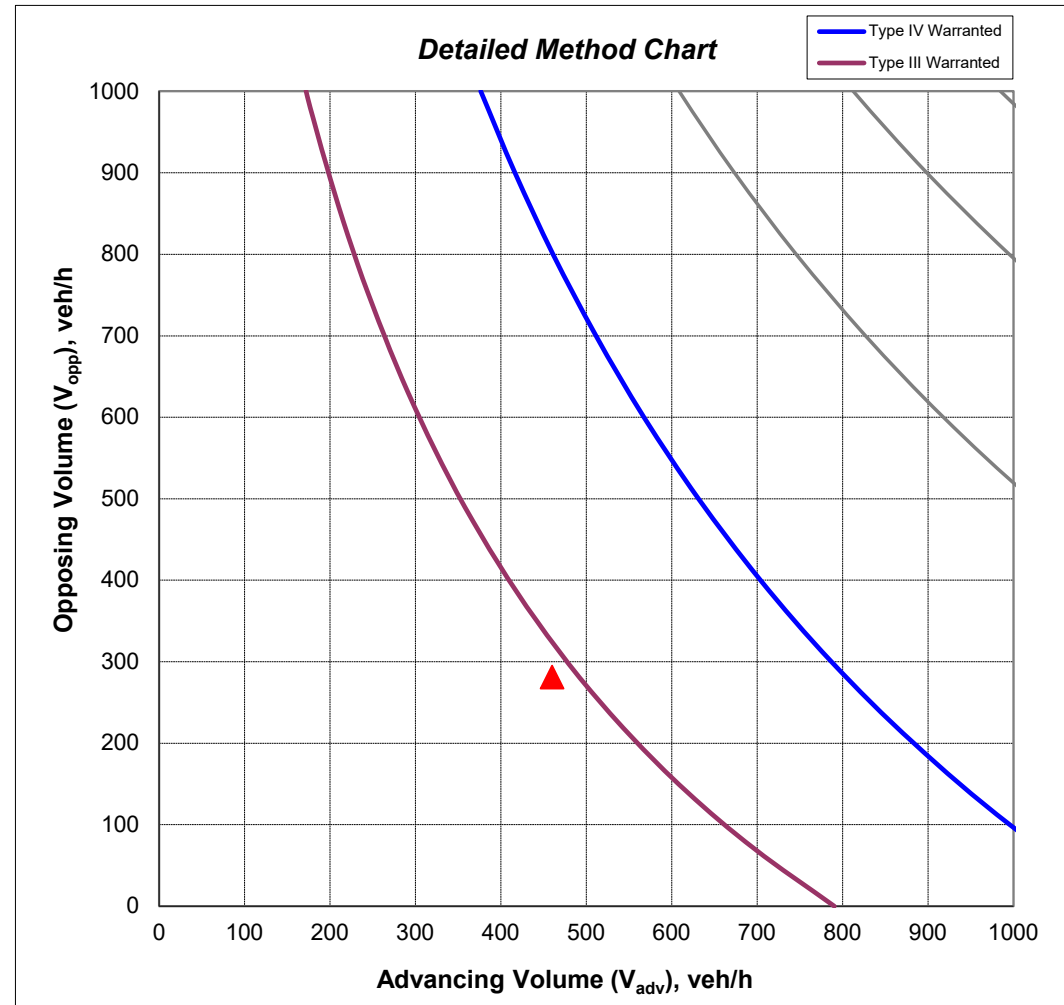
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 51 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,440
Minor (intersecting) Road A.A.D.T	700
Left turn volume (V_{LT}), veh/h:	97
Advancing volume (V_{adv}), veh/h:	530
Opposing volume (V_{opp}), veh/h:	310
Left turn truck volume, trucks/h:	8
Right turn volume (V_{RT}), veh/day:	220

OUTPUT	Value
Percent left-turns in advancing volume:	18.3%
Percent trucks in left turn volume:	8.2%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	5.8%
Calculated conflicts per hour, veh/h:	30.9

Use Detailed Method

Type IV

Additional Storage Required	<i>base storage requirement</i>	25 m
	<i>- standard storage length</i>	15 m
	<i>+ additional truck storage</i>	0 m
	= total additional storage required	10 m

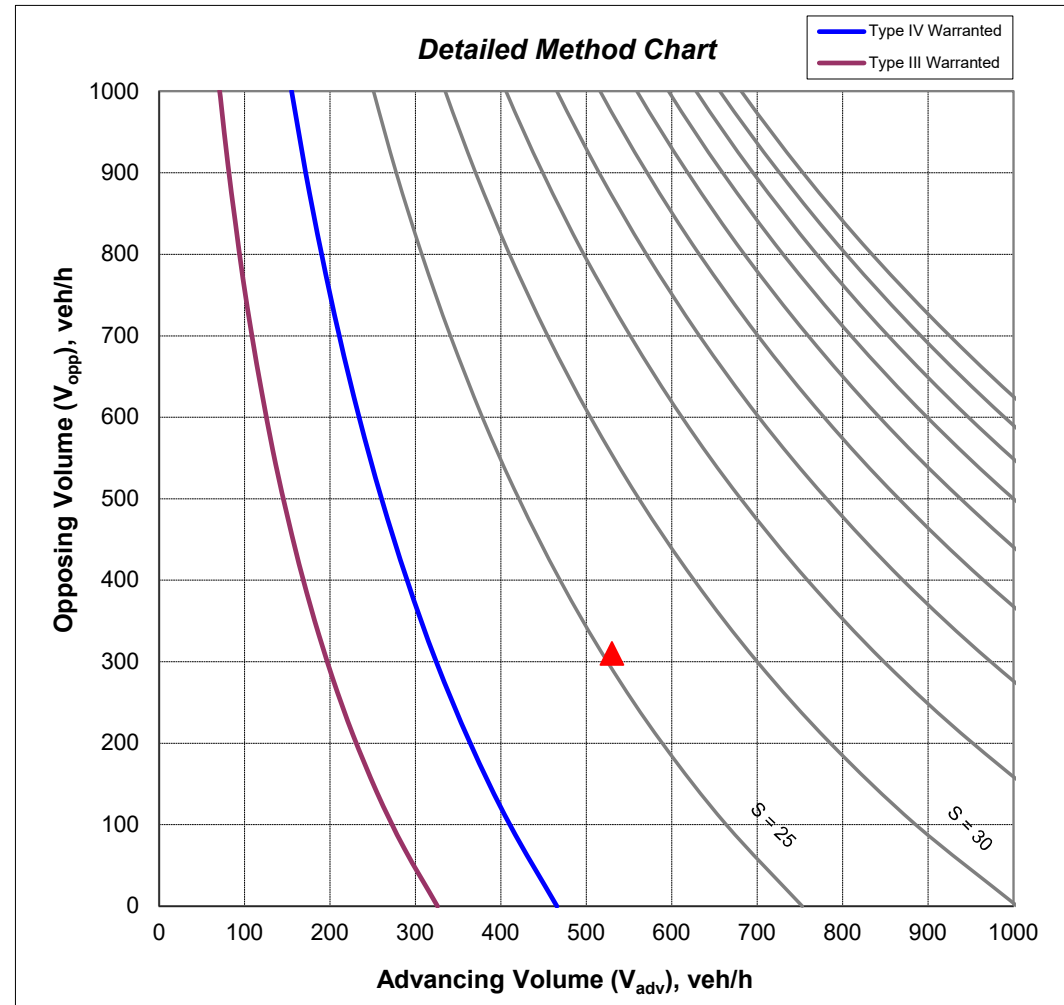
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,410
Minor (intersecting) Road A.A.D.T	310
Left turn volume (V_{LT}), veh/h:	3
Advancing volume (V_{adv}), veh/h:	565
Opposing volume (V_{opp}), veh/h:	332
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	110

OUTPUT	Value
Percent left-turns in advancing volume:	0.5%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.2%
Calculated conflicts per hour, veh/h:	1.4

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

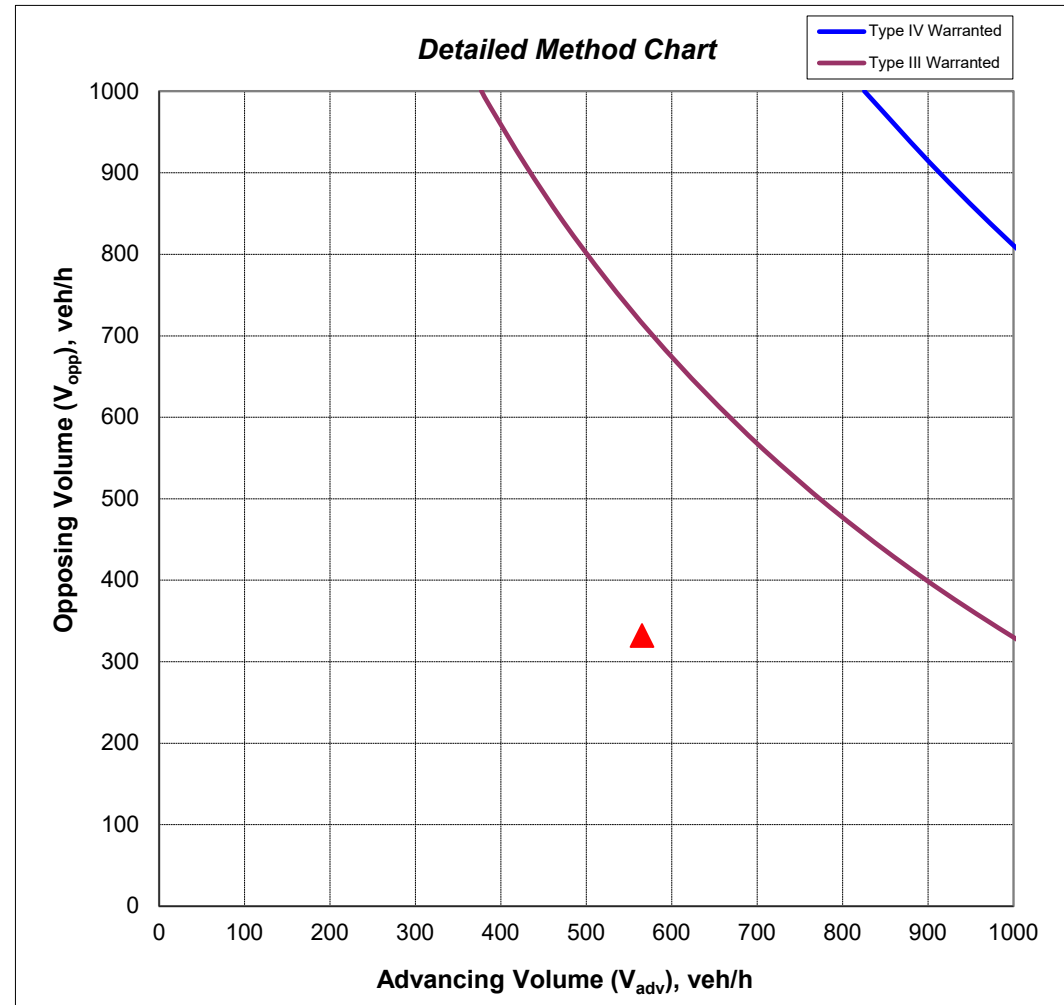
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,190
Minor (intersecting) Road A.A.D.T	880
Left turn volume (V_{LT}), veh/h:	22
Advancing volume (V_{adv}), veh/h:	567
Opposing volume (V_{opp}), veh/h:	381
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	250

OUTPUT	Value
Percent left-turns in advancing volume:	3.9%
Percent trucks in left turn volume:	9.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	2.0%
Calculated conflicts per hour, veh/h:	11.1

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

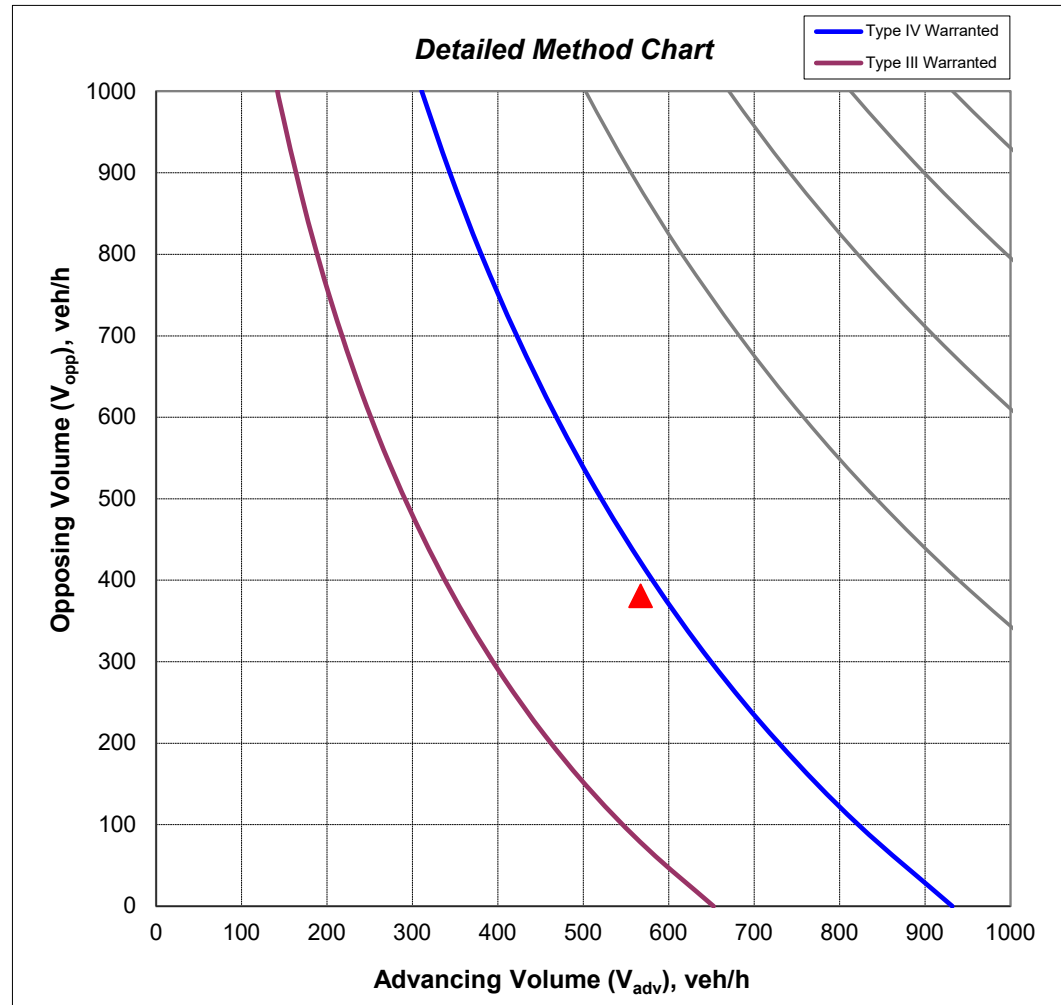
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,120
Minor (intersecting) Road A.A.D.T	290
Left turn volume (V_{LT}), veh/h:	-
Advancing volume (V_{adv}), veh/h:	557
Opposing volume (V_{opp}), veh/h:	350
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	60

OUTPUT	Value
Percent left-turns in advancing volume:	0.0%
Percent trucks in left turn volume:	#DIV/0!
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.0%
Calculated conflicts per hour, veh/h:	0.0

Use Detailed Method

#DIV/0!

#DIV/0!	base storage requirement	#DIV/0!
	- standard storage length	#DIV/0!
	+ additional truck storage	#DIV/0!
	= total additional storage required	#DIV/0!

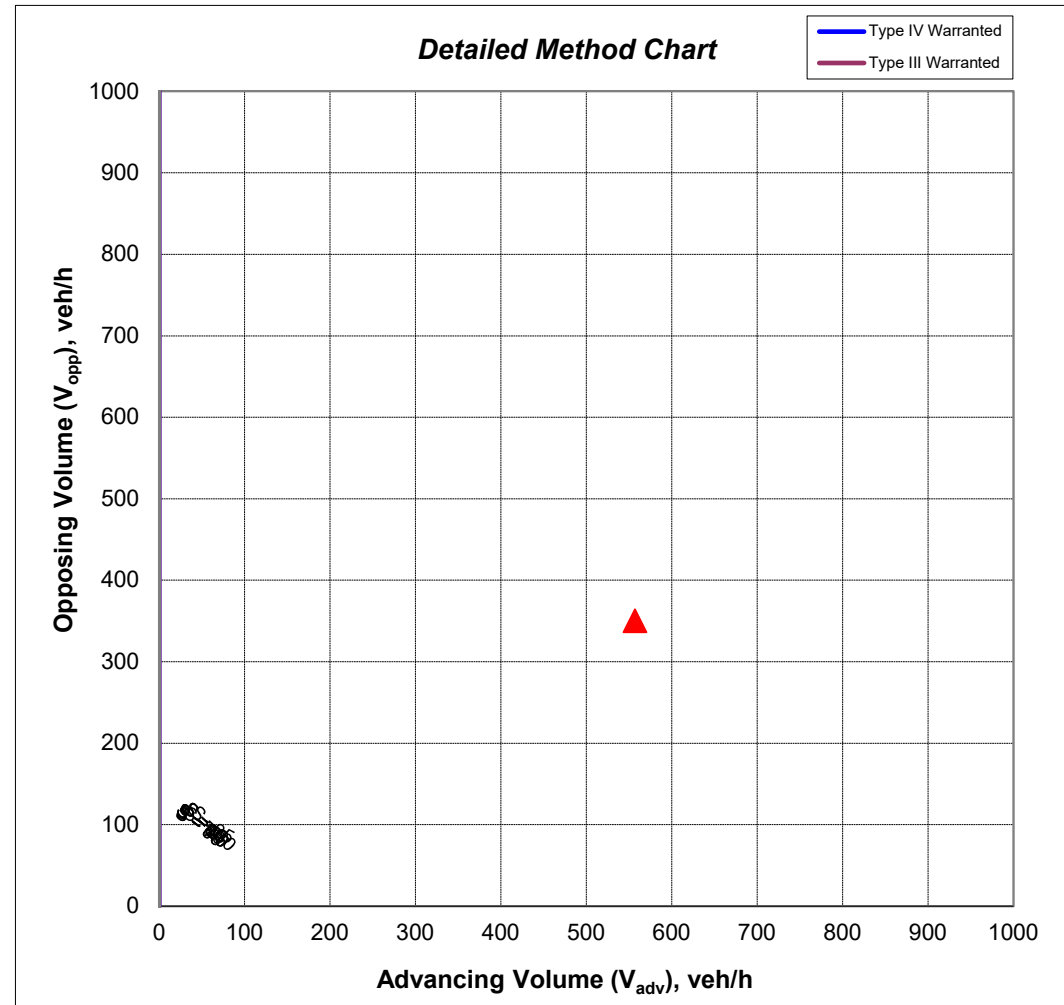
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,260
Minor (intersecting) Road A.A.D.T	60
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	521
Opposing volume (V_{opp}), veh/h:	388
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	10

OUTPUT	Value
Percent left-turns in advancing volume:	0.2%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.1%
Calculated conflicts per hour, veh/h:	0.4

Type I or Type II

Detailed Method Not Required

	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

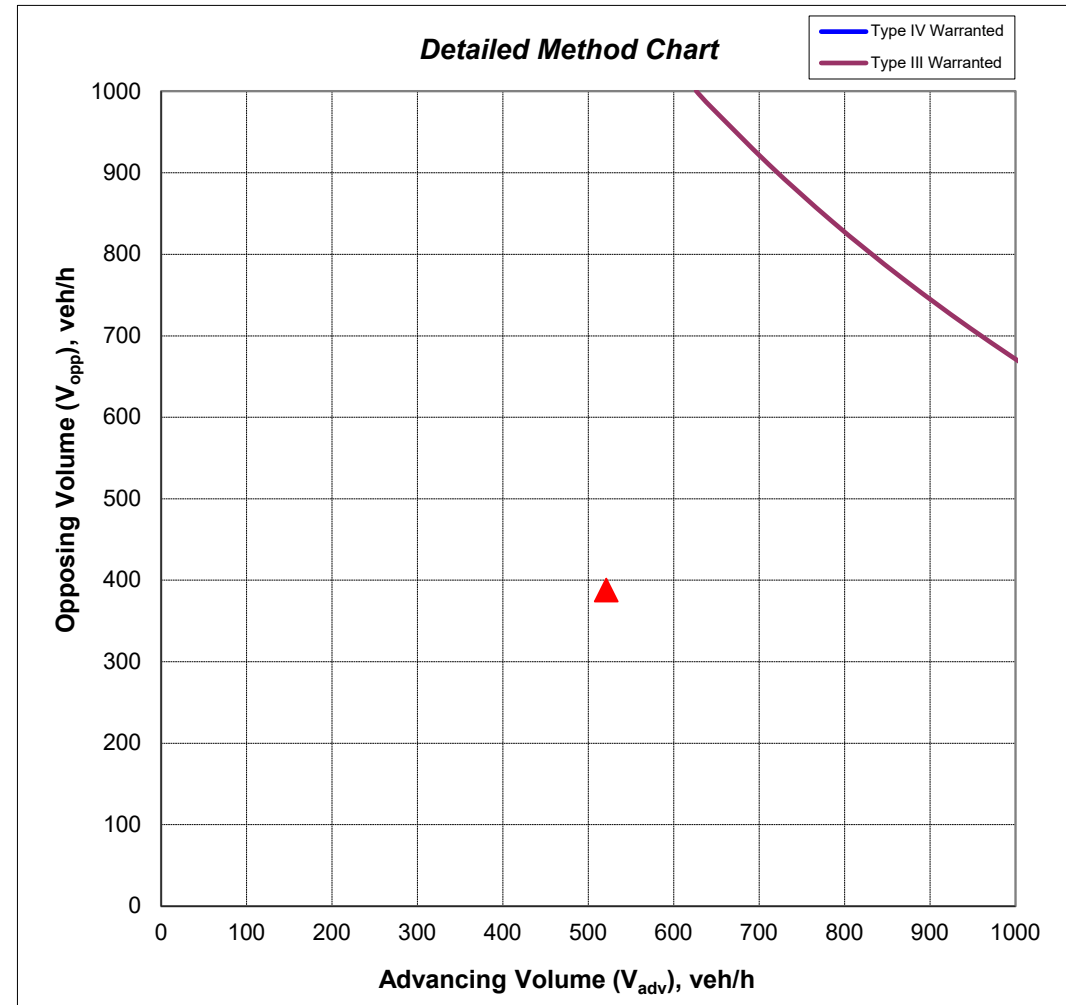
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	8,440
Minor (intersecting) Road A.A.D.T	350
Left turn volume (V_{LT}), veh/h:	14
Advancing volume (V_{adv}), veh/h:	525
Opposing volume (V_{opp}), veh/h:	383
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	130

OUTPUT	Value
Percent left-turns in advancing volume:	2.7%
Percent trucks in left turn volume:	7.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.2%
Calculated conflicts per hour, veh/h:	6.1

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

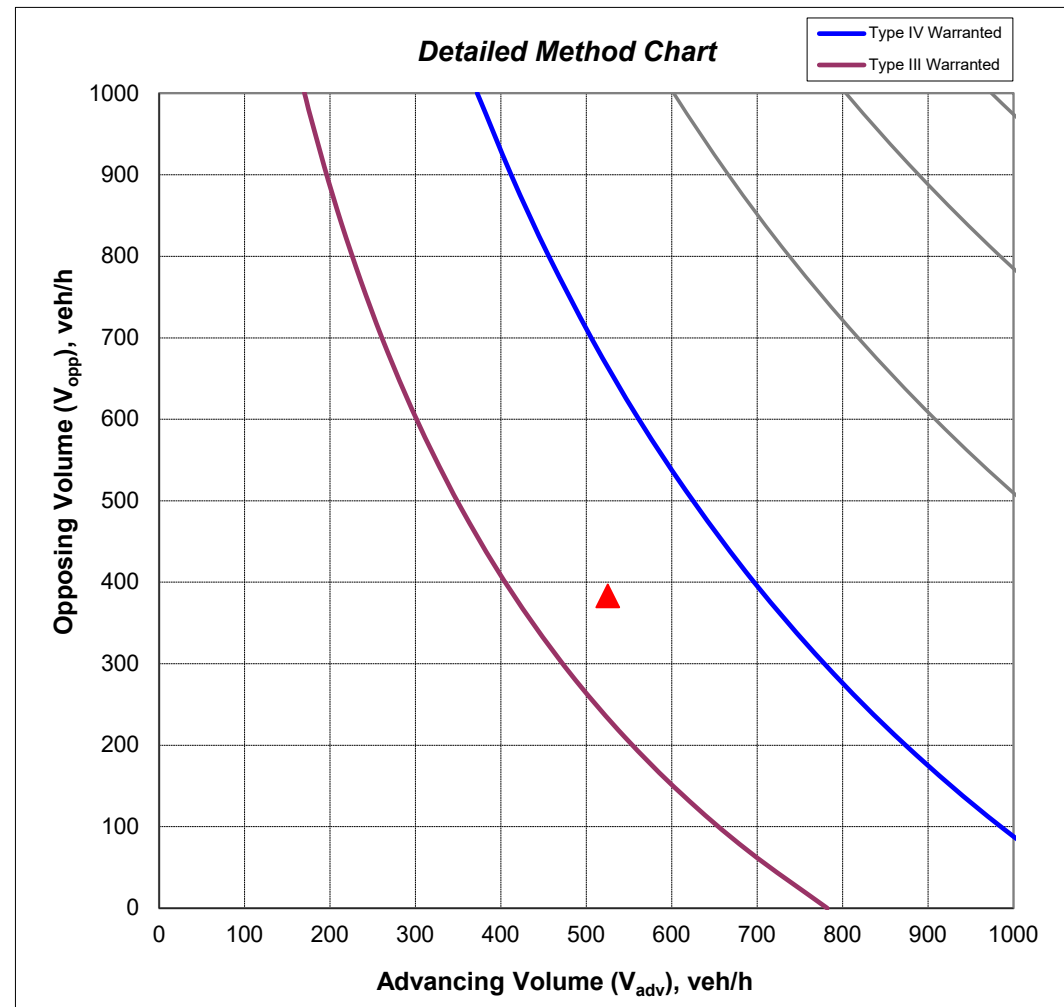
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	9,660
Minor (intersecting) Road A.A.D.T	670
Left turn volume (V_{LT}), veh/h:	32
Advancing volume (V_{adv}), veh/h:	621
Opposing volume (V_{opp}), veh/h:	388
Left turn truck volume, trucks/h:	3
Right turn volume (V_{RT}), veh/day:	290

OUTPUT	Value
Percent left-turns in advancing volume:	5.2%
Percent trucks in left turn volume:	9.4%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	3.1%
Calculated conflicts per hour, veh/h:	19.4

Use Detailed Method

Type IV

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

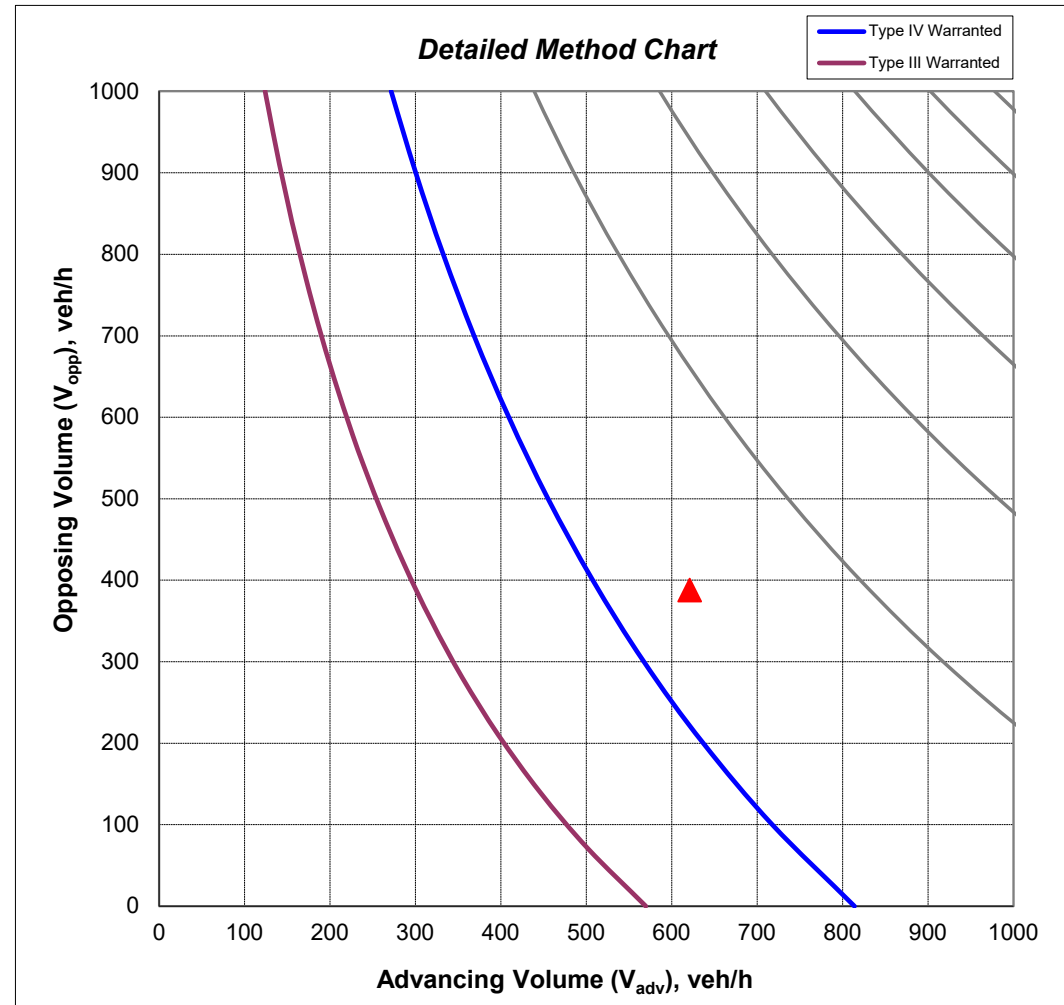
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	10,610
Minor (intersecting) Road A.A.D.T	210
Left turn volume (V_{LT}), veh/h:	12
Advancing volume (V_{adv}), veh/h:	720
Opposing volume (V_{opp}), veh/h:	443
Left turn truck volume, trucks/h:	1
Right turn volume (V_{RT}), veh/day:	-

OUTPUT	Value
Percent left-turns in advancing volume:	1.7%
Percent trucks in left turn volume:	8.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.6%
Calculated conflicts per hour, veh/h:	11.4

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	- <i>standard storage length</i>	-
	+ <i>additional truck storage</i>	-
	= total additional storage required	-

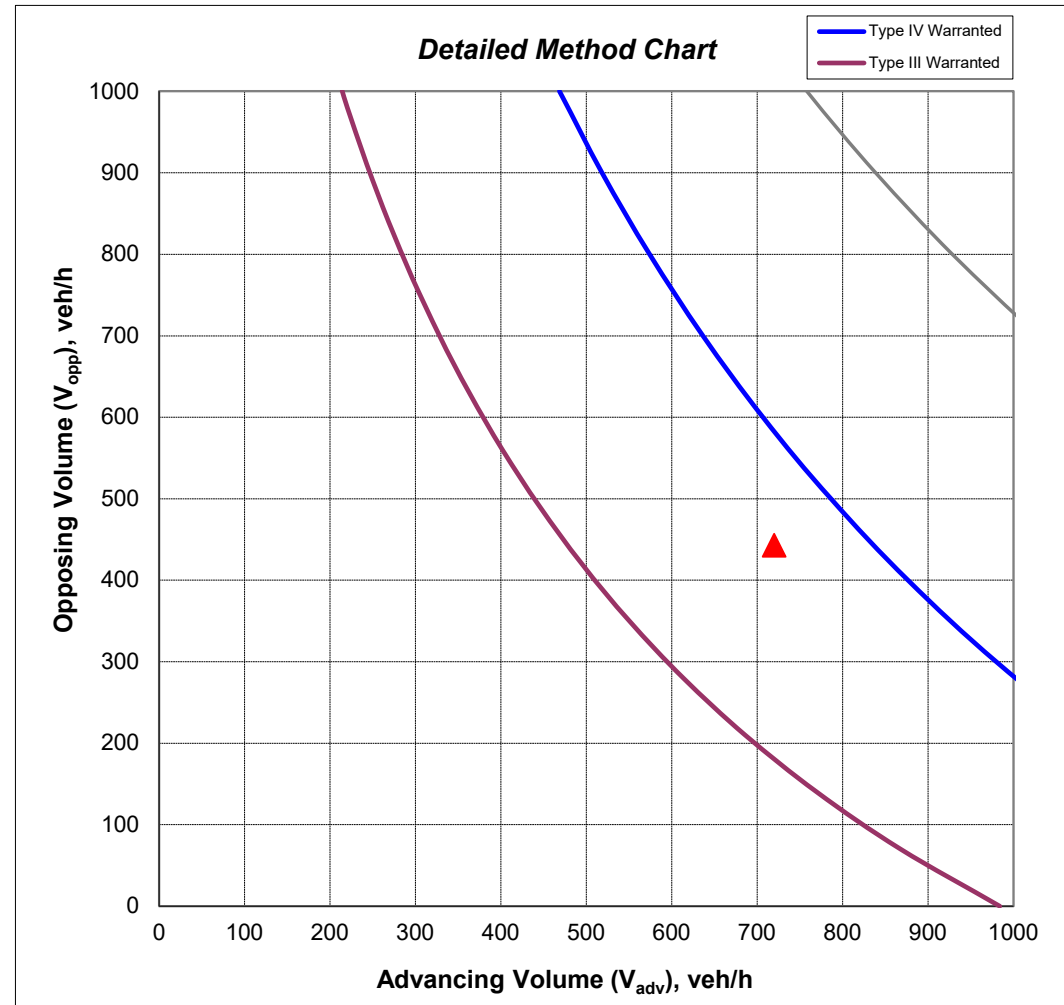
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 51 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,620
Minor (intersecting) Road A.A.D.T	1,130
Left turn volume (V_{LT}), veh/h:	153
Advancing volume (V_{adv}), veh/h:	821
Opposing volume (V_{opp}), veh/h:	477
Left turn truck volume, trucks/h:	12
Right turn volume (V_{RT}), veh/day:	270

OUTPUT	Value
Percent left-turns in advancing volume:	18.6%
Percent trucks in left turn volume:	7.8%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	20.5%
Calculated conflicts per hour, veh/h:	168.5

Use Detailed Method

Type IV

Additional Storage Required	base storage requirement	50 m
	- standard storage length	15 m
	+ additional truck storage	0 m
	= total additional storage required	35 m

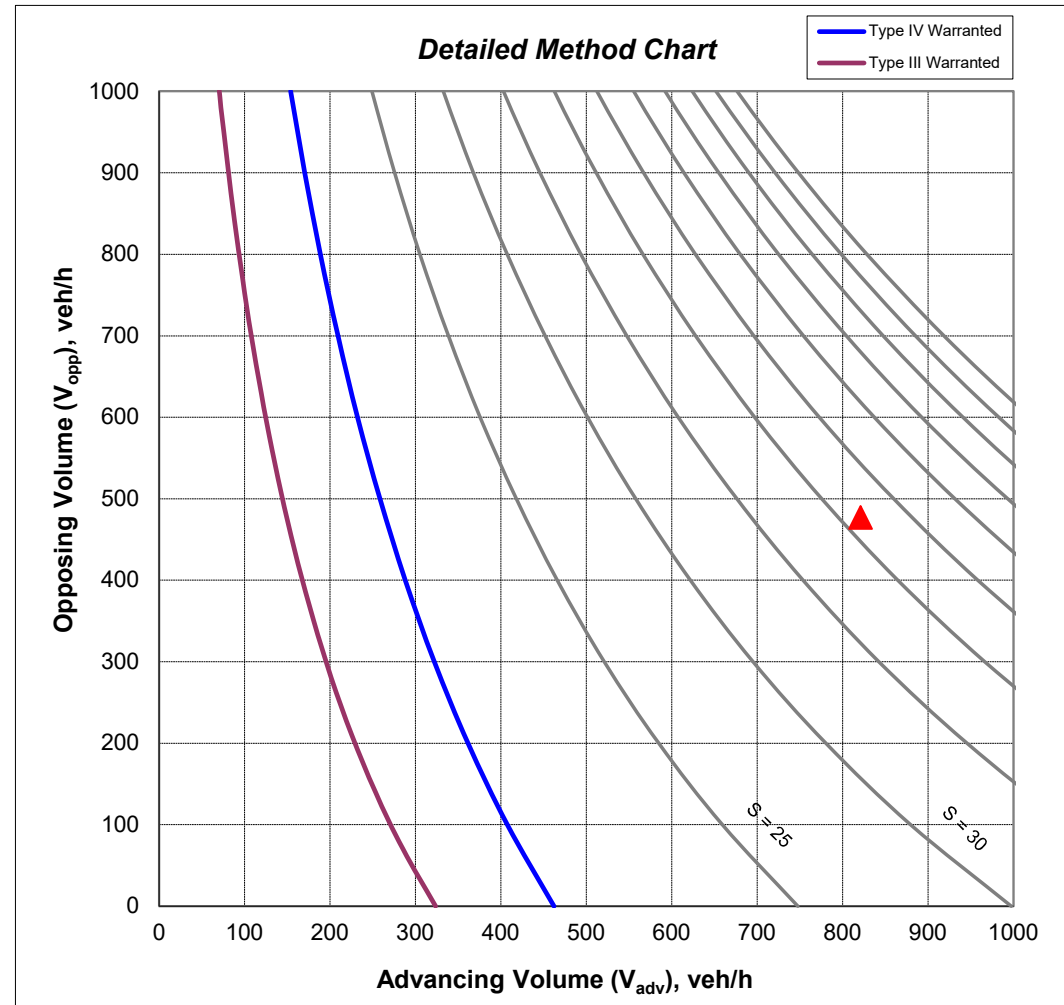
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	13,050
Minor (intersecting) Road A.A.D.T	310
Left turn volume (V_{LT}), veh/h:	3
Advancing volume (V_{adv}), veh/h:	885
Opposing volume (V_{opp}), veh/h:	519
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	110

OUTPUT	Value
Percent left-turns in advancing volume:	0.3%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.6%
Calculated conflicts per hour, veh/h:	5.1

Use Detailed Method

Type II

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

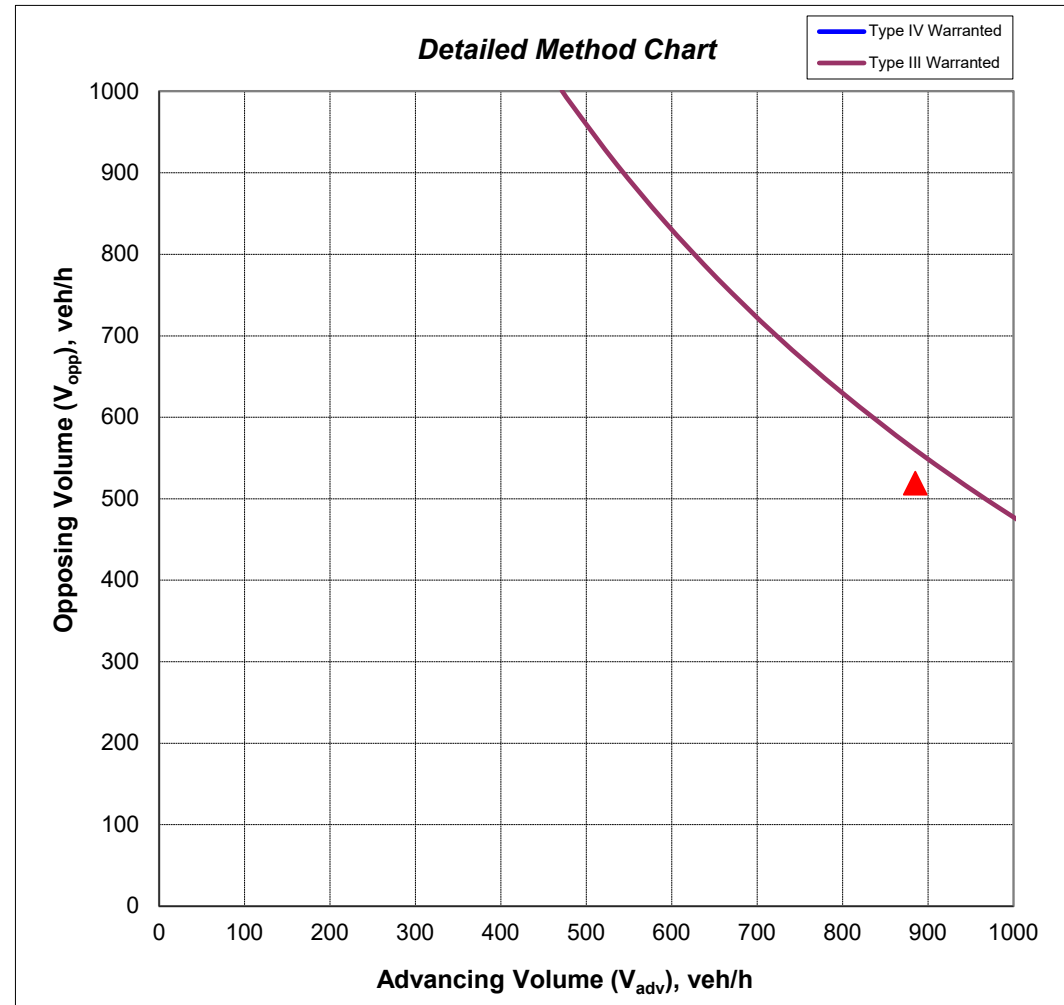
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,440
Minor (intersecting) Road A.A.D.T	940
Left turn volume (V_{LT}), veh/h:	22
Advancing volume (V_{adv}), veh/h:	866
Opposing volume (V_{opp}), veh/h:	567
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	210

OUTPUT	Value
Percent left-turns in advancing volume:	2.5%
Percent trucks in left turn volume:	9.1%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	4.5%
Calculated conflicts per hour, veh/h:	39.2

Use Detailed Method

Type IV

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

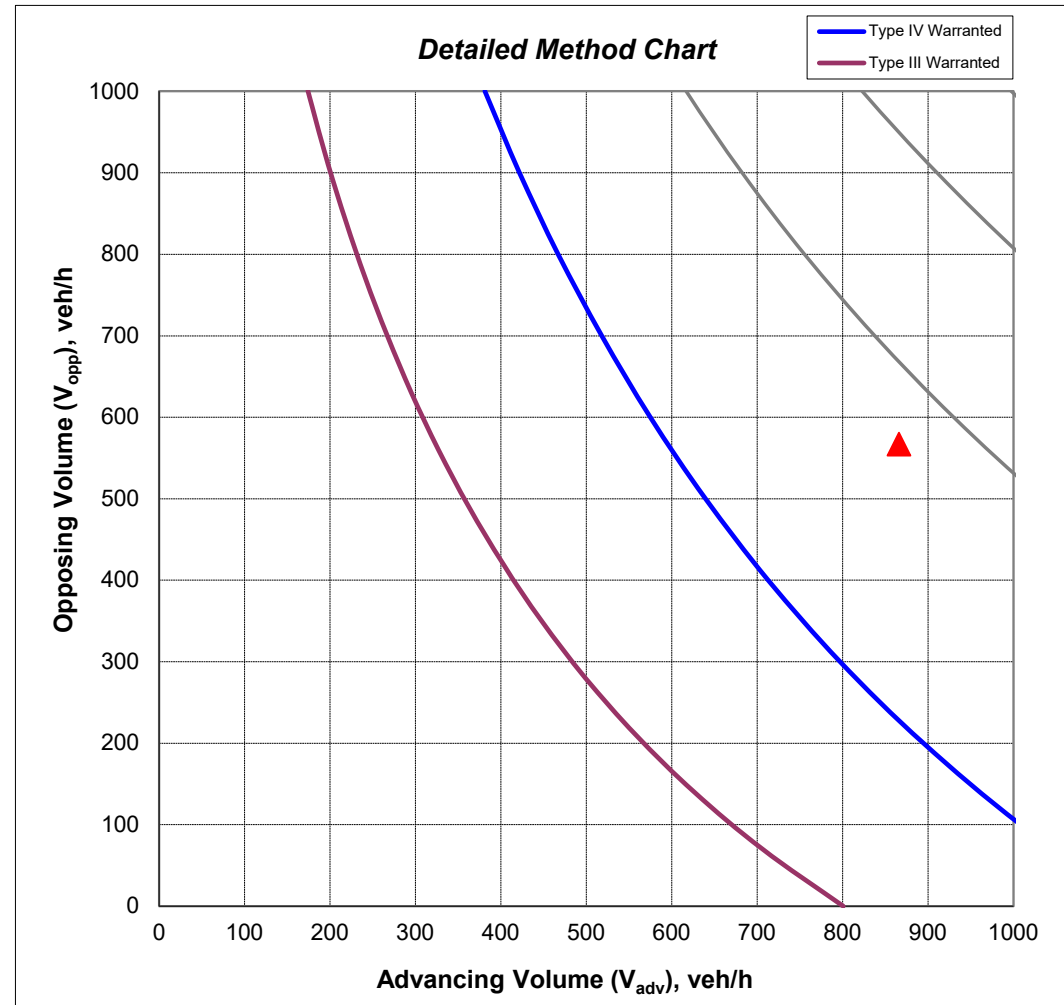
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,740
Minor (intersecting) Road A.A.D.T	290
Left turn volume (V_{LT}), veh/h:	-
Advancing volume (V_{adv}), veh/h:	877
Opposing volume (V_{opp}), veh/h:	550
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	60

OUTPUT	Value
Percent left-turns in advancing volume:	0.0%
Percent trucks in left turn volume:	#DIV/0!
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.0%
Calculated conflicts per hour, veh/h:	0.0

Use Detailed Method

#DIV/0!

#DIV/0!	base storage requirement	#DIV/0!
	- standard storage length	#DIV/0!
	+ additional truck storage	#DIV/0!
	= total additional storage required	#DIV/0!

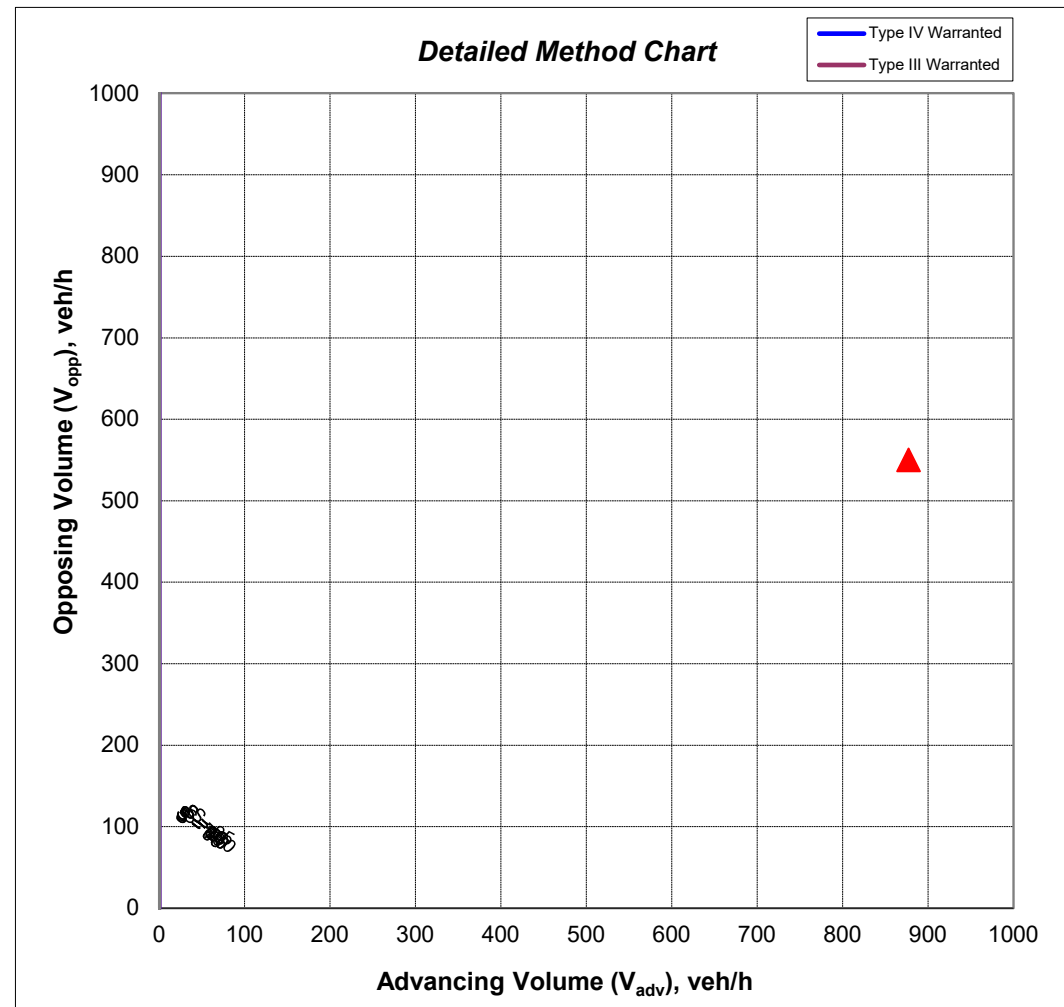
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	13,270
Minor (intersecting) Road A.A.D.T	40
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	822
Opposing volume (V_{opp}), veh/h:	610
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	10

OUTPUT	Value
Percent left-turns in advancing volume:	0.1%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	0.2%
Calculated conflicts per hour, veh/h:	1.8

Type I or Type II

Detailed Method Not Required

	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

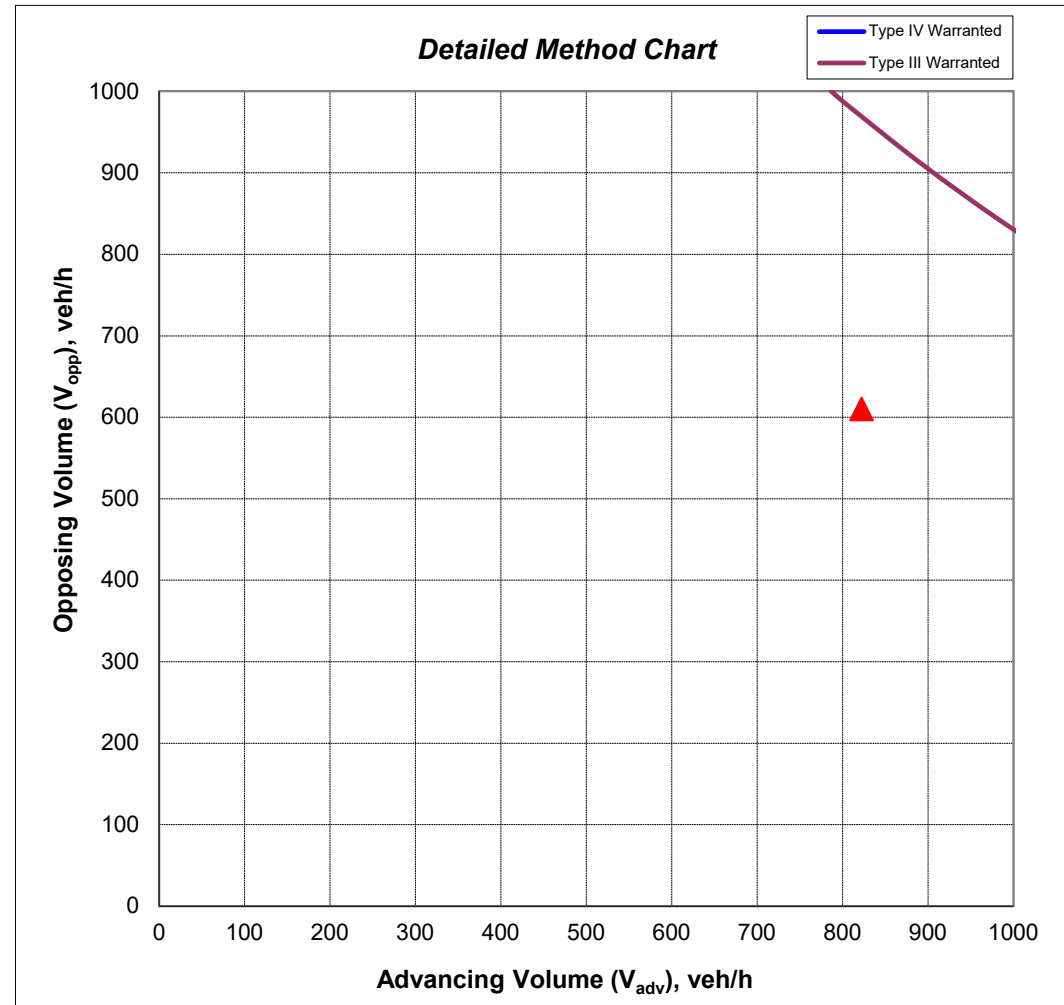
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	12,610
Minor (intersecting) Road A.A.D.T	910
Left turn volume (V_{LT}), veh/h:	120
Advancing volume (V_{adv}), veh/h:	788
Opposing volume (V_{opp}), veh/h:	533
Left turn truck volume, trucks/h:	10
Right turn volume (V_{RT}), veh/day:	400

OUTPUT	Value
Percent left-turns in advancing volume:	15.2%
Percent trucks in left turn volume:	8.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	18.2%
Calculated conflicts per hour, veh/h:	143.1

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	40 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	25 m

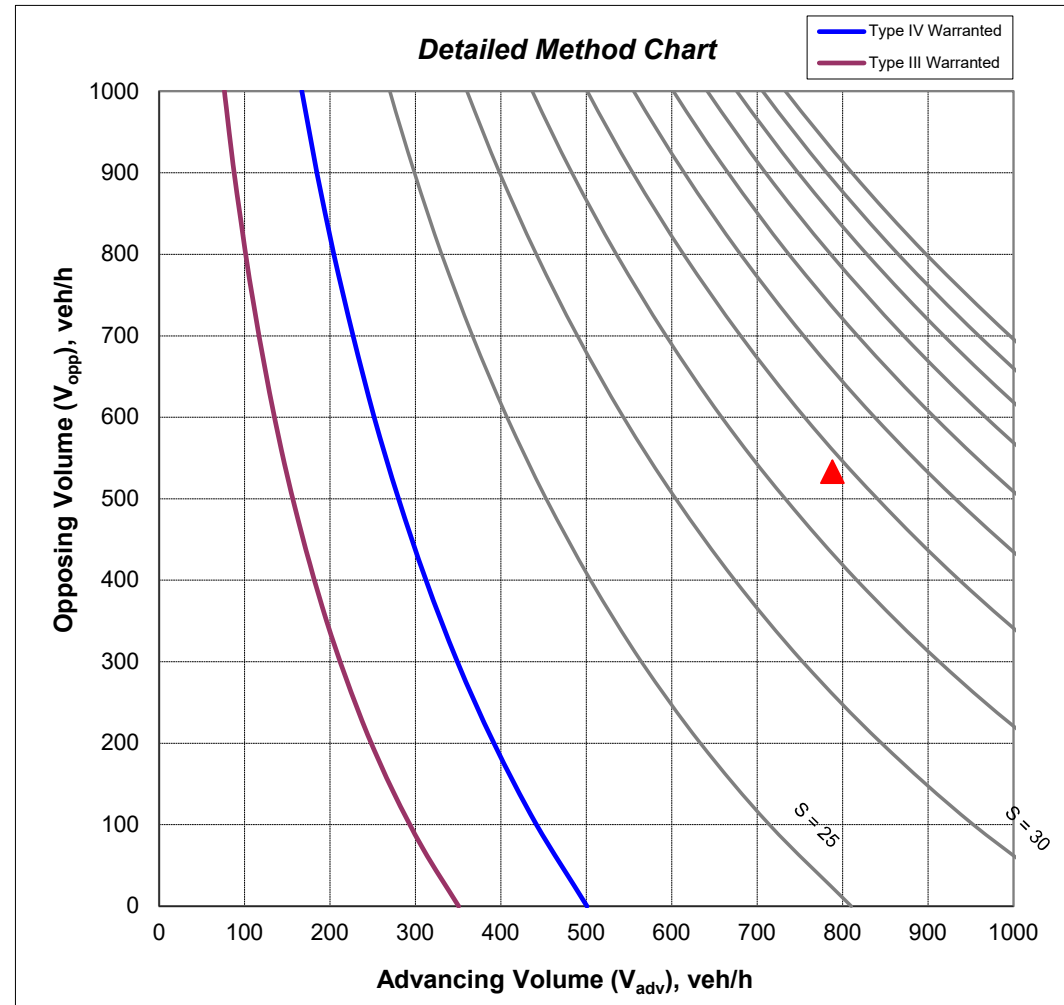
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: Westview Dr.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	14,760
Minor (intersecting) Road A.A.D.T	1,790
Left turn volume (V_{LT}), veh/h:	59
Advancing volume (V_{adv}), veh/h:	899
Opposing volume (V_{opp}), veh/h:	595
Left turn truck volume, trucks/h:	5
Right turn volume (V_{RT}), veh/day:	710

OUTPUT	Value
Percent left-turns in advancing volume:	6.6%
Percent trucks in left turn volume:	8.5%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	12.8%
Calculated conflicts per hour, veh/h:	115.1

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	30 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	15 m

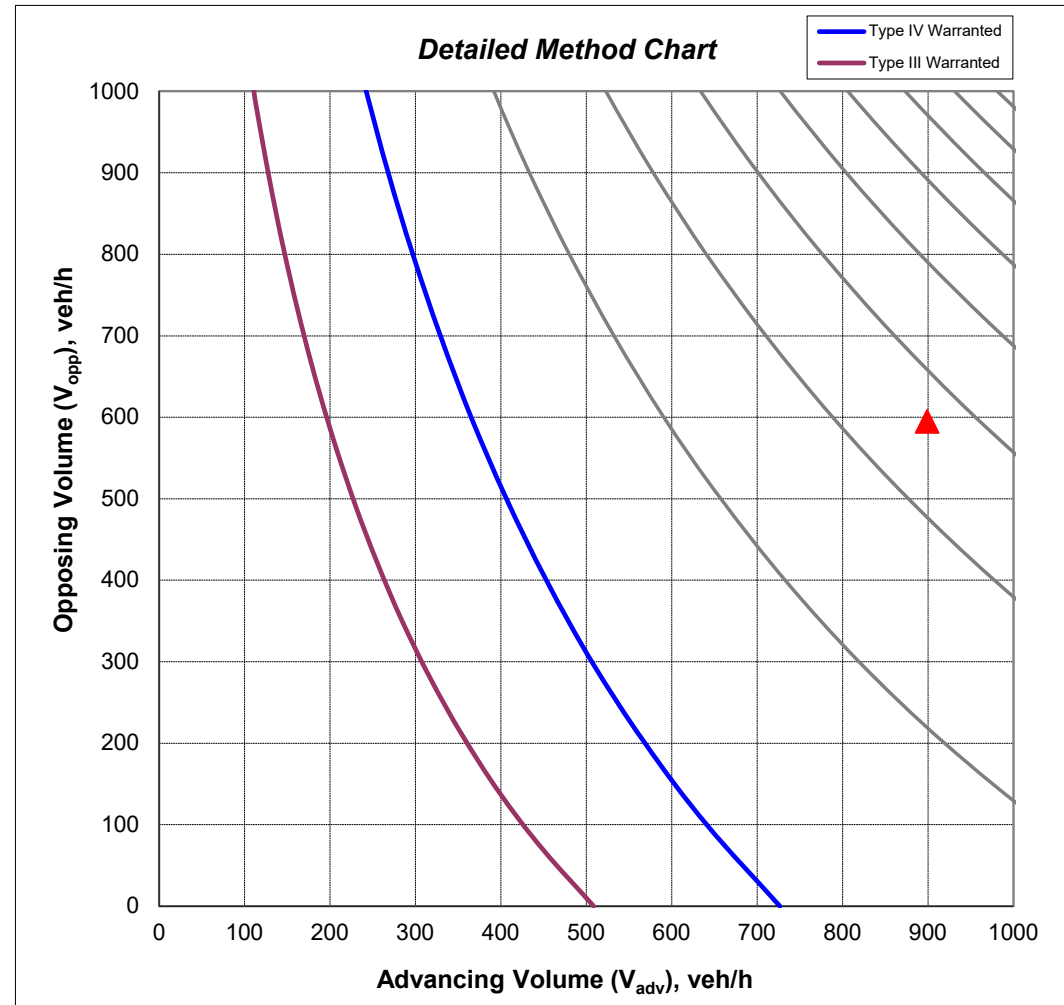
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 52 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	15,880
Minor (intersecting) Road A.A.D.T	410
Left turn volume (V_{LT}), veh/h:	24
Advancing volume (V_{adv}), veh/h:	1,123
Opposing volume (V_{opp}), veh/h:	681
Left turn truck volume, trucks/h:	2
Right turn volume (V_{RT}), veh/day:	-

OUTPUT	Value
Percent left-turns in advancing volume:	2.1%
Percent trucks in left turn volume:	8.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	8.2%
Calculated conflicts per hour, veh/h:	91.6

Use Detailed Method

Type IV

Additional Storage Required	<i>base storage requirement</i>	25 m
	<i>- standard storage length</i>	15 m
	<i>+ additional truck storage</i>	0 m
	= total additional storage required	10 m

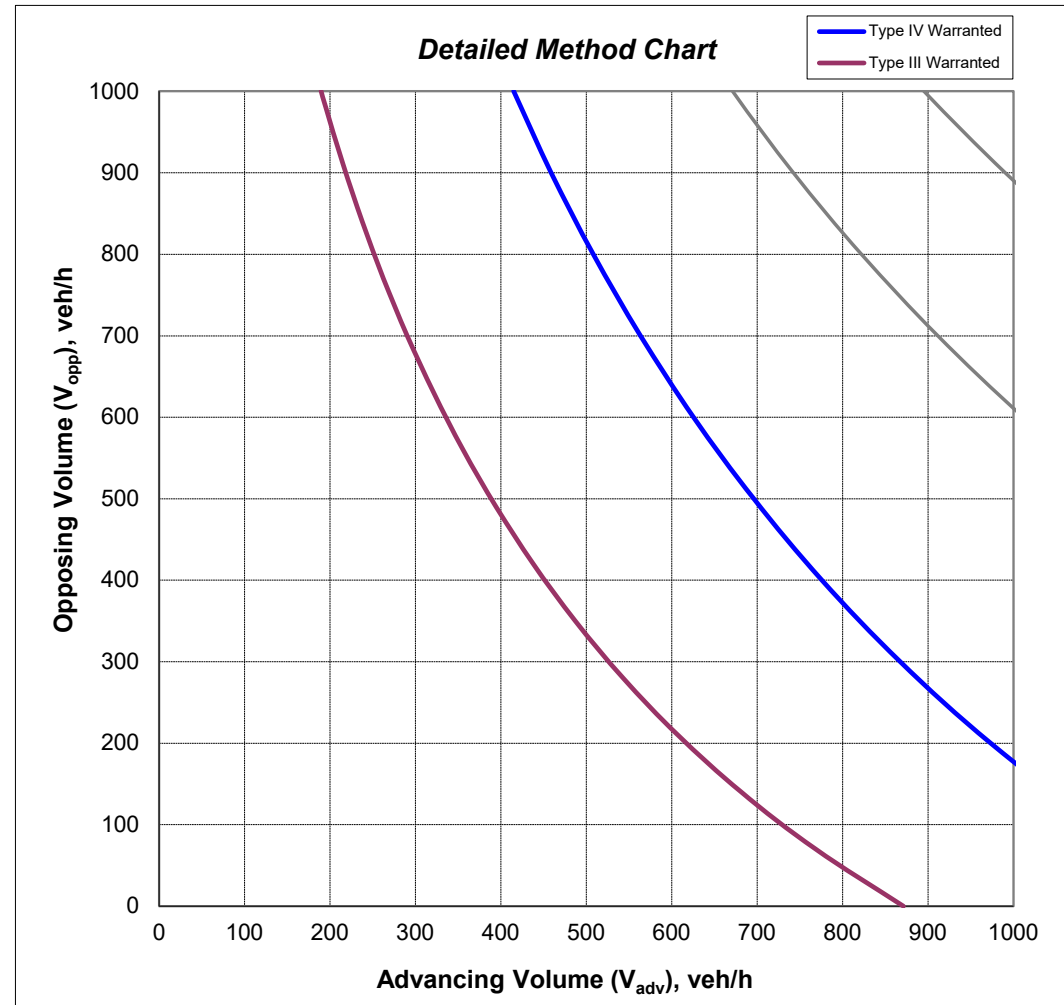
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 51 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,250
Minor (intersecting) Road A.A.D.T	2,760
Left turn volume (V_{LT}), veh/h:	219
Advancing volume (V_{adv}), veh/h:	1,168
Opposing volume (V_{opp}), veh/h:	723
Left turn truck volume, trucks/h:	18
Right turn volume (V_{RT}), veh/day:	820

OUTPUT	Value
Percent left-turns in advancing volume:	18.8%
Percent trucks in left turn volume:	8.2%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	70.2%
Calculated conflicts per hour, veh/h:	819.4

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	95 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	80 m

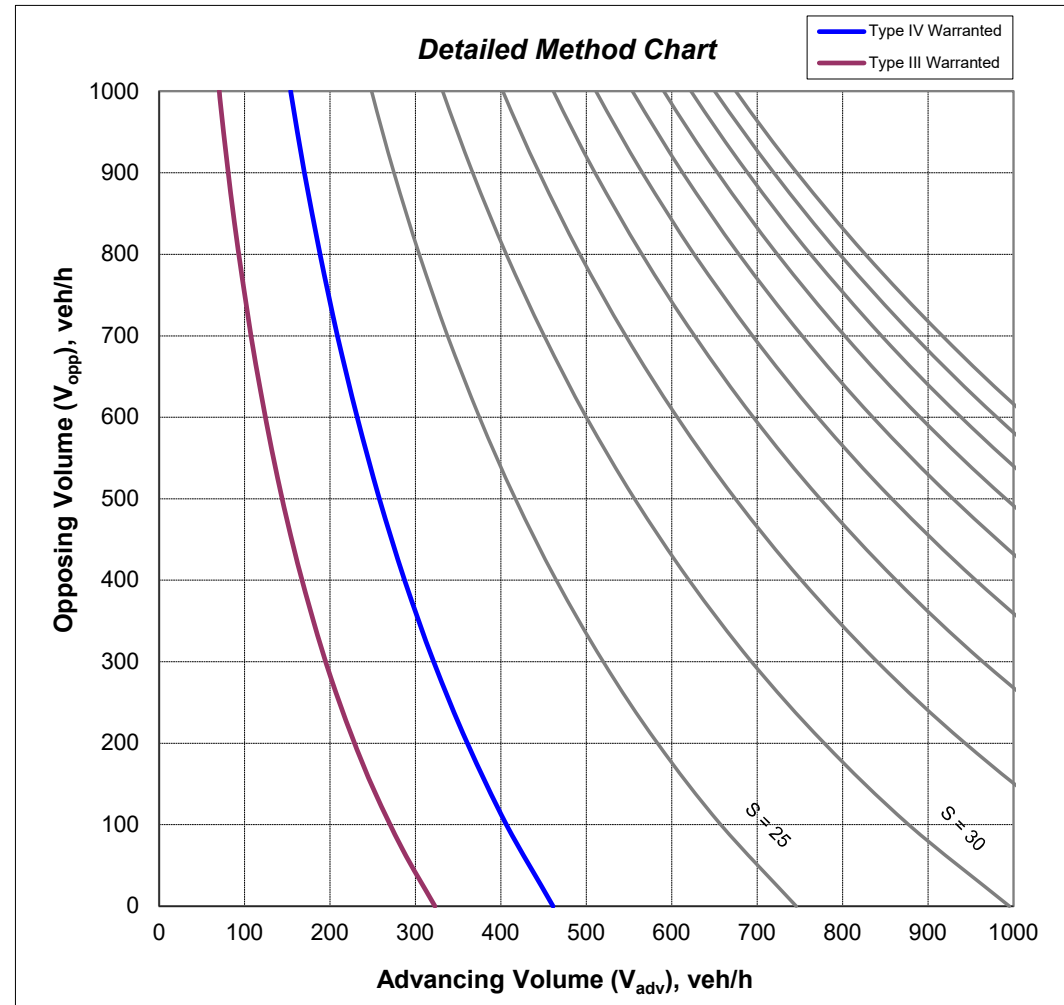
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 50 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,680
Minor (intersecting) Road A.A.D.T	360
Left turn volume (V_{LT}), veh/h:	3
Advancing volume (V_{adv}), veh/h:	1,336
Opposing volume (V_{opp}), veh/h:	879
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	120

OUTPUT	Value
Percent left-turns in advancing volume:	0.2%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.9%
Calculated conflicts per hour, veh/h:	24.8

Use Detailed Method

Type III

Additional Storage Not Required	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

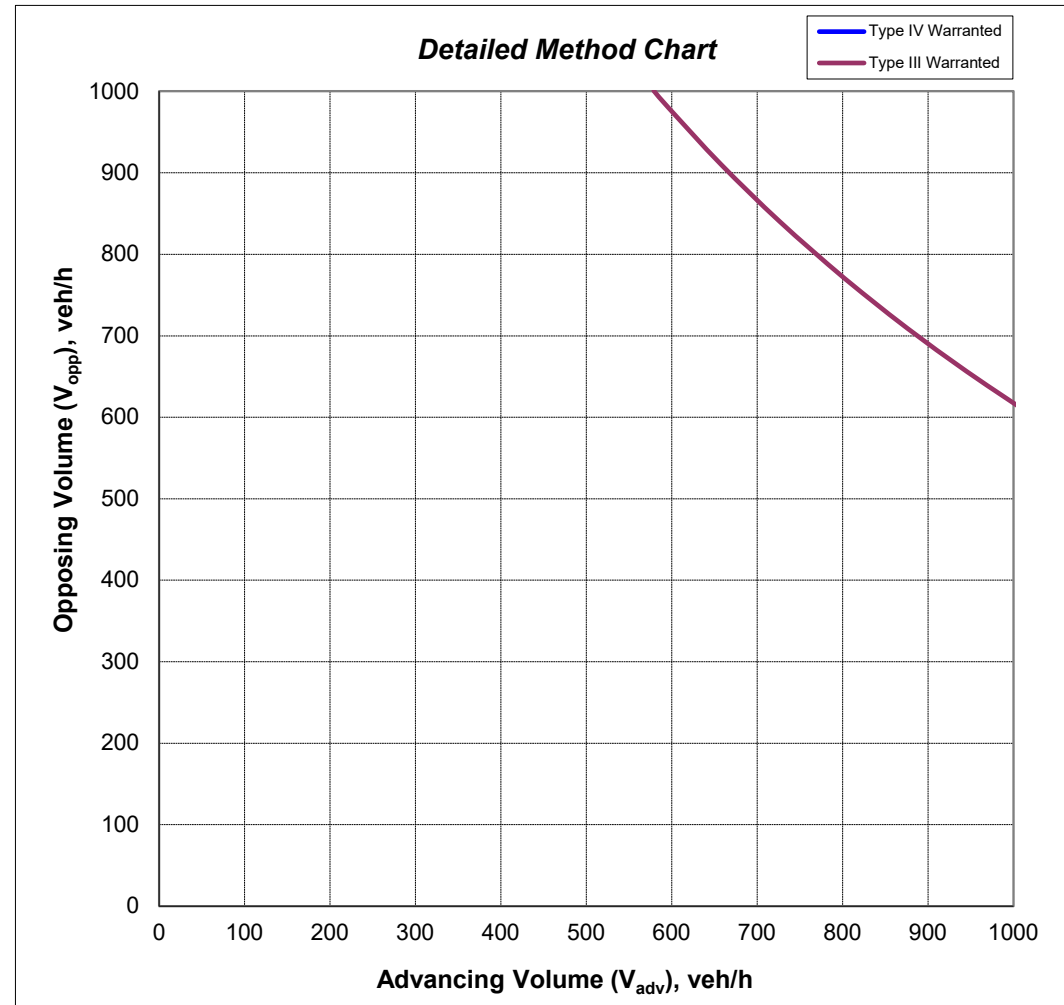
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 49 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,500
Minor (intersecting) Road A.A.D.T	2,420
Left turn volume (V_{LT}), veh/h:	94
Advancing volume (V_{adv}), veh/h:	1,232
Opposing volume (V_{opp}), veh/h:	926
Left turn truck volume, trucks/h:	8
Right turn volume (V_{RT}), veh/day:	600

OUTPUT	Value
Percent left-turns in advancing volume:	7.6%
Percent trucks in left turn volume:	8.5%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	54.7%
Calculated conflicts per hour, veh/h:	673.7

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	95 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	80 m

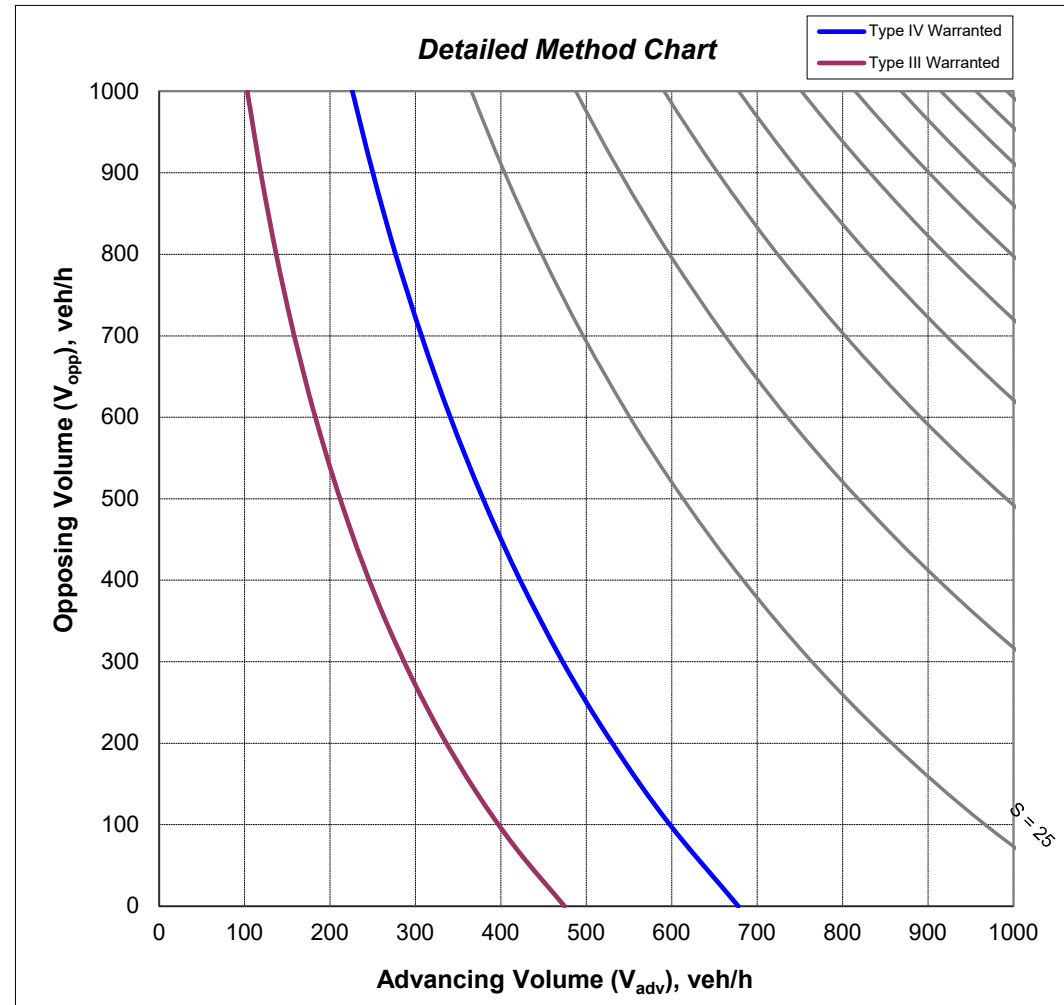
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 47 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	19,830
Minor (intersecting) Road A.A.D.T	2,370
Left turn volume (V_{LT}), veh/h:	72
Advancing volume (V_{adv}), veh/h:	1,196
Opposing volume (V_{opp}), veh/h:	994
Left turn truck volume, trucks/h:	6
Right turn volume (V_{RT}), veh/day:	580

OUTPUT	Value
Percent left-turns in advancing volume:	6.0%
Percent trucks in left turn volume:	8.3%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	47.5%
Calculated conflicts per hour, veh/h:	567.6

Use Detailed Method

Type IV	RT Lane warranted
Additional Storage Required	
base storage requirement	95 m
- standard storage length	15 m
+ additional truck storage	0 m
= total additional storage required	80 m

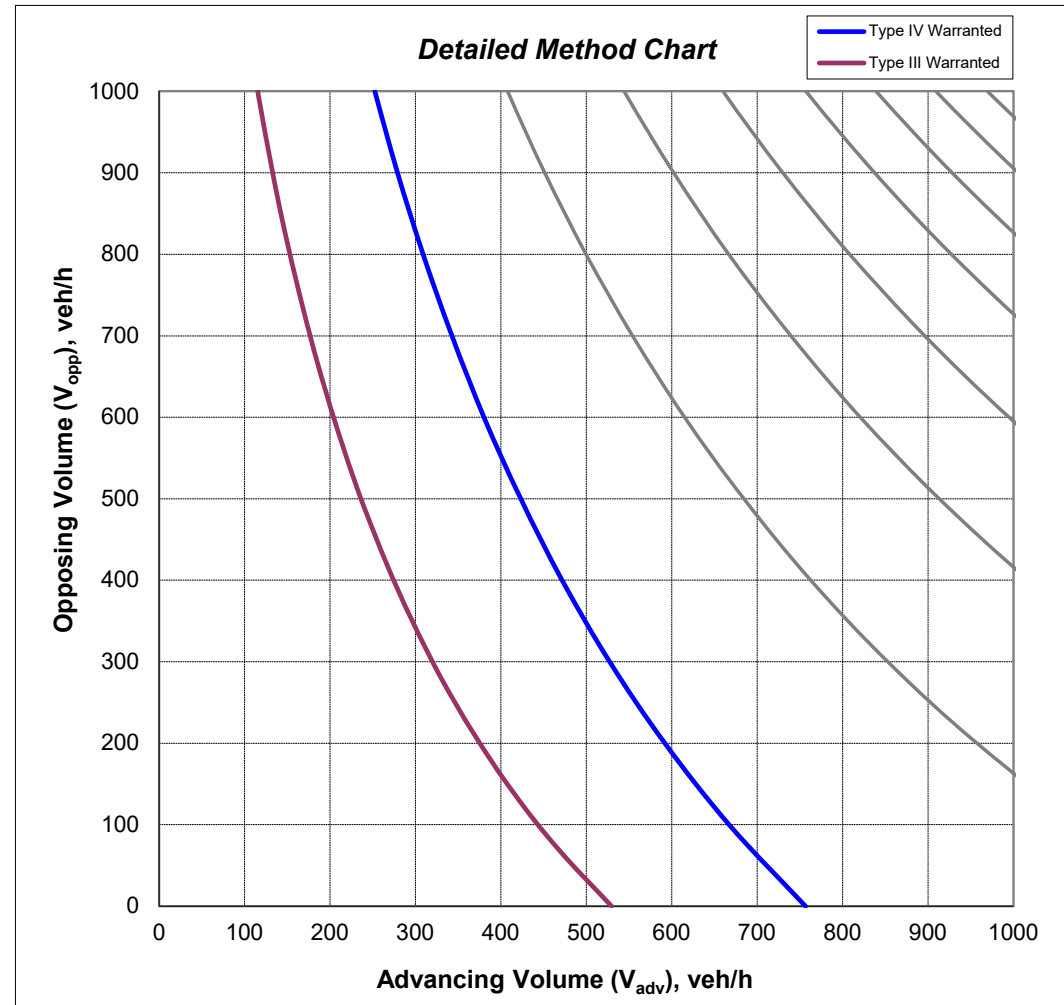
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: 45 St.

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





Intersection Analysis Rural Two-Lane Undivided Highways

INPUT	Value
85 th percentile speed, km/h:	60
Main Road A.A.D.T.	20,340
Minor (intersecting) Road A.A.D.T	40
Left turn volume (V_{LT}), veh/h:	1
Advancing volume (V_{adv}), veh/h:	1,208
Opposing volume (V_{opp}), veh/h:	1,153
Left turn truck volume, trucks/h:	-
Right turn volume (V_{RT}), veh/day:	10

OUTPUT	Value
Percent left-turns in advancing volume:	0.1%
Percent trucks in left turn volume:	0.0%
Probability of conflict threshold:	2.14%
Calculated probability of conflicting arrival:	1.0%
Calculated conflicts per hour, veh/h:	11.8

Type I or Type II

Detailed Method Not Required

	<i>base storage requirement</i>	-
	<i>- standard storage length</i>	-
	<i>+ additional truck storage</i>	-
	= total additional storage required	-

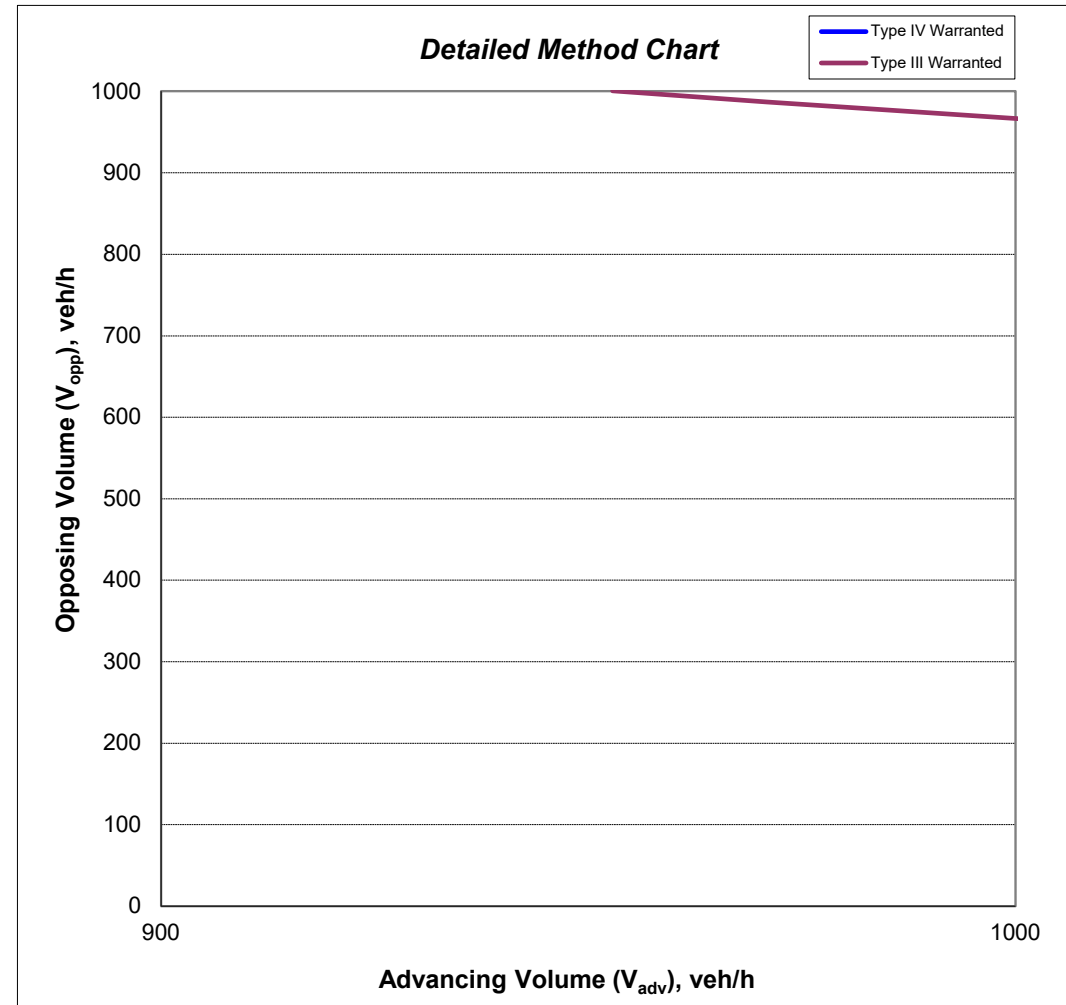
CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway (gap), s:	5.0
Average time to clear, s:	1.9

Main Rd: 50 Ave.
Minor Rd: RR. 265

Direction: WB
Period: PM. Peak

Year of Analysis: 2025
Date of Analysis: 26-Jun-2025





APPENDIX
Synchro Analysis Reports

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Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	300	1	1	252	1	1	0	11	33	0	2
Future Volume (vph)	1	300	1	1	252	1	1	0	11	33	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. 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
Frt			0.850			0.850		0.875			0.993	
Flt Protected								0.996			0.955	
Satd. Flow (prot)	0	1847	1570	0	1812	1541	0	1641	0	0	1786	0
Flt Permitted								0.996			0.955	
Satd. Flow (perm)	0	1847	1570	0	1812	1541	0	1641	0	0	1786	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			116.0			182.8	
Travel Time (s)		7.5			7.5			13.9			21.9	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	349	1	1	293	1	1	0	13	38	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	1	0	294	1	0	14	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.5%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	1	300	1	1	252	1	1	0	11	33	0	2
Future Vol, veh/h	1	300	1	1	252	1	1	0	11	33	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	-	-	-	-	-	-
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	1	349	1	1	293	1	1	0	13	38	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	350	0	0	648	647	349	653	647	293
Stage 1	-	-	-	-	-	-	351	351	-	295	295	-
Stage 2	-	-	-	-	-	-	297	296	-	358	352	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	256	-	-	1187	-	-	383	390	694	380	390	746
Stage 1	-	-	-	-	-	-	666	632	-	713	669	-
Stage 2	-	-	-	-	-	-	712	668	-	660	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	256	-	-	1187	-	-	381	389	694	372	389	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	381	389	-	372	389	-
Stage 1	-	-	-	-	-	-	665	631	-	712	668	-
Stage 2	-	-	-	-	-	-	709	667	-	647	631	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10.7			15.5		
HCM LOS							B			C		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	650	1256	-	-	1187	-	-	383				
HCM Lane V/C Ratio	0.021	0.001	-	-	0.001	-	-	0.106				
HCM Control Delay (s)	10.7	7.9	0	-	8	0	-	15.5				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4				

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	350	1	4	255	4	1	0	41	52	0	2
Future Volume (vph)	1	350	1	4	255	4	1	0	41	52	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.998			0.868			0.996	
Flt Protected					0.999			0.999			0.954	
Satd. Flow (prot)	0	1812	0	0	1860	0	0	1572	0	0	1790	0
Flt Permitted					0.999			0.999			0.954	
Satd. Flow (perm)	0	1812	0	0	1860	0	0	1572	0	0	1790	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	1	407	1	5	297	5	1	0	48	60	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	307	0	0	49	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.4%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection															
Int Delay, s/veh	2.2														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		↕			↕			↕			↕				
Traffic Vol, veh/h	1	350	1	4	255	4	1	0	41	52	0	2			
Future Vol, veh/h	1	350	1	4	255	4	1	0	41	52	0	2			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop			
RT Channelized	-	- None		-	- None		-	- None		-	- None				
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-			
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-			
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-			
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86			
Heavy Vehicles, %	6	6	6	3	3	3	6	6	6	2	2	2			
Mvmt Flow	1	407	1	5	297	5	1	0	48	60	0	2			
Major/Minor	Major1		Major2		Minor1		Minor2								
Conflicting Flow All	302	0	0	408	0	0	721	722	408	744	720	300			
Stage 1	-	-	-	-	-	-	410	410	-	310	310	-			
Stage 2	-	-	-	-	-	-	311	312	-	434	410	-			
Critical Hdwy	4.16	-	-	4.13	-	-	7.16	6.56	6.26	7.12	6.52	6.22			
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-			
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.554	4.054	3.354	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1237	-	-	1145	-	-	337	348	635	331	354	740			
Stage 1	-	-	-	-	-	-	611	589	-	700	659	-			
Stage 2	-	-	-	-	-	-	691	650	-	600	595	-			
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-			
Mov Cap-1 Maneuver	1237	-	-	1145	-	-	334	346	635	305	352	740			
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	346	-	305	352	-			
Stage 1	-	-	-	-	-	-	610	588	-	699	656	-			
Stage 2	-	-	-	-	-	-	685	647	-	554	594	-			
Approach	EB		WB		NB		SB								
HCM Control Delay, s	0		0.1		11.3		19.4								
HCM LOS					B		C								
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)		622	1237	-	-	1145	-	-	312						
HCM Lane V/C Ratio		0.079	0.001	-	-	0.004	-	-	0.201						
HCM Control Delay (s)		11.3	7.9	0	-	8.2	0	-	19.4						
HCM Lane LOS		B	A	A	-	A	A	-	C						
HCM 95th %tile Q(veh)		0.3	0	-	-	0	-	-	0.7						

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	443	1	3	266	1	11
Future Volume (vph)	443	1	3	266	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.875	
Flt Protected					0.996	
Satd. Flow (prot)	1830	0	0	1883	1641	0
Flt Permitted					0.996	
Satd. Flow (perm)	1830	0	0	1883	1641	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	515	1	3	309	1	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	516	0	0	312	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.2

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations

Traffic Vol, veh/h 443 1 3 266 1 11

Future Vol, veh/h 443 1 3 266 1 11

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 2 2 2 2

Mvmt Flow 515 1 3 309 1 13

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 516 0 831 516

Stage 1 - - - - 516 -

Stage 2 - - - - 315 -

Critical Hdwy - - 4.12 - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - -2.218 -3.518 3.318

Pot Cap-1 Maneuver - - 1050 - 340 559

Stage 1 - - - - 599 -

Stage 2 - - - - 740 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1050 - 339 559

Mov Cap-2 Maneuver - - - - 339 -

Stage 1 - - - - 599 -

Stage 2 - - - - 738 -

Approach EB WB NB

HCM Control Delay, s 0 0.1 12

HCM LOS B

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 530 - - 1050 -

HCM Lane V/C Ratio 0.026 - -0.003 -

HCM Control Delay (s) 12 - - 8.4 0

HCM Lane LOS B - - A A

HCM 95th %tile Q(veh) 0.1 - - 0 -

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	450	33	50	253	30	10	20	91	30	20	10
Future Volume (vph)	30	450	33	50	253	30	10	20	91	30	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	30.0			30.0			0.0			0.0		
Lane Util. 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
Frt		0.990			0.984			0.899			0.977	
Flt Protected	0.950			0.950				0.996			0.976	
Satd. Flow (prot)	1706	1777	0	1722	1783	0	0	1686	0	0	1796	0
Flt Permitted	0.950			0.950				0.996			0.976	
Satd. Flow (perm)	1706	1777	0	1722	1783	0	0	1686	0	0	1796	0
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			123.5			769.4			203.6	
Travel Time (s)		14.6			8.9			55.4			24.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	35	523	38	58	294	35	12	23	106	35	23	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	561	0	58	329	0	0	141	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.0%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	450	33	50	253	30	10	20	91	30	20	10
Future Vol, veh/h	30	450	33	50	253	30	10	20	91	30	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	30	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	7	7	7	6	6	6	2	2	2	2	2	2
Mvmt Flow	35	523	38	58	294	35	12	23	106	35	23	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	329	0	0	561	0	0	1057	1057	542	1105	1059	312
Stage 1	-	-	-	-	-	-	612	612	-	428	428	-
Stage 2	-	-	-	-	-	-	445	445	-	677	631	-
Critical Hdwy	4.17	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	203	-	-	990	-	-	203	225	540	188	224	728
Stage 1	-	-	-	-	-	-	480	484	-	605	585	-
Stage 2	-	-	-	-	-	-	592	575	-	443	474	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	203	-	-	990	-	-	171	206	540	129	205	728
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	206	-	129	205	-
Stage 1	-	-	-	-	-	-	466	470	-	587	550	-
Stage 2	-	-	-	-	-	-	525	541	-	329	460	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	1.3	20.4	38.9
HCM LOS			C	E

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)		373	1203	-	-	990	-	174
HCM Lane V/C Ratio		0.377	0.029	-	-	0.059	-	0.401
HCM Control Delay (s)		20.4	8.1	-	-	8.9	-	38.9
HCM Lane LOS		C	A	-	-	A	-	E
HCM 95th %tile Q(veh)		1.7	0.1	-	-	0.2	-	1.8

Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	540	1	9	324	12	1	0	16	7	0	1
Future Volume (vph)	1	540	1	9	324	12	1	0	16	7	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.995			0.872			0.985	
Flt Protected					0.999			0.998			0.957	
Satd. Flow (prot)	0	1812	0	0	1854	0	0	1639	0	0	1535	0
Flt Permitted					0.999			0.998			0.957	
Satd. Flow (perm)	0	1812	0	0	1854	0	0	1639	0	0	1535	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		123.5			202.4			85.6			59.8	
Travel Time (s)		8.9			14.6			10.3			4.3	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	1	628	1	10	377	14	1	0	19	8	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	630	0	0	401	0	0	20	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	38.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	540	1	9	324	12	1	0	16	7	0	1
Future Vol, veh/h	1	540	1	9	324	12	1	0	16	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	1	628	1	10	377	14	1	0	19	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	391	0	0	629	0	0	1036	1042	629	1044	1035	384
Stage 1	-	-	-	-	-	-	631	631	-	404	404	-
Stage 2	-	-	-	-	-	-	405	411	-	640	631	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	146	-	-	948	-	-	210	230	482	193	217	630
Stage 1	-	-	-	-	-	-	469	474	-	593	572	-
Stage 2	-	-	-	-	-	-	622	595	-	438	450	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	146	-	-	948	-	-	207	227	482	184	214	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	207	227	-	184	214	-
Stage 1	-	-	-	-	-	-	469	474	-	592	565	-
Stage 2	-	-	-	-	-	-	613	587	-	421	450	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			13.4			23.7		
HCM LOS							B			C		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		447	1146	-	-	948	-	-	202			
HCM Lane V/C Ratio		0.044	0.001	-	-	0.011	-	-	0.046			
HCM Control Delay (s)		13.4	8.1	0	-	8.8	0	-	23.7			
HCM Lane LOS		B	A	A	-	A	A	-	C			
HCM 95th %tile Q(veh)		0.1	0	-	-	0	-	-	0.1			

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

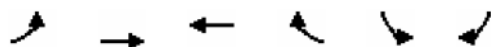
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	471	70	18	300	16	19	2	26	22	3	33
Future Volume (vph)	33	471	70	18	300	16	19	2	26	22	3	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.993			0.925			0.923	
Flt Protected		0.997			0.997			0.980			0.981	
Satd. Flow (prot)	0	1761	0	0	1761	0	0	1691	0	0	1705	0
Flt Permitted		0.997			0.997			0.980			0.981	
Satd. Flow (perm)	0	1761	0	0	1761	0	0	1691	0	0	1705	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		202.4			410.0			91.1			93.6	
Travel Time (s)		14.6			29.5			10.9			11.2	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	38	548	81	21	349	19	22	2	30	26	3	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	667	0	0	389	0	0	54	0	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	471	70	18	300	16	19	2	26	22	3	33
Future Vol, veh/h	33	471	70	18	300	16	19	2	26	22	3	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	7	7	7	8	8	8	3	3	3	2	2	2
Mvmt Flow	38	548	81	21	349	19	22	2	30	26	3	38
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	629	0	0	1086	1075	589	1082	1106	359
Stage 1	-	-	-	-	-	-	665	665	-	401	401	-
Stage 2	-	-	-	-	-	-	421	410	-	681	705	-
Critical Hdwy	4.17	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuvr	163	-	-	925	-	-	193	219	506	195	210	685
Stage 1	-	-	-	-	-	-	448	456	-	626	601	-
Stage 2	-	-	-	-	-	-	608	594	-	440	439	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuvr	163	-	-	925	-	-	169	202	506	171	193	685
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	202	-	171	193	-
Stage 1	-	-	-	-	-	-	425	433	-	594	584	-
Stage 2	-	-	-	-	-	-	554	577	-	391	417	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.5			21.6			20.4		
HCM LOS							C			C		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		271	1163	-	-	925	-	-	301			
HCM Lane V/C Ratio		0.202	0.033	-	-	0.023	-	-	0.224			
HCM Control Delay (s)		21.6	8.2	0	-	9	0	-	20.4			
HCM Lane LOS		C	A	A	-	A	A	-	C			
HCM 95th %tile Q(veh)		0.7	0.1	-	-	0.1	-	-	0.8			

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	525	310	8	1	3
Future Volume (vph)	11	525	310	8	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			60.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.899	
Flt Protected		0.999			0.988	
Satd. Flow (prot)	0	1828	1865	1585	1673	0
Flt Permitted		0.999			0.988	
Satd. Flow (perm)	0	1828	1865	1585	1673	0
Link Speed (k/h)		50	50		30	
Link Distance (m)		93.5	799.2		154.5	
Travel Time (s)		6.7	57.5		18.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Adj. Flow (vph)	13	610	360	9	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	623	360	9	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25			20	25	20
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 11 525 310 8 1 3

Future Vol, veh/h 11 525 310 8 1 3

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - 60 0 -

Veh in Median Storage, # 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 3 3 2 2

Mvmt Flow 13 610 360 9 1 3

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 369 0 - 0 996 360

Stage 1 - - - - 360 -

Stage 2 - - - - 636 -

Critical Hdwy 4.15 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.245 - - - 3.518 3.318

Pot Cap-1 Maneuver 173 - - - 271 684

Stage 1 - - - - 706 -

Stage 2 - - - - 527 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 173 - - - 266 684

Mov Cap-2 Maneuver - - - - 266 -

Stage 1 - - - - 694 -

Stage 2 - - - - 527 -

Approach EB WB SB

HCM Control Delay, s 0.2 0 12.4

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1173 - - - 491

HCM Lane V/C Ratio 0.011 - - - 0.009

HCM Control Delay (s) 8.1 0 - - 12.4

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Lanes, Volumes, Timings
8: 50 Ave & Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	591	1	5	315	1	1	0	10	1	0	1
Future Volume (vph)	1	591	1	5	315	1	1	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.875			0.932	
Flt Protected				0.950				0.996			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1595	0	0	1664	0
Flt Permitted				0.950				0.996			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1595	0	0	1664	0
Link Speed (k/h)		100			100			80			80	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		28.8			7.0			13.9			12.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	1	687	1	6	366	1	1	0	12	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	688	1	6	367	0	0	13	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔		↔			↔	
Traffic Vol, veh/h	1	591	1	5	315	1	1	0	10	1	0	1
Future Vol, veh/h	1	591	1	5	315	1	1	0	10	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	687	1	6	366	1	1	0	12	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	367	0	0	688	0	0	1068	1068	687	1075	1069	367
Stage 1	-	-	-	-	-	-	689	689	-	379	379	-
Stage 2	-	-	-	-	-	-	379	379	-	696	690	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	175	-	-	892	-	-	197	219	442	195	219	672
Stage 1	-	-	-	-	-	-	431	442	-	637	609	-
Stage 2	-	-	-	-	-	-	637	609	-	427	442	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	175	-	-	892	-	-	195	217	442	189	217	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	217	-	189	217	-
Stage 1	-	-	-	-	-	-	431	442	-	636	605	-
Stage 2	-	-	-	-	-	-	632	605	-	415	442	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			14.4			17.3		
HCM LOS							B			C		

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	396	1175	-	-	892	-	-	295
HCM Lane V/C Ratio	0.032	0.001	-	-	0.007	-	-	0.008
HCM Control Delay (s)	14.4	8.1	0	-	9.1	-	-	17.3
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	1	3	2	18	0	60	5	48	45	7
Future Volume (vph)	5	3	1	3	2	18	0	60	5	48	45	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt	0.986				0.891				0.989		0.991	
Flt Protected	0.971				0.994						0.976	
Satd. Flow (prot)	0	1703	0	0	1652	0	0	1792	0	0	1630	0
Flt Permitted	0.971				0.994						0.976	
Satd. Flow (perm)	0	1703	0	0	1652	0	0	1792	0	0	1630	0
Link Speed (k/h)	50				50				30		50	
Link Distance (m)	62.8				83.6				203.6		51.8	
Travel Time (s)	4.5				6.0				24.4		3.7	
Confl. Peds. (#/hr)	10			10	10			10	10	10		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	6	3	1	3	2	21	0	70	6	56	52	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	10	0	0	26	0	0	76	0	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0		0.0	
Link Offset(m)	0.0				0.0				0.0		0.0	
Crosswalk Width(m)	4.9				4.9				4.9		4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20		25	20		25	20		25	20	
Sign Control	Stop				Stop				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization		25.3%		ICU Level of Service A								
Analysis Period (min)		15										

Intersection												
Intersection Delay, s/veh	7.7											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	1	3	2	18	0	60	5	48	45	7
Future Vol, veh/h	5	3	1	3	2	18	0	60	5	48	45	7
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	6	3	1	3	2	21	0	70	6	56	52	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.1	7.5	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	13%	48%
Vol Thru, %	92%	33%	9%	45%
Vol Right, %	8%	11%	78%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	9	23	100
LT Vol	0	5	3	48
Through Vol	60	3	2	45
RT Vol	5	1	18	7
Lane Flow Rate	76	10	27	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.086	0.013	0.029	0.139
Departure Headway (Hd)	4.108	4.541	3.951	4.314
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	868	793	911	830
Service Time	2.156	2.541	1.951	2.348
HCM Lane V/C Ratio	0.088	0.013	0.03	0.14
HCM Control Delay	7.5	7.6	7.1	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0	0.1	0.5



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	1	4	100	61	23
Future Volume (vph)	11	1	4	100	61	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.963	
Flt Protected	0.956			0.998		
Satd. Flow (prot)	1732	0	0	1826	1762	0
Flt Permitted	0.956			0.998		
Satd. Flow (perm)	1732	0	0	1826	1762	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	178.6			371.2	769.4	
Travel Time (s)	12.9			26.7	55.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	13	1	5	116	71	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	121	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.7

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 11 1 4 100 61 23

Future Vol, veh/h 11 1 4 100 61 23

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 13 1 5 116 71 27

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 211 85 98 0 - 0

Stage 1 85 - - - - -

Stage 2 126 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuver 771 966 1476 - - -

Stage 1 931 - - - - -

Stage 2 892 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 768 966 1476 - - -

Mov Cap-2 Maneuver 768 - - - - -

Stage 1 927 - - - - -

Stage 2 892 - - - - -

Approach EB NB SB

HCM Control Delay, s 0.7 0.3 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1476 - 781 - -

HCM Lane V/C Ratio 0.003 -0.018 - -

HCM Control Delay (s) 7.4 0 9.7 - -

HCM Lane LOS A A A - -

HCM 95th %tile Q(veh) 0 - 0.1 - -

Lanes, Volumes, Timings

11: 42 Ave & 50 St

08-08-2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	5	4	120	90	8
Future Volume (vph)	10	5	4	120	90	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0			100.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955				0.989	
Flt Protected	0.968			0.998		
Satd. Flow (prot)	1691	0	0	1826	1810	0
Flt Permitted	0.968			0.998		
Satd. Flow (perm)	1691	0	0	1826	1810	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	6	5	140	105	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	145	114	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.7

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 10 5 4 120 90 8

Future Vol, veh/h 10 5 4 120 90 8

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 12 6 5 140 105 9

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 260 110 114 0 - 0

Stage 1 110 - - - - -

Stage 2 150 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuver 722 935 1457 - - -

Stage 1 907 - - - - -

Stage 2 870 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 719 935 1457 - - -

Mov Cap-2 Maneuver 719 - - - - -

Stage 1 903 - - - - -

Stage 2 870 - - - - -

Approach EB NB SB

HCM Control Delay, s 0.7 0.2 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1457 - 779 - -

HCM Lane V/C Ratio 0.003 -0.022 - -

HCM Control Delay (s) 7.5 0 9.7 - -

HCM Lane LOS A A A - -

HCM 95th %tile Q(veh) 0 - 0.1 - -

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	238	6	14	307	26	1	1	6	5	0	2
Future Volume (vph)	1	238	6	14	307	26	1	1	6	5	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. 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
Frt			0.850			0.850			0.895		0.966	
Flt Protected					0.998			0.994			0.964	
Satd. Flow (prot)	0	1847	1570	0	1809	1541	0	1676	0	0	1754	0
Flt Permitted					0.998			0.994			0.964	
Satd. Flow (perm)	0	1847	1570	0	1809	1541	0	1676	0	0	1754	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			116.0			182.8	
Travel Time (s)		7.5			7.5			13.9			21.9	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	277	7	16	357	30	1	1	7	6	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	7	0	373	30	0	9	0	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	37.5%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱		↰	↱		↰	↱
Traffic Vol, veh/h	1	238	6	14	307	26	1	1	6	5	0	2
Future Vol, veh/h	1	238	6	14	307	26	1	1	6	5	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	1	277	7	16	357	30	1	1	7	6	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	387	0	0	284	0	0	684	698	277	676	675	357
Stage 1	-	-	-	-	-	-	279	279	-	389	389	-
Stage 2	-	-	-	-	-	-	405	419	-	287	286	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	161	-	-	1256	-	-	363	364	762	367	376	687
Stage 1	-	-	-	-	-	-	728	680	-	635	608	-
Stage 2	-	-	-	-	-	-	622	590	-	720	675	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	161	-	-	1256	-	-	357	358	762	358	370	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	358	-	358	370	-
Stage 1	-	-	-	-	-	-	727	679	-	634	598	-
Stage 2	-	-	-	-	-	-	610	581	-	711	674	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			11.2			13.8		
HCM LOS							B			B		

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	594	1161	-	-	1256	-	-	415
HCM Lane V/C Ratio	0.016	0.001	-	-	0.013	-	-	0.02
HCM Control Delay (s)	11.2	8.1	0	-	7.9	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	244	1	32	336	58	1	0	15	17	5	2
Future Volume (vph)	1	244	1	32	336	58	1	0	15	17	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.982			0.872			0.990	
Flt Protected					0.996			0.997			0.966	
Satd. Flow (prot)	0	1812	0	0	1824	0	0	1576	0	0	1801	0
Flt Permitted					0.996			0.997			0.966	
Satd. Flow (perm)	0	1812	0	0	1824	0	0	1576	0	0	1801	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	1	284	1	37	391	67	1	0	17	20	6	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	286	0	0	495	0	0	18	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.5%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection													
Int Delay, s/veh	1.2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	1	244	1	32	336	58	1	0	15	17	5	2	
Future Vol, veh/h	1	244	1	32	336	58	1	0	15	17	5	2	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	
Heavy Vehicles, %	6	6	6	3	3	3	6	6	6	2	2	2	
Mvmt Flow	1	284	1	37	391	67	1	0	17	20	6	2	
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	458	0	0	285	0	0	790	819	285	794	786	425	
Stage 1	-	-	-	-	-	-	287	287	-	499	499	-	
Stage 2	-	-	-	-	-	-	503	532	-	295	287	-	
Critical Hdwy	4.16	-	-	4.13	-	-	7.16	6.56	6.26	7.12	6.52	6.22	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-	
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.554	4.054	3.354	3.518	4.018	3.318	
Pot Cap-1 Maneuver	1082	-	-	1271	-	-	303	306	745	306	324	629	
Stage 1	-	-	-	-	-	-	712	667	-	554	544	-	
Stage 2	-	-	-	-	-	-	543	519	-	713	674	-	
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	
Mov Cap-1 Maneuver	1082	-	-	1271	-	-	288	294	745	290	311	629	
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	294	-	290	311	-	
Stage 1	-	-	-	-	-	-	711	666	-	553	523	-	
Stage 2	-	-	-	-	-	-	514	499	-	696	673	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.6			10.5			17.9			
HCM LOS							B			C			
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)		678	1082	-	-	1271	-	-	308				
HCM Lane V/C Ratio		0.027	0.001	-	-	0.029	-	-	0.091				
HCM Control Delay (s)		10.5	8.3	0	-	7.9	0	-	17.9				
HCM Lane LOS		B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)		0.1	0	-	-	0.1	-	-	0.3				

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	279	2	12	448	3	9
Future Volume (vph)	279	2	12	448	3	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.896	
Flt Protected				0.999	0.989	
Satd. Flow (prot)	1828	0	0	1882	1669	0
Flt Permitted				0.999	0.989	
Satd. Flow (perm)	1828	0	0	1882	1669	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	324	2	14	521	3	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	326	0	0	535	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.3

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations 

Traffic Vol, veh/h 279 2 12 448 3 9

Future Vol, veh/h 279 2 12 448 3 9

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 2 2 2 2

Mvmt Flow 324 2 14 521 3 10

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 326 0 874 325

Stage 1 - - - - 325 -

Stage 2 - - - - 549 -

Critical Hdwy - - 4.12 - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - -2.218 -3.518 3.318

Pot Cap-1 Maneuver - - 1234 - 320 716

Stage 1 - - - - 732 -

Stage 2 - - - - 579 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1234 - 315 716

Mov Cap-2 Maneuver - - - - 315 -

Stage 1 - - - - 732 -

Stage 2 - - - - 570 -

Approach EB WB NB

HCM Control Delay, s 0 0.2 11.8

HCM LOS B

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 543 - - 1234 -

HCM Lane V/C Ratio 0.026 - -0.011 -

HCM Control Delay (s) 11.8 - - 8 0

HCM Lane LOS B - - A A

HCM 95th %tile Q(veh) 0.1 - - 0 -

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	241	46	97	406	27	36	4	85	7	7	16
Future Volume (vph)	23	241	46	97	406	27	36	4	85	7	7	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	30.0			30.0			0.0			0.0		
Lane Util. 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
Frt		0.976			0.991			0.908			0.927	
Flt Protected	0.950			0.950				0.986			0.989	
Satd. Flow (prot)	1706	1752	0	1722	1796	0	0	1686	0	0	1727	0
Flt Permitted	0.950			0.950				0.986			0.989	
Satd. Flow (perm)	1706	1752	0	1722	1796	0	0	1686	0	0	1727	0
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			123.5			769.4			203.6	
Travel Time (s)		14.6			8.9			55.4			24.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	27	280	53	113	472	31	42	5	99	8	8	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	333	0	113	503	0	0	146	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.1%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↕			↕	
Traffic Vol, veh/h	23	241	46	97	406	27	36	4	85	7	7	16
Future Vol, veh/h	23	241	46	97	406	27	36	4	85	7	7	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	30	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	7	7	7	6	6	6	2	2	2	2	2	2
Mvmt Flow	27	280	53	113	472	31	42	5	99	8	8	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	333	0	0	1088	1090	307	1127	1101	488
Stage 1	-	-	-	-	-	-	361	361	-	714	714	-
Stage 2	-	-	-	-	-	-	727	729	-	413	387	-
Critical Hdwy	4.17	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1036	-	-	1204	-	-	193	215	733	182	212	580
Stage 1	-	-	-	-	-	-	657	626	-	422	435	-
Stage 2	-	-	-	-	-	-	415	428	-	616	610	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1036	-	-	1204	-	-	164	190	733	141	187	580
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	190	-	141	187	-
Stage 1	-	-	-	-	-	-	640	610	-	411	394	-
Stage 2	-	-	-	-	-	-	356	388	-	515	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.5	22.3	20.8
HCM LOS			C	C

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)		351	1036	-	-	1204	-	262
HCM Lane V/C Ratio		0.414	0.026	-	-	0.094	-	0.133
HCM Control Delay (s)		22.3	8.6	-	-	8.3	-	20.8
HCM Lane LOS		C	A	-	-	A	-	C
HCM 95th %tile Q(veh)		2	0.1	-	-	0.3	-	0.5

Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	322	3	3	551	11	10	1	15	11	0	11
Future Volume (vph)	7	322	3	3	551	11	10	1	15	11	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.999			0.997			0.923			0.932	
Flt Protected		0.999						0.980			0.976	
Satd. Flow (prot)	0	1809	0	0	1860	0	0	1704	0	0	1481	0
Flt Permitted		0.999						0.980			0.976	
Satd. Flow (perm)	0	1809	0	0	1860	0	0	1704	0	0	1481	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		123.5			202.4			85.6			59.8	
Travel Time (s)		8.9			14.6			10.3			4.3	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	8	374	3	3	641	13	12	1	17	13	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	657	0	0	30	0	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.1%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection													
Int Delay, s/veh	1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	7	322	3	3	551	11	10	1	15	11	0	11	
Future Vol, veh/h	7	322	3	3	551	11	10	1	15	11	0	11	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18	
Mvmt Flow	8	374	3	3	641	13	12	1	17	13	0	13	
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	654	0	0	377	0	0	1052	1052	376	1055	1047	648	
Stage 1	-	-	-	-	-	-	392	392	-	654	654	-	
Stage 2	-	-	-	-	-	-	660	660	-	401	393	-	
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-	
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462	
Pot Cap-1 Maneuver	914	-	-	1176	-	-	204	227	670	190	214	443	
Stage 1	-	-	-	-	-	-	633	606	-	430	439	-	
Stage 2	-	-	-	-	-	-	452	460	-	595	579	-	
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	
Mov Cap-1 Maneuver	914	-	-	1176	-	-	196	224	670	182	211	443	
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	224	-	182	211	-	
Stage 1	-	-	-	-	-	-	626	599	-	425	437	-	
Stage 2	-	-	-	-	-	-	437	458	-	572	573	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	2			0			16.8			20.5			
HCM LOS							C			C			
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1				
Capacity (veh/h)		334	914	-	-	1176	-	-	258				
HCM Lane V/C Ratio		0.091	0.009	-	-	0.003	-	-	0.099				
HCM Control Delay (s)		16.8	9	0	-	8.1	0	-	20.5				
HCM Lane LOS		C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)		0.3	0	-	-	0	-	-	0.3				

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

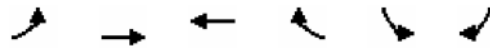
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	321	41	22	516	29	27	4	9	17	6	15
Future Volume (vph)	19	321	41	22	516	29	27	4	9	17	6	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993			0.971			0.948	
Flt Protected		0.998			0.998			0.967			0.978	
Satd. Flow (prot)	0	1765	0	0	1763	0	0	1751	0	0	1746	0
Flt Permitted		0.998			0.998			0.967			0.978	
Satd. Flow (perm)	0	1765	0	0	1763	0	0	1751	0	0	1746	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		202.4			410.0			91.1			93.6	
Travel Time (s)		14.6			29.5			10.9			11.2	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	22	373	48	26	600	34	31	5	10	20	7	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	443	0	0	660	0	0	46	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	46.4%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection															
Int Delay, s/veh	2.3														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		↕			↕			↕			↕				
Traffic Vol, veh/h	19	321	41	22	516	29	27	4	9	17	6	15			
Future Vol, veh/h	19	321	41	22	516	29	27	4	9	17	6	15			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop			
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None			
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-			
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-			
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-			
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86			
Heavy Vehicles, %	7	7	7	8	8	8	3	3	3	2	2	2			
Mvmt Flow	22	373	48	26	600	34	31	5	10	20	7	17			
Major/Minor	Major1			Major2			Minor1			Minor2					
Conflicting Flow All	634	0	0	421	0	0	1122	1127	397	1118	1134	617			
Stage 1	-	-	-	-	-	-	441	441	-	669	669	-			
Stage 2	-	-	-	-	-	-	681	686	-	449	465	-			
Critical Hdwy	4.17	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22			
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-			
Follow-up Hdwy	2.263	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318			
Pot Cap-1 Maneuver	925	-	-	1107	-	-	182	204	650	184	203	490			
Stage 1	-	-	-	-	-	-	593	575	-	447	456	-			
Stage 2	-	-	-	-	-	-	439	446	-	589	563	-			
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-			
Mov Cap-1 Maneuver	925	-	-	1107	-	-	162	191	650	169	190	490			
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	191	-	169	190	-			
Stage 1	-	-	-	-	-	-	575	557	-	433	440	-			
Stage 2	-	-	-	-	-	-	402	430	-	557	546	-			
Approach	EB			WB			NB			SB					
HCM Control Delay, s	0.4			0.3			28.5			24					
HCM LOS							D			C					
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1
Capacity (veh/h)		199	925	-	-	1107	-	-	233						
HCM Lane V/C Ratio		0.234	0.024	-	-	0.023	-	-	0.19						
HCM Control Delay (s)		28.5	9	0	-	8.3	0	-	24						
HCM Lane LOS		D	A	A	-	A	A	-	C						
HCM 95th %tile Q(veh)		0.9	0.1	-	-	0.1	-	-	0.7						

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑	↗	↘	
Traffic Volume (vph)	5	345	552	5	15	12
Future Volume (vph)	5	345	552	5	15	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			60.0	0.0	0.0
Storage Lanes	0			1	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.939	
Flt Protected		0.999			0.973	
Satd. Flow (prot)	0	1828	1865	1585	1721	0
Flt Permitted		0.999			0.973	
Satd. Flow (perm)	0	1828	1865	1585	1721	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		93.5	799.2		154.5	
Travel Time (s)		4.8	41.1		18.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Adj. Flow (vph)	6	401	642	6	17	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	407	642	6	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25			20	25	20
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰	↰	↰	↰
Traffic Vol, veh/h	5	345	552	5	15	12
Future Vol, veh/h	5	345	552	5	15	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	60	0	-
Veh in Median Storage,#	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	401	642	6	17	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	648	0	-	0	1055	642
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	413	-
Critical Hdwy	4.15	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.245	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	924	-	-	-	250	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	924	-	-	-	248	474
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	668	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		17.7		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	924	-	-	-	315	
HCM Lane V/C Ratio	0.006	-	-	-	0.1	
HCM Control Delay (s)	8.9	0	-	-	17.7	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Lanes, Volumes, Timings
8: 50 Ave & Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	383	4	1	519	1	7	0	4	1	0	1
Future Volume (vph)	1	383	4	1	519	1	7	0	4	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.948			0.932	
Flt Protected				0.950				0.970			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1682	0	0	1664	0
Flt Permitted				0.950				0.970			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1682	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	1	445	5	1	603	1	8	0	5	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	5	1	604	0	0	13	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.0%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱			↰			↰	↱
Traffic Vol, veh/h	1	383	4	1	519	1	7	0	4	1	0	1
Future Vol, veh/h	1	383	4	1	519	1	7	0	4	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	445	5	1	603	1	8	0	5	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	604	0	0	450	0	0	1053	1053	445	1058	1058	604
Stage 1	-	-	-	-	-	-	447	447	-	606	606	-
Stage 2	-	-	-	-	-	-	606	606	-	452	452	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	959	-	-	1095	-	-	202	223	607	200	222	493
Stage 1	-	-	-	-	-	-	585	568	-	479	482	-
Stage 2	-	-	-	-	-	-	479	482	-	581	565	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	959	-	-	1095	-	-	201	223	607	198	222	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	201	223	-	198	222	-
Stage 1	-	-	-	-	-	-	584	567	-	479	482	-
Stage 2	-	-	-	-	-	-	477	482	-	576	564	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			19.2			17.8		
HCM LOS							C			C		

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	266	959	-	-	1095	-	-	283
HCM Lane V/C Ratio	0.048	0.001	-	-	0.001	-	-	0.008
HCM Control Delay (s)	19.2	8.8	0	-	8.3	-	-	17.8
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2	4	7	4	23	1	44	4	22	45	6
Future Volume (vph)	8	2	4	7	4	23	1	44	4	22	45	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.958			0.909			0.988			0.989	
Flt Protected		0.973			0.990			0.999			0.985	
Satd. Flow (prot)	0	1658	0	0	1678	0	0	1789	0	0	1642	0
Flt Permitted		0.973			0.990			0.999			0.985	
Satd. Flow (perm)	0	1658	0	0	1678	0	0	1789	0	0	1642	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	9	2	5	8	5	27	1	51	5	26	52	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	40	0	0	57	0	0	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 7.5

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	4	7	4	23	1	44	4	22	45	6
Future Vol, veh/h	8	2	4	7	4	23	1	44	4	22	45	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	9	2	5	8	5	27	1	51	5	26	52	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.1	7.5	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	57%	21%	30%
Vol Thru, %	90%	14%	12%	62%
Vol Right, %	8%	29%	68%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	14	34	73
LT Vol	1	8	7	22
Through Vol	44	2	4	45
RT Vol	4	4	23	6
Lane Flow Rate	57	16	40	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.065	0.019	0.042	0.101
Departure Headway (Hd)	4.117	4.255	3.842	4.289
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	865	830	918	834
Service Time	2.163	2.338	1.923	2.324
HCM Lane V/C Ratio	0.066	0.019	0.044	0.102
HCM Control Delay	7.5	7.4	7.1	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.3

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	3	0	73	100	9
Future Volume (vph)	14	3	0	73	100	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979				0.989	
Flt Protected	0.960					
Satd. Flow (prot)	1720	0	0	1830	1810	0
Flt Permitted	0.960					
Satd. Flow (perm)	1720	0	0	1830	1810	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	178.6			371.2	769.4	
Travel Time (s)	12.9			26.7	55.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	16	3	0	85	116	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	0	85	126	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100	100	100			100
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.8

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations

Traffic Vol, veh/h 14 3 0 73 100 9

Future Vol, veh/h 14 3 0 73 100 9

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 16 3 0 85 116 10

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 206 121 126 0 - 0

Stage 1 121 - - - - -

Stage 2 85 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuver 776 922 1442 - - -

Stage 1 897 - - - - -

Stage 2 931 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 776 922 1442 - - -

Mov Cap-2 Maneuver 776 - - - - -

Stage 1 897 - - - - -

Stage 2 931 - - - - -

Approach EB NB SB

HCM Control Delay, s 9.6 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1442 - 798 - -

HCM Lane V/C Ratio - -0.025 - -

HCM Control Delay (s) 0 - 9.6 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - 0.1 - -

Lanes, Volumes, Timings

11: 42 Ave & 50 St

08-08-2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	5	5	108	102	9
Future Volume (vph)	9	5	5	108	102	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0			100.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.990	
Flt Protected	0.970			0.998		
Satd. Flow (prot)	1684	0	0	1826	1811	0
Flt Permitted	0.970			0.998		
Satd. Flow (perm)	1684	0	0	1826	1811	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	10	6	6	126	119	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	132	129	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.7

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 9 5 5 108 102 9

Future Vol, veh/h 9 5 5 108 102 9

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 10 6 6 126 119 10

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 262 124 129 0 - 0

Stage 1 124 - - - - -

Stage 2 138 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuver721 919 1438 - - -

Stage 1 894 - - - - -

Stage 2 881 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver718 919 1438 - - -

Mov Cap-2 Maneuver718 - - - - -

Stage 1 890 - - - - -

Stage 2 881 - - - - -

Approach EB NB SB

HCM Control Delay, s 0.7 0.3 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1438 - 779 - -

HCM Lane V/C Ratio 0.004 -0.021 - -

HCM Control Delay (s) 7.5 0 9.7 - -

HCM Lane LOS A A A - -

HCM 95th %tile Q(veh) 0 - 0.1 - -

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	474	1	1	398	1	1	0	11	33	0	2
Future Volume (vph)	1	474	1	1	398	1	1	0	11	33	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. 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
Frt			0.850					0.875			0.993	
Flt Protected				0.950				0.996			0.955	
Satd. Flow (prot)	0	1847	1570	1722	1812	0	0	1641	0	0	1786	0
Flt Permitted				0.950				0.996			0.955	
Satd. Flow (perm)	0	1847	1570	1722	1812	0	0	1641	0	0	1786	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			116.0			182.8	
Travel Time (s)		7.5			7.5			13.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	515	1	1	433	1	1	0	12	36	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	516	1	1	434	0	0	13	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.0%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔			↔			↔	
Traffic Vol, veh/h	1	474	1	1	398	1	1	0	11	33	0	2
Future Vol, veh/h	1	474	1	1	398	1	1	0	11	33	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	1	515	1	1	433	1	1	0	12	36	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	434	0	0	516	0	0	954	953	515	960	954	434
Stage 1	-	-	-	-	-	-	517	517	-	436	436	-
Stage 2	-	-	-	-	-	-	437	436	-	524	518	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	115	-	-	1030	-	-	238	259	560	236	259	622
Stage 1	-	-	-	-	-	-	541	534	-	599	580	-
Stage 2	-	-	-	-	-	-	598	580	-	537	533	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	115	-	-	1030	-	-	237	258	560	231	258	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	258	-	231	258	-
Stage 1	-	-	-	-	-	-	540	533	-	598	579	-
Stage 2	-	-	-	-	-	-	595	579	-	525	532	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			12.3			22.8		
HCM LOS							B			C		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	EBL	EBT	EBR
Capacity (veh/h)		503	1115	-	-	1030	-	-	240			
HCM Lane V/C Ratio		0.026	0.001	-	-	0.001	-	-	0.159			
HCM Control Delay (s)		12.3	8.2	0	-	8.5	-	-	22.8			
HCM Lane LOS		B	A	A	-	A	-	-	C			
HCM 95th %tile Q(veh)		0.1	0	-	-	0	-	-	0.6			

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	553	1	4	403	4	1	0	41	52	0	2
Future Volume (vph)	1	553	1	4	403	4	1	0	41	52	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	0.0			100.0			0.0			0.0		
Lane Util. 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
Frt					0.999			0.868			0.995	
Flt Protected				0.950				0.999			0.954	
Satd. Flow (prot)	0	1812	0	1772	1863	0	0	1572	0	0	1788	0
Flt Permitted				0.950				0.999			0.954	
Satd. Flow (perm)	0	1812	0	1772	1863	0	0	1572	0	0	1788	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	1	601	1	4	438	4	1	0	45	57	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	603	0	4	442	0	0	46	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	46.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	1	553	1	4	403	4	1	0	41	52	0	2
Future Vol, veh/h	1	553	1	4	403	4	1	0	41	52	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	15	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	6	6	6	2	2	2
Mvmt Flow	1	601	1	4	438	4	1	0	45	57	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	442	0	0	602	0	0	1053	1054	602	1074	1052	440
Stage 1	-	-	-	-	-	-	604	604	-	448	448	-
Stage 2	-	-	-	-	-	-	449	450	-	626	604	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.16	6.56	6.26	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.554	4.054	3.354	3.518	4.018	3.318
Pot Cap-1 Maneuver	1097	-	-	971	-	-	201	222	492	198	227	617
Stage 1	-	-	-	-	-	-	478	482	-	590	573	-
Stage 2	-	-	-	-	-	-	582	565	-	472	488	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1097	-	-	971	-	-	200	221	492	179	226	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	221	-	179	226	-
Stage 1	-	-	-	-	-	-	478	482	-	589	571	-
Stage 2	-	-	-	-	-	-	578	563	-	429	488	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			13.4			33.5		
HCM LOS							B			D		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		475	1097	-	-	971	-	-	184			
HCM Lane V/C Ratio		0.096	0.001	-	-	0.004	-	-	0.319			
HCM Control Delay (s)		13.4	8.3	0	-	8.7	-	-	33.5			
HCM Lane LOS		B	A	A	-	A	-	-	D			
HCM 95th %tile Q(veh)		0.3	0	-	-	0	-	-	1.3			

Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-08-2025

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	700	1	3	420	1	11
Future Volume (vph)	700	1	3	420	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	1.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			100.0		0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.875	
Flt Protected			0.950		0.996	
Satd. Flow (prot)	1830	0	1789	1883	1641	0
Flt Permitted			0.950		0.996	
Satd. Flow (perm)	1830	0	1789	1883	1641	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	761	1	3	457	1	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	762	0	3	457	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.2

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations 

Traffic Vol, veh/h 700 1 3 420 1 11

Future Vol, veh/h 700 1 3 420 1 11

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - 1 - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 2 2 2 2

Mvmt Flow 761 1 3 457 1 12

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 762 0 1225 762

Stage 1 - - - - 762 -

Stage 2 - - - - 463 -

Critical Hdwy - - 4.12 - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - -2.218 -3.518 3.318

Pot Cap-1 Maneuver - - 850 - 198 405

Stage 1 - - - - 461 -

Stage 2 - - - - 634 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 850 - 197 405

Mov Cap-2 Maneuver - - - - 197 -

Stage 1 - - - - 461 -

Stage 2 - - - - 631 -

Approach EB WB NB

HCM Control Delay, s 0 0.1 15

HCM LOS C

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 372 - - 850 -

HCM Lane V/C Ratio 0.035 - -0.004 -

HCM Control Delay (s) 15 - - 9.3 -

HCM Lane LOS C - - A -

HCM 95th %tile Q(veh) 0.1 - - 0 -

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	711	52	79	400	30	16	32	144	30	20	10
Future Volume (vph)	30	711	52	79	400	30	16	32	144	30	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	30.0			30.0			0.0			0.0		
Lane Util. 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
Frt		0.990			0.989			0.899			0.977	
Flt Protected	0.950			0.950				0.996			0.976	
Satd. Flow (prot)	1706	1777	0	1722	1792	0	0	1686	0	0	1796	0
Flt Permitted	0.466			0.211				0.967			0.732	
Satd. Flow (perm)	837	1777	0	382	1792	0	0	1637	0	0	1347	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			9			147			11	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			123.5			769.4			203.6	
Travel Time (s)		14.6			8.9			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	33	773	57	86	435	33	17	35	157	33	22	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	830	0	86	468	0	0	209	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	39.0	39.0		39.0	39.0		26.0	26.0		26.0	26.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	33.0	33.0		33.0	33.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Act Effct Green (s)	33.0	33.0		33.0	33.0			10.5			10.5	
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.19			0.19	
v/c Ratio	0.07	0.78		0.38	0.44			0.49			0.25	
Control Delay	5.5	16.1		12.4	7.8			11.5			19.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.5	16.1		12.4	7.8			11.5			19.3	
LOS	A	B		B	A			B			B	
Approach Delay		15.7			8.5			11.5			19.3	
Approach LOS		B			A			B			B	
Queue Length 50th (m)	1.2	51.9		3.8	20.9			5.3			4.7	
Queue Length 95th (m)	4.3	#130.4		14.2	41.9			19.9			13.3	
Internal Link Dist (m)		178.7			99.5			745.4			179.6	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	497	1059		227	1068			683			492	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.78		0.38	0.44			0.31			0.13	
Intersection Summary												
Area Type:	Other											
Cycle Length: 65												
Actuated Cycle Length: 55.5												
Natural Cycle: 65												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 13.0						Intersection LOS: B						
Intersection Capacity Utilization 80.0%						ICU Level of Service D						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	853	1	9	512	12	1	0	16	7	0	1
Future Volume (vph)	1	853	1	9	512	12	1	0	16	7	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	60.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	40.0			40.0			0.0			0.0		
Lane Util. 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
Frt					0.997			0.872			0.985	
Flt Protected	0.950			0.950				0.997			0.957	
Satd. Flow (prot)	1722	1812	0	1772	1860	0	0	1637	0	0	1535	0
Flt Permitted	0.950			0.950				0.997			0.957	
Satd. Flow (perm)	1722	1812	0	1772	1860	0	0	1637	0	0	1535	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		123.5			202.4			85.6			59.8	
Travel Time (s)		8.9			14.6			10.3			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	1	927	1	10	557	13	1	0	17	8	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	928	0	10	570	0	0	18	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.0%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↕			↕	
Traffic Vol, veh/h	1	853	1	9	512	12	1	0	16	7	0	1
Future Vol, veh/h	1	853	1	9	512	12	1	0	16	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	40	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	1	927	1	10	557	13	1	0	17	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	570	0	0	928	0	0	1514	1520	928	1522	1514	564
Stage 1	-	-	-	-	-	-	930	930	-	584	584	-
Stage 2	-	-	-	-	-	-	584	590	-	938	930	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	983	-	-	733	-	-	98	119	325	89	110	496
Stage 1	-	-	-	-	-	-	321	346	-	471	473	-
Stage 2	-	-	-	-	-	-	498	495	-	297	325	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	983	-	-	733	-	-	97	117	325	83	108	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	117	-	83	108	-
Stage 1	-	-	-	-	-	-	321	346	-	471	466	-
Stage 2	-	-	-	-	-	-	490	488	-	281	325	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			18.5			47.7		
HCM LOS							C			E		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		286	983	-	-	733	-	-	93			
HCM Lane V/C Ratio		0.065	0.001	-	-	0.013	-	-	0.094			
HCM Control Delay (s)		18.5	8.7	-	-	10	-	-	47.7			
HCM Lane LOS		C	A	-	-	A	-	-	E			
HCM 95th %tile Q(veh)		0.2	0	-	-	0	-	-	0.3			

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

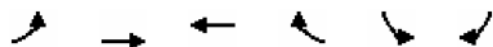
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	744	70	18	474	16	19	2	26	22	3	33
Future Volume (vph)	33	744	70	18	474	16	19	2	26	22	3	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		15.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (m)	100.0			100.0			0.0			0.0		
Lane Util. 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
Frt			0.850		0.995			0.926			0.923	
Flt Protected	0.950			0.950				0.980			0.981	
Satd. Flow (prot)	1706	1795	1526	1690	1770	0	0	1693	0	0	1705	0
Flt Permitted	0.950			0.950				0.980			0.981	
Satd. Flow (perm)	1706	1795	1526	1690	1770	0	0	1693	0	0	1705	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		202.4			242.5			91.1			93.6	
Travel Time (s)		14.6			17.5			10.9			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	36	809	76	20	515	17	21	2	28	24	3	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	809	76	20	532	0	0	51	0	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	744	70	18	474	16	19	2	26	22	3	33
Future Vol, veh/h	33	744	70	18	474	16	19	2	26	22	3	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	15	15	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	8	8	8	3	3	3	2	2	2
Mvmt Flow	36	809	76	20	515	17	21	2	28	24	3	36
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	532	0	0	885	0	0	1464	1453	809	1498	1521	524
Stage 1	-	-	-	-	-	-	881	881	-	564	564	-
Stage 2	-	-	-	-	-	-	583	572	-	934	957	-
Critical Hdwy	4.17	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1011	-	-	740	-	-	106	130	379	101	118	553
Stage 1	-	-	-	-	-	-	340	363	-	510	508	-
Stage 2	-	-	-	-	-	-	496	503	-	319	336	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1011	-	-	740	-	-	92	122	379	88	111	553
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	122	-	88	111	-
Stage 1	-	-	-	-	-	-	328	350	-	492	494	-
Stage 2	-	-	-	-	-	-	448	489	-	283	324	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.4			37.4			37.6		
HCM LOS							E			E		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	EBL	EBT	EBR
Capacity (veh/h)		161	1011	-	-	740	-	-	172			
HCM Lane V/C Ratio		0.317	0.035	-	-	0.026	-	-	0.367			
HCM Control Delay (s)		37.4	8.7	-	-	10	-	-	37.6			
HCM Lane LOS		E	A	-	-	A	-	-	E			
HCM 95th %tile Q(veh)		1.3	0.1	-	-	0.1	-	-	1.6			

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	830	490	8	1	3
Future Volume (vph)	11	830	490	8	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			60.0	0.0	0.0
Storage Lanes	1			1	0	0
Taper Length (m)	40.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.887	
Flt Protected	0.950				0.988	
Satd. Flow (prot)	1738	1830	1865	1585	0	0
Flt Permitted	0.950				0.988	
Satd. Flow (perm)	1738	1830	1865	1585	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		93.5	799.2		154.5	
Travel Time (s)		4.8	41.1		18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Adj. Flow (vph)	12	902	533	9	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	902	533	9	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25			20	25	20
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization Err% ICU Level of Service H

Analysis Period (min) 15

Lanes, Volumes, Timings

8: Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	934	1	5	498	1	1	0	10	1	0	1
Future Volume (vph)	1	934	1	5	498	1	1	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	100.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.876			0.932	
Flt Protected				0.950				0.996			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Flt Permitted				0.950				0.996			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		57.5			14.1			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1015	1	5	541	1	1	0	11	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1016	1	5	542	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.0%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection													
Int Delay, s/veh	0.2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↕	↕	↕			↕			↕		
Traffic Vol, veh/h	1	934	1	5	498	1	1	0	10	1	0	1	
Future Vol, veh/h	1	934	1	5	498	1	1	0	10	1	0	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5	
Mvmt Flow	1	1015	1	5	541	1	1	0	11	1	0	1	
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	542	0	0	1016	0	0	1569	1569	1015	1575	1570	542	
Stage 1	-	-	-	-	-	-	-	1017	1017	-	552	552	-
Stage 2	-	-	-	-	-	-	-	552	552	-	1023	1018	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25	
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345	
Pot Cap-1 Maneuver	1012	-	-	671	-	-	88	109	285	88	109	535	
Stage 1	-	-	-	-	-	-	283	311	-	513	510	-	
Stage 2	-	-	-	-	-	-	513	510	-	281	311	-	
Platoon blocked, %		-	-		-	-							
Mov Cap-1 Maneuver	1012	-	-	671	-	-	87	108	285	84	108	535	
Mov Cap-2 Maneuver	-	-	-	-	-	-	87	108	-	84	108	-	
Stage 1	-	-	-	-	-	-	282	310	-	512	506	-	
Stage 2	-	-	-	-	-	-	508	506	-	270	310	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.1			21.1			30.2			
HCM LOS							C			D			
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	236	1012	-	-	671	-	-	145					
HCM Lane V/C Ratio	0.051	0.001	-	-	0.008	-	-	0.015					
HCM Control Delay (s)	21.1	8.6	0	-	10.4	-	-	30.2					
HCM Lane LOS	C	A	A	-	B	-	-	D					
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0					

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	1	3	2	18	0	60	5	48	45	7
Future Volume (vph)	5	3	1	3	2	18	0	60	5	48	45	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.985			0.892			0.990			0.990	
Flt Protected		0.973			0.994						0.977	
Satd. Flow (prot)	0	1705	0	0	1654	0	0	1794	0	0	1630	0
Flt Permitted		0.973			0.994						0.977	
Satd. Flow (perm)	0	1705	0	0	1654	0	0	1794	0	0	1630	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	5	3	1	3	2	20	0	65	5	52	49	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	25	0	0	70	0	0	109	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	7.7											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	1	3	2	18	0	60	5	48	45	7
Future Vol, veh/h	5	3	1	3	2	18	0	60	5	48	45	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	5	3	1	3	2	20	0	65	5	52	49	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7	7.5	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	13%	48%
Vol Thru, %	92%	33%	9%	45%
Vol Right, %	8%	11%	78%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	9	23	100
LT Vol	0	5	3	48
Through Vol	60	3	2	45
RT Vol	5	1	18	7
Lane Flow Rate	71	10	25	109
Geometry Grp	1	1	1	1
Degree of Util (X)	0.08	0.012	0.027	0.13
Departure Headway (Hd)	4.099	4.511	3.824	4.306
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	870	798	918	832
Service Time	2.143	2.511	1.922	2.337
HCM Lane V/C Ratio	0.082	0.013	0.027	0.131
HCM Control Delay	7.5	7.6	7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0	0.1	0.4



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	1	4	158	96	23
Future Volume (vph)	11	1	4	158	96	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.974	
Flt Protected	0.956			0.999		
Satd. Flow (prot)	1732	0	0	1828	1782	0
Flt Permitted	0.956			0.999		
Satd. Flow (perm)	1732	0	0	1828	1782	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	178.6			371.2	769.4	
Travel Time (s)	12.9			26.7	55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1	4	172	104	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	176	129	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1	4	158	96	23
Future Vol, veh/h	11	1	4	158	96	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	12	1	4	172	104	25
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	297	117	129	0	-	0
Stage 1	117	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	688	927	1438	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	927	1438	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.2	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1438	-	701	-	-	
HCM Lane V/C Ratio	0.003	-	0.019	-	-	
HCM Control Delay (s)	7.5	0	10.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Lanes, Volumes, Timings

11: 42 Ave & 50 St

08-08-2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	5	4	190	142	8
Future Volume (vph)	10	5	4	190	142	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.993	
Flt Protected	0.967			0.999		
Satd. Flow (prot)	1695	0	0	1828	1817	0
Flt Permitted	0.967			0.999		
Satd. Flow (perm)	1695	0	0	1828	1817	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	4	207	154	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	211	163	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	10	5	4	190	142	8
Future Vol, veh/h	10	5	4	190	142	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	11	5	4	207	154	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	374	159	163	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	621	878	1398	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	619	878	1398	-	-	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1398	-	687	-	-	
HCM Lane V/C Ratio	0.003	-	0.024	-	-	
HCM Control Delay (s)	7.6	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	376	6	14	485	26	1	1	6	5	0	2
Future Volume (vph)	1	376	6	14	485	26	1	1	6	5	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. 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
Frt			0.850		0.992			0.895			0.961	
Flt Protected				0.950				0.994			0.966	
Satd. Flow (prot)	0	1847	1570	1722	1798	0	0	1676	0	0	1748	0
Flt Permitted				0.950				0.994			0.966	
Satd. Flow (perm)	0	1847	1570	1722	1798	0	0	1676	0	0	1748	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			116.0			182.8	
Travel Time (s)		7.5			7.5			13.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1	409	7	15	527	28	1	1	7	5	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	7	15	555	0	0	9	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.8%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗			↕			↕	
Traffic Vol, veh/h	1	376	6	14	485	26	1	1	6	5	0	2
Future Vol, veh/h	1	376	6	14	485	26	1	1	6	5	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	-	-	-	-	-	-	-
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	1	409	7	15	527	28	1	1	7	5	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	555	0	0	416	0	0	983	996	409	990	989	541
Stage 1	-	-	-	-	-	-	411	411	-	571	571	-
Stage 2	-	-	-	-	-	-	572	585	-	419	418	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1005	-	-	1122	-	-	228	244	642	225	247	541
Stage 1	-	-	-	-	-	-	618	595	-	506	505	-
Stage 2	-	-	-	-	-	-	505	498	-	612	591	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1005	-	-	1122	-	-	225	241	642	220	244	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	225	241	-	220	244	-
Stage 1	-	-	-	-	-	-	617	594	-	505	498	-
Stage 2	-	-	-	-	-	-	496	492	-	604	590	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			13.2			19		
HCM LOS							B			C		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		446	1005	-	-	1122	-	-	265			
HCM Lane V/C Ratio		0.019	0.001	-	-	0.014	-	-	0.029			
HCM Control Delay (s)		13.2	8.6	0	-	8.3	-	-	19			
HCM Lane LOS		B	A	A	-	A	-	-	C			
HCM 95th %tile Q(veh)		0.1	0	-	-	0	-	-	0.1			

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	386	1	32	531	58	1	0	15	17	5	2
Future Volume (vph)	1	386	1	32	531	58	1	0	15	17	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	0.0			100.0			0.0			0.0		
Lane Util. 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
Frt					0.985			0.873			0.989	
Flt Protected				0.950				0.997			0.965	
Satd. Flow (prot)	0	1812	0	1772	1837	0	0	1577	0	0	1798	0
Flt Permitted				0.950				0.997			0.965	
Satd. Flow (perm)	0	1812	0	1772	1837	0	0	1577	0	0	1798	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	1	420	1	35	577	63	1	0	16	18	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	422	0	35	640	0	0	17	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.7%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	386	1	32	531	58	1	0	15	17	5	2
Future Vol, veh/h	1	386	1	32	531	58	1	0	15	17	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	- None		-	- None		-	- None		-	- None	
Storage Length	-	-	-	15	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	6	6	6	2	2	2
Mvmt Flow	1	420	1	35	577	63	1	0	16	18	5	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	640	0	0	421	0	0	1105	1133	421	1110	1102	609
Stage 1	-	-	-	-	-	-	423	423	-	679	679	-
Stage 2	-	-	-	-	-	-	682	710	-	431	423	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.16	6.56	6.26	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.554	4.054	3.354	3.518	4.018	3.318
Pot Cap-1 Maneuver	925	-	-	1133	-	-	185	199	624	187	212	495
Stage 1	-	-	-	-	-	-	601	581	-	441	451	-
Stage 2	-	-	-	-	-	-	433	431	-	603	588	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	925	-	-	1133	-	-	176	193	624	178	205	495
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	193	-	178	205	-
Stage 1	-	-	-	-	-	-	600	580	-	441	437	-
Stage 2	-	-	-	-	-	-	413	418	-	587	587	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.4			11.9			26.4		
HCM LOS							B			D		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		538	925	-	-	1133	-	-	194			
HCM Lane V/C Ratio		0.032	0.001	-	-	0.031	-	-	0.134			
HCM Control Delay (s)		11.9	8.9	0	-	8.3	-	-	26.4			
HCM Lane LOS		B	A	A	-	A	-	-	D			
HCM 95th %tile Q(veh)		0.1	0	-	-	0.1	-	-	0.5			

Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-08-2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗		↘	↗	↘	↗
Traffic Volume (vph)	441	2	12	708	3	9
Future Volume (vph)	441	2	12	708	3	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	1.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			100.0		0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.896	
Flt Protected			0.950		0.989	
Satd. Flow (prot)	1828	0	1789	1883	1669	0
Flt Permitted			0.950		0.989	
Satd. Flow (perm)	1828	0	1789	1883	1669	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	479	2	13	770	3	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	481	0	13	770	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	441	2	12	708	3	9
Future Vol, veh/h	441	2	12	708	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	1	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	479	2	13	770	3	10
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	481	0	1276	480
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	796	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1082	-	184	586
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	444	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1082	-	182	586
Mov Cap-2 Maneuver	-	-	-	-	182	-
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	439	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		14.9		
HCM LOS	B					
Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	377	-	-	1082	-	
HCM Lane V/C Ratio	0.035	-	-	0.012	-	
HCM Control Delay (s)	14.9	-	-	8.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	381	73	153	641	27	57	6	134	7	7	16
Future Volume (vph)	23	381	73	153	641	27	57	6	134	7	7	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	30.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	30.0			30.0			0.0			0.0		
Lane Util. 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
Frt		0.976			0.994			0.908			0.930	
Flt Protected	0.950			0.950				0.986			0.988	
Satd. Flow (prot)	1706	1752	0	1722	1801	0	0	1686	0	0	1731	0
Flt Permitted	0.273			0.444				0.891			0.911	
Satd. Flow (perm)	490	1752	0	805	1801	0	0	1524	0	0	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			4			146			17	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			123.5			769.4			203.6	
Travel Time (s)		14.6			8.9			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	25	414	79	166	697	29	62	7	146	8	8	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	493	0	166	726	0	0	215	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		26.0	26.0		33.0	33.0	
Total Split (s)	37.0	37.0		37.0	37.0		33.0	33.0		33.0	33.0	
Total Split (%)	52.9%	52.9%		52.9%	52.9%		47.1%	47.1%		47.1%	47.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)	31.0	31.0		31.0	31.0			10.6			10.6	
Actuated g/C Ratio	0.58	0.58		0.58	0.58			0.20			0.20	
v/c Ratio	0.09	0.48		0.36	0.70			0.51			0.10	
Control Delay	6.4	8.6		9.1	12.8			12.1			12.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.4	8.6		9.1	12.8			12.1			12.7	
LOS	A	A		A	B			B			B	
Approach Delay		8.5			12.1			12.1			12.7	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	0.9	22.1		7.1	40.8			5.7			1.3	
Queue Length 95th (m)	4.0	46.6		19.7	85.3			20.3			6.7	
Internal Link Dist (m)		178.7			99.5			745.4			179.6	
Turn Bay Length (m)	30.0			30.0								
Base Capacity (vph)	283	1020		465	1043			840			812	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.09	0.48		0.36	0.70			0.26			0.04	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 53.6

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 11.0

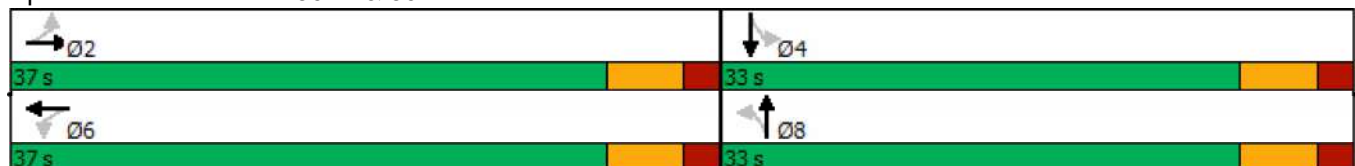
Intersection LOS: B

Intersection Capacity Utilization 79.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	509	3	3	871	11	10	1	15	11	0	11
Future Volume (vph)	7	509	3	3	871	11	10	1	15	11	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	60.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	40.0			40.0			0.0			0.0		
Lane Util. 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
Frt		0.999			0.998			0.923			0.932	
Flt Protected	0.950			0.950				0.981			0.976	
Satd. Flow (prot)	1722	1811	0	1772	1861	0	0	1705	0	0	1481	0
Flt Permitted	0.950			0.950				0.981			0.976	
Satd. Flow (perm)	1722	1811	0	1772	1861	0	0	1705	0	0	1481	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		123.5			202.4			85.6			59.8	
Travel Time (s)		8.9			14.6			10.3			4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	8	553	3	3	947	12	11	1	16	12	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	556	0	3	959	0	0	28	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	56.5%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	509	3	3	871	11	10	1	15	11	0	11
Future Vol, veh/h	7	509	3	3	871	11	10	1	15	11	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	40	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	8	553	3	3	947	12	11	1	16	12	0	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	959	0	0	556	0	0	1536	1536	555	1538	1531	953
Stage 1	-	-	-	-	-	-	571	571	-	959	959	-
Stage 2	-	-	-	-	-	-	965	965	-	579	572	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	701	-	-	1010	-	-	95	116	531	87	108	293
Stage 1	-	-	-	-	-	-	506	505	-	289	315	-
Stage 2	-	-	-	-	-	-	306	333	-	474	479	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	701	-	-	1010	-	-	90	114	531	83	106	293
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	114	-	83	106	-
Stage 1	-	-	-	-	-	-	500	499	-	286	314	-
Stage 2	-	-	-	-	-	-	293	332	-	453	474	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			29.3			39.2		
HCM LOS							D			E		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	SBT	SBR	
Capacity (veh/h)		176	701	-	-	1010	-	-	129			
HCM Lane V/C Ratio		0.161	0.011	-	-	0.003	-	-	0.185			
HCM Control Delay (s)		29.3	10.2	-	-	8.6	-	-	39.2			
HCM Lane LOS		D	B	-	-	A	-	-	E			
HCM 95th %tile Q(veh)		0.6	0	-	-	0	-	-	0.7			

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

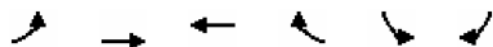
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	507	41	22	815	29	27	4	9	17	6	15
Future Volume (vph)	19	507	41	22	815	29	27	4	9	17	6	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		15.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (m)	100.0			100.0			0.0			0.0		
Lane Util. 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
Frt			0.850		0.995			0.969			0.947	
Flt Protected	0.950			0.950				0.967			0.979	
Satd. Flow (prot)	1706	1795	1526	1690	1770	0	0	1748	0	0	1746	0
Flt Permitted	0.950			0.950				0.967			0.979	
Satd. Flow (perm)	1706	1795	1526	1690	1770	0	0	1748	0	0	1746	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		202.4			242.5			91.1			93.6	
Travel Time (s)		14.6			17.5			10.9			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	21	551	45	24	886	32	29	4	10	18	7	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	551	45	24	918	0	0	43	0	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.8%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱		↕			↕	
Traffic Vol, veh/h	19	507	41	22	815	29	27	4	9	17	6	15
Future Vol, veh/h	19	507	41	22	815	29	27	4	9	17	6	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	15	-	15	15	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	8	8	8	3	3	3	2	2	2
Mvmt Flow	21	551	45	24	886	32	29	4	10	18	7	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	918	0	0	596	0	0	1555	1559	551	1573	1588	902
Stage 1	-	-	-	-	-	-	593	593	-	950	950	-
Stage 2	-	-	-	-	-	-	962	966	-	623	638	-
Critical Hdwy	4.17	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	723	-	-	952	-	-	91	112	532	89	108	336
Stage 1	-	-	-	-	-	-	490	492	-	312	339	-
Stage 2	-	-	-	-	-	-	306	332	-	474	471	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	723	-	-	952	-	-	79	106	532	81	102	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	106	-	81	102	-
Stage 1	-	-	-	-	-	-	476	478	-	303	331	-
Stage 2	-	-	-	-	-	-	278	324	-	448	457	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			65.2			49.4		
HCM LOS							F			E		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	SBT	SBR	
Capacity (veh/h)		101	723	-	-	952	-	-	121			
HCM Lane V/C Ratio		0.43	0.029	-	-	0.025	-	-	0.341			
HCM Control Delay (s)		65.2	10.1	-	-	8.9	-	-	49.4			
HCM Lane LOS		F	B	-	-	A	-	-	E			
HCM 95th %tile Q(veh)		1.8	0.1	-	-	0.1	-	-	1.4			

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	545	872	5	15	12
Future Volume (vph)	5	545	872	5	15	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			60.0	0.0	0.0
Storage Lanes	1			1	0	0
Taper Length (m)	40.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.933	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1738	1830	1865	1585	0	0
Flt Permitted	0.950				0.973	
Satd. Flow (perm)	1738	1830	1865	1585	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		93.5	799.2		154.5	
Travel Time (s)		4.8	41.1		18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Adj. Flow (vph)	5	592	948	5	16	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	592	948	5	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25			20	25	20
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization Err%	ICU Level of Service H					
Analysis Period (min)	15					

Lanes, Volumes, Timings

8: Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	605	4	1	820	1	7	0	4	1	0	1
Future Volume (vph)	1	605	4	1	820	1	7	0	4	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		100.0	100.0		100.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.955			0.932	
Flt Protected				0.950				0.968			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Flt Permitted				0.950				0.968			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	658	4	1	891	1	8	0	4	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	659	4	1	892	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	59.9%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔		↔			↔	
Traffic Vol, veh/h	1	605	4	1	820	1	7	0	4	1	0	1
Future Vol, veh/h	1	605	4	1	820	1	7	0	4	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	658	4	1	891	1	8	0	4	1	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	892	0	0	662	0	0	1554	1554	658	1558	1558	892
Stage 1	-	-	-	-	-	-	660	660	-	894	894	-
Stage 2	-	-	-	-	-	-	894	894	-	664	664	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	748	-	-	912	-	-	91	111	459	90	111	336
Stage 1	-	-	-	-	-	-	447	456	-	332	355	-
Stage 2	-	-	-	-	-	-	332	355	-	445	454	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	748	-	-	912	-	-	90	111	459	89	111	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	111	-	89	111	-
Stage 1	-	-	-	-	-	-	446	455	-	331	355	-
Stage 2	-	-	-	-	-	-	331	355	-	440	453	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			36.3			30.9		
HCM LOS							E			D		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	EBL	EBT	EBR
Capacity (veh/h)		127	748	-	-	912	-	-	141			
HCM Lane V/C Ratio		0.094	0.001	-	-	0.001	-	-	0.015			
HCM Control Delay (s)		36.3	9.8	0	-	9	-	-	30.9			
HCM Lane LOS		E	A	A	-	A	-	-	D			
HCM 95th %tile Q(veh)		0.3	0	-	-	0	-	-	0			

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2	4	7	4	23	1	44	4	22	45	6
Future Volume (vph)	8	2	4	7	4	23	1	44	4	22	45	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt	0.964				0.909				0.990		0.988	
Flt Protected	0.971				0.989				0.999		0.985	
Satd. Flow (prot)	0	1665	0	0	1677	0	0	1792	0	0	1640	0
Flt Permitted	0.971				0.989				0.999		0.985	
Satd. Flow (perm)	0	1665	0	0	1677	0	0	1792	0	0	1640	0
Link Speed (k/h)	50				50				30			
Link Distance (m)	62.8				83.6				203.6			
Travel Time (s)	4.5				6.0				24.4			
Confl. Peds. (#/hr)	10	10		10	10		10	10		10	10	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	9	2	4	8	4	25	1	48	4	24	49	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	37	0	0	53	0	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0				0.0				0.0			
Link Offset(m)	0.0				0.0				0.0			
Crosswalk Width(m)	4.9				4.9				4.9			
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20		25	20		25	20		25	20	
Sign Control	Stop			Stop			Stop			Stop		
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 24.3%												
ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Intersection Delay, s/veh	7.5											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	4	7	4	23	1	44	4	22	45	6
Future Vol, veh/h	8	2	4	7	4	23	1	44	4	22	45	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	9	2	4	8	4	25	1	48	4	24	49	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.1	7.4	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	57%	21%	30%
Vol Thru, %	90%	14%	12%	62%
Vol Right, %	8%	29%	68%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	14	34	73
LT Vol	1	8	7	22
Through Vol	44	2	4	45
RT Vol	4	4	23	6
Lane Flow Rate	53	15	37	79
Geometry Grp	1	1	1	1
Degree of Util (X)	0.061	0.018	0.039	0.094
Departure Headway (Hd)	4.11	4.237	3.827	4.281
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	869	835	923	836
Service Time	2.149	2.314	1.902	2.313
HCM Lane V/C Ratio	0.061	0.018	0.04	0.094
HCM Control Delay	7.4	7.4	7.1	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.3

Lanes, Volumes, Timings

10: 50 St & 44 Ave

08-08-2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	3	0	115	158	9
Future Volume (vph)	14	3	0	115	158	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.993	
Flt Protected	0.960					
Satd. Flow (prot)	1716	0	0	1830	1817	0
Flt Permitted	0.960					
Satd. Flow (perm)	1716	0	0	1830	1817	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	178.6			371.2	769.4	
Travel Time (s)	12.9			26.7	55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	3	0	125	172	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	125	182	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100	100	100			100
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.6

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 14 3 0 115 158 9

Future Vol, veh/h 14 3 0 115 158 9

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 15 3 0 125 172 10

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 302 177 182 0 - 0

Stage 1 177 - - - - -

Stage 2 125 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuver 683 858 1375 - - -

Stage 1 846 - - - - -

Stage 2 893 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 683 858 1375 - - -

Mov Cap-2 Maneuver 683 - - - - -

Stage 1 846 - - - - -

Stage 2 893 - - - - -

Approach EB NB SB

HCM Control Delay, s 10.2 0 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1375 - 709 - -

HCM Lane V/C Ratio - -0.026 - -

HCM Control Delay (s) 0 - 10.2 - -

HCM Lane LOS A - B - -

HCM 95th %tile Q(veh) 0 - 0.1 - -

Lanes, Volumes, Timings

11: 42 Ave & 50 St

08-08-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	5	5	171	161	9
Future Volume (vph)	9	5	5	171	161	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955				0.993	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1691	0	0	1828	1817	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1691	0	0	1828	1817	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	5	5	186	175	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	191	185	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	9	5	5	171	161	9
Future Vol, veh/h	9	5	5	171	161	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	10	5	5	186	175	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	376	180	185	0	-	0
Stage 1	180	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	619	855	1372	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	617	855	1372	-	-	-
Mov Cap-2 Maneuver	617	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1372	-	685	-	-	
HCM Lane V/C Ratio	0.004	-	0.022	-	-	
HCM Control Delay (s)	7.6	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	597	10	66	478	25	16	5	82	45	4	8
Future Volume (vph)	3	597	10	66	478	25	16	5	82	45	4	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	120.0		50.0	0.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	0.0			80.0			0.0			20.0		
Lane Util. 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
Frt		0.997				0.850		0.892			0.896	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1755	1842	0	1722	1812	1541	0	1667	0	1789	1688	0
Flt Permitted	0.950			0.950				0.992		0.950		
Satd. Flow (perm)	1755	1842	0	1722	1812	1541	0	1667	0	1789	1688	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			141.1			182.8	
Travel Time (s)		7.5			7.5			16.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	3	649	11	72	520	27	17	5	89	49	4	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	660	0	72	520	27	0	111	0	49	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.6%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	597	10	66	478	25	16	5	82	45	4	8
Future Vol, veh/h	3	597	10	66	478	25	16	5	82	45	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	120	-	50	-	-	-	20	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	3	649	11	72	520	27	17	5	89	49	4	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	547	0	0	660	0	0	1345	1352	655	1372	1330	520
Stage 1	-	-	-	-	-	-	661	661	-	664	664	-
Stage 2	-	-	-	-	-	-	684	691	-	708	666	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1012	-	-	909	-	-	129	150	466	123	155	556
Stage 1	-	-	-	-	-	-	452	460	-	450	458	-
Stage 2	-	-	-	-	-	-	439	446	-	426	457	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1012	-	-	909	-	-	116	138	466	91	142	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	138	-	91	142	-
Stage 1	-	-	-	-	-	-	451	459	-	449	422	-
Stage 2	-	-	-	-	-	-	394	411	-	339	456	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	24.6	69.6
HCM LOS			C	F

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	294	1012	-	-	909	-	-	91	282
HCM Lane V/C Ratio	0.381	0.003	-	-	0.079	-	-	0.538	0.046
HCM Control Delay (s)	24.6	8.6	-	-	9.3	-	-	83.3	18.4
HCM Lane LOS	C	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.3	-	-	2.4	0.1

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	748	3	22	550	39	7	1	63	110	0	18
Future Volume (vph)	10	748	3	22	550	39	7	1	63	110	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		80.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	40.0			40.0			0.0			20.0		
Lane Util. 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
Frt		0.999			0.990			0.881			0.850	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1722	1811	0	1772	1847	0	0	1589	0	1789	1601	0
Flt Permitted	0.350			0.240				0.970		0.707		
Satd. Flow (perm)	634	1811	0	448	1847	0	0	1549	0	1332	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6			68			214	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	11	813	3	24	598	42	8	1	68	120	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	816	0	24	640	0	0	77	0	120	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

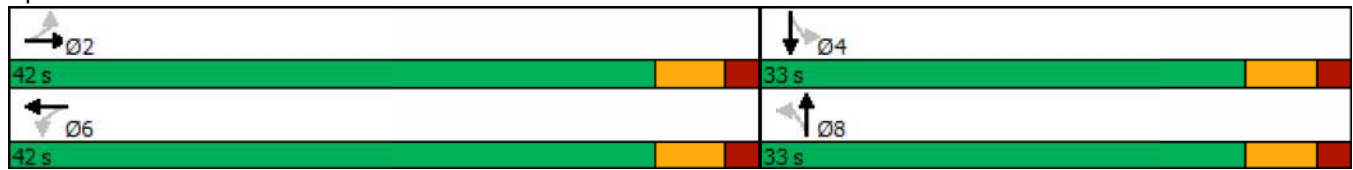
2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (s)	42.0	42.0		42.0	42.0		33.0	33.0		33.0	33.0	
Total Split (%)	56.0%	56.0%		56.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	4	4		4	4		4	4		4	4	
Act Effct Green (s)	41.8	41.8		41.8	41.8			13.5		13.5	13.5	
Actuated g/C Ratio	0.67	0.67		0.67	0.67			0.22		0.22	0.22	
v/c Ratio	0.03	0.67		0.08	0.52			0.20		0.42	0.04	
Control Delay	8.2	15.2		8.9	10.8			7.6		25.1	0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	8.2	15.2		8.9	10.8			7.6		25.1	0.2	
LOS	A	B		A	B			A		C	A	
Approach Delay		15.1			10.8			7.6			21.5	
Approach LOS		B			B			A			C	
Queue Length 50th (m)	0.4	51.8		0.9	33.8			0.8		11.7	0.0	
Queue Length 95th (m)	3.3	#178.0		6.0	105.4			8.6		23.5	0.0	
Internal Link Dist (m)		260.5			183.5			176.7			107.4	
Turn Bay Length (m)	80.0			80.0						60.0		
Base Capacity (vph)	423	1209		299	1235			712		579	817	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.03	0.67		0.08	0.52			0.11		0.21	0.02	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 62.6												
Natural Cycle: 75												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.67												
Intersection Signal Delay: 13.6						Intersection LOS: B						
Intersection Capacity Utilization 62.3%						ICU Level of Service B						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Queue shown is maximum after two cycles.

Splits and Phases: 2: 50 Ave & 52 St



Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-08-2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰		↱	↰	↱	
Traffic Volume (vph)	974	1	15	619	2	20
Future Volume (vph)	974	1	15	619	2	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	60.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			20.0		0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.876	
Flt Protected			0.950		0.996	
Satd. Flow (prot)	1830	0	1789	1883	1643	0
Flt Permitted			0.950		0.996	
Satd. Flow (perm)	1830	0	1789	1883	1643	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	1059	1	16	673	2	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1060	0	16	673	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	61.3%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	974	1	15	619	2	20
Future Vol, veh/h	974	1	15	619	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	60	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	1059	1	16	673	2	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1060	0	1765	1060
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	705	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	657	-	92	272
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	490	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	657	-	90	272
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	478	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.3		22.5		
HCM LOS	C					
Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	230	-	-	657	-	
HCM Lane V/C Ratio	0.104	-	-	0.025	-	
HCM Control Delay (s)	22.5	-	-	10.6	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	935	97	155	560	73	48	42	201	100	31	28
Future Volume (vph)	43	935	97	155	560	73	48	42	201	100	31	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		40.0	30.0		30.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	30.0			30.0			20.0			20.0		
Lane Util. 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
Frt			0.850		0.983			0.876			0.930	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1795	1526	1722	1782	0	1789	1650	0	1789	1752	0
Flt Permitted	0.392			0.060			0.715			0.250		
Satd. Flow (perm)	704	1795	1526	109	1782	0	1347	1650	0	471	1752	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149		13			171			30	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			118.8			769.4			203.6	
Travel Time (s)		14.6			8.6			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1016	105	168	609	79	52	46	218	109	34	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1016	105	168	688	0	52	264	0	109	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	L NA	Right	L NA	Left	Right	Left	Left	R NA
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3	2.0	6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6	2.0	6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		2		1	6			8		7	4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	15.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0	21.0	13.0	21.0		16.0	16.0		13.0	16.0	
Total Split (s)	67.0	67.0	67.0	14.0	81.0		16.0	16.0		13.0	29.0	
Total Split (%)	60.9%	60.9%	60.9%	12.7%	73.6%		14.5%	14.5%		11.8%	26.4%	
Maximum Green (s)	61.0	61.0	61.0	8.0	75.0		10.0	10.0		7.0	23.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	61.0	61.0	61.0	75.0	75.0		10.0	10.0		23.0	23.0	
Actuated g/C Ratio	0.55	0.55	0.55	0.68	0.68		0.09	0.09		0.21	0.21	
v/c Ratio	0.12	1.02	0.12	0.88	0.56		0.43	0.87		0.60	0.16	
Control Delay	12.8	59.5	0.9	64.6	11.1		58.8	45.5		51.6	22.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.8	59.5	0.9	64.6	11.1		58.8	45.5		51.6	22.7	
LOS	B	E	A	E	B		E	D		D	C	
Approach Delay		52.3			21.6			47.7			40.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	4.6	~232.1	0.0	20.7	67.1		10.8	19.6		19.9	5.9	
Queue Length 95th (m)	10.7	#307.3	3.0	#59.1	96.0		23.3	#64.0		#36.4	17.2	
Internal Link Dist (m)		178.7			94.8			745.4			179.6	
Turn Bay Length (m)	30.0		40.0	30.0			60.0			60.0		
Base Capacity (vph)	390	995	912	191	1219		122	305		182	390	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.12	1.02	0.12	0.88	0.56		0.43	0.87		0.60	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 97 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 40.5

Intersection LOS: D

Intersection Capacity Utilization 98.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1203	1	9	790	13	1	0	16	8	0	2
Future Volume (vph)	3	1203	1	9	790	13	1	0	16	8	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	60.0		0.0	60.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	30.0			20.0			0.0			0.0		
Lane Util. 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
Frt					0.998			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1812	0	1772	1861	0	1789	1601	0	1547	1384	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1722	1812	0	1772	1861	0	1789	1601	0	1547	1384	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		118.8			207.1			220.5			141.2	
Travel Time (s)		8.6			14.9			26.5			10.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	3	1308	1	10	859	14	1	0	17	9	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1309	0	10	873	0	1	17	0	9	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	76.7%						ICU Level of Service D					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	3	1203	1	9	790	13	1	0	16	8	0	2
Future Vol, veh/h	3	1203	1	9	790	13	1	0	16	8	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	60	-	-	60	-	-	50	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	3	1308	1	10	859	14	1	0	17	9	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	873	0	0	1309	0	0	2202	2208	1309	2209	2201	866
Stage 1	-	-	-	-	-	-	1315	1315	-	886	886	-
Stage 2	-	-	-	-	-	-	887	893	-	1323	1315	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	756	-	-	525	-	-	32	44	195	28	40	330
Stage 1	-	-	-	-	-	-	194	228	-	318	342	-
Stage 2	-	-	-	-	-	-	339	360	-	178	211	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	756	-	-	525	-	-	31	43	195	25	39	330
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	43	-	25	39	-
Stage 1	-	-	-	-	-	-	193	227	-	317	336	-
Stage 2	-	-	-	-	-	-	330	353	-	161	210	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			31.2			173		
HCM LOS							D			F		
Minor Lane/Major Mvm	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	31	195	756	-	-	525	-	-	25	330		
HCM Lane V/C Ratio	0.035	0.089	0.004	-	-	0.019	-	-	0.348	0.007		
HCM Control Delay (s)	125.3	25.3	9.8	-	-	12	-	-	212.2	16		
HCM Lane LOS	F	D	A	-	-	B	-	-	F	C		
HCM 95th %tile Q(veh)	0.1	0.3	0	-	-	0.1	-	-	1.1	0		

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1019	115	96	688	43	55	4	58	39	5	61
Future Volume (vph)	64	1019	115	96	688	43	55	4	58	39	5	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		90.0	100.0		100.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			40.0			40.0		
Lane Util. 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
Frt		0.985				0.850		0.859			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1768	0	1690	1779	1512	1772	1602	0	1789	1622	0
Flt Permitted	0.381			0.054			0.711			0.713		
Satd. Flow (perm)	684	1768	0	96	1779	1512	1326	1602	0	1343	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				47		63			66	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		207.1			242.5			91.1			93.6	
Travel Time (s)		14.9			17.5			10.9			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	70	1108	125	104	748	47	60	4	63	42	5	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1233	0	104	748	47	60	67	0	42	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3	2.0	6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6	2.0	6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0	21.0		13.0	21.0	21.0	16.0	16.0		16.0	16.0	
Total Split (s)	71.0	71.0		13.0	84.0	84.0	16.0	16.0		16.0	16.0	
Total Split (%)	71.0%	71.0%		13.0%	84.0%	84.0%	16.0%	16.0%		16.0%	16.0%	
Maximum Green (s)	65.0	65.0		7.0	78.0	78.0	10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	72.0	72.0		81.2	82.4	82.4	10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.72	0.72		0.81	0.82	0.82	0.10	0.10		0.10	0.10	
v/c Ratio	0.14	0.97		0.55	0.51	0.04	0.45	0.31		0.31	0.32	
Control Delay	7.7	37.1		24.8	5.1	0.8	54.3	16.3		48.6	16.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.7	37.1		24.8	5.1	0.8	54.3	16.3		48.6	16.5	
LOS	A	D		C	A	A	D	B		D	B	
Approach Delay		35.5			7.2			34.3			28.4	
Approach LOS		D			A			C			C	
Queue Length 50th (m)	4.8	~265.9		5.0	43.7	0.0	11.2	0.7		7.7	0.9	
Queue Length 95th (m)	10.6	#344.2		22.0	63.9	2.0	23.9	13.0		18.1	13.6	
Internal Link Dist (m)		183.1			218.5			67.1			69.6	
Turn Bay Length (m)	90.0			100.0		100.0	40.0			40.0		
Base Capacity (vph)	492	1276		189	1465	1254	132	216		134	221	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.97		0.55	0.51	0.04	0.45	0.31		0.31	0.32	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 91.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

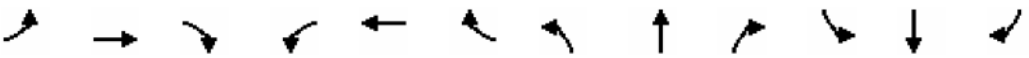
Splits and Phases: 6: 47 St & 50 Ave



Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1037	59	78	715	54	58	5	32	22	5	42
Future Volume (vph)	56	1037	59	78	715	54	58	5	32	22	5	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		80.0	120.0		120.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			80.0			20.0			20.0		
Lane Util. 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
Frt		0.992				0.850		0.869			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1815	0	1738	1865	1585	1738	1590	0	1789	1624	0
Flt Permitted	0.294			0.108			0.724			0.731		
Satd. Flow (perm)	538	1815	0	198	1865	1585	1325	1590	0	1377	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				59		35			46	
Link Speed (k/h)		70			70			50			30	
Link Distance (m)		261.0			799.2			123.2			154.5	
Travel Time (s)		13.4			41.1			8.9			18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%	5%	5%	5%	2%	5%	2%
Adj. Flow (vph)	61	1127	64	85	777	59	63	5	35	24	5	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1191	0	85	777	59	63	40	0	24	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.8			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		100	100		20	100		100	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		2.0	29.3	6.1	2.0	10.0		6.1	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		2.0	0.6	6.1	2.0	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

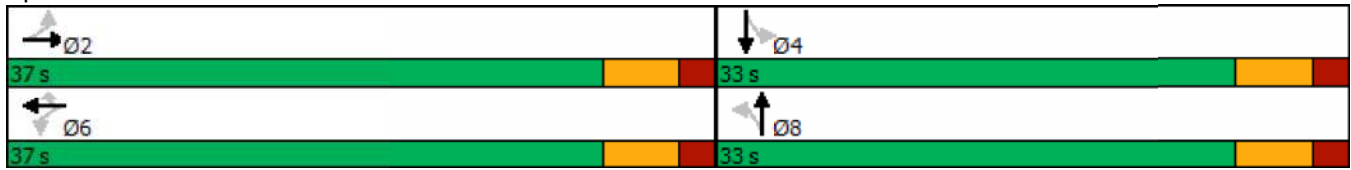
Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.0	33.0		33.0	33.0	33.0	33.0	33.0		33.0	33.0	
Total Split (s)	37.0	37.0		37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Split (%)	52.9%	52.9%		52.9%	52.9%	52.9%	47.1%	47.1%		47.1%	47.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Act Effct Green (s)	39.5	39.5		39.5	39.5	39.5	10.1	10.1		10.1	10.1	
Actuated g/C Ratio	0.75	0.75		0.75	0.75	0.75	0.19	0.19		0.19	0.19	
v/c Ratio	0.15	0.88		0.57	0.56	0.05	0.25	0.12		0.09	0.15	
Control Delay	6.2	23.2		33.3	8.3	1.9	21.1	9.4		18.7	8.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.2	23.2		33.3	8.3	1.9	21.1	9.4		18.7	8.7	
LOS	A	C		C	A	A	C	A		B	A	
Approach Delay		22.3			10.2			16.6			11.9	
Approach LOS		C			B			B			B	
Queue Length 50th (m)	2.3	~137.4		5.1	45.2	0.0	5.2	0.4		1.9	0.4	
Queue Length 95th (m)	7.3	#206.2		#27.5	82.6	3.3	13.5	6.4		6.7	7.1	
Internal Link Dist (m)		237.0			775.2			99.2			130.5	
Turn Bay Length (m)	70.0			120.0		120.0	40.0			40.0		
Base Capacity (vph)	403	1361		148	1397	1202	678	831		704	853	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.15	0.88		0.57	0.56	0.05	0.09	0.05		0.03	0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length: 70												
Actuated Cycle Length: 52.7												
Natural Cycle: 130												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.88												
Intersection Signal Delay: 17.0						Intersection LOS: B						
Intersection Capacity Utilization 84.7%						ICU Level of Service E						
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 7: 50 Ave & 45 St



Lanes, Volumes, Timings
8: 50 Ave & Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1193	1	5	847	1	1	0	10	1	0	1
Future Volume (vph)	1	1193	1	5	847	1	1	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		100.0	120.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.876			0.932	
Flt Protected				0.950				0.996			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Flt Permitted				0.950				0.996			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1297	1	5	921	1	1	0	11	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1298	1	5	922	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	73.6%						ICU Level of Service D					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱			↰			↰	↱
Traffic Vol, veh/h	1	1193	1	5	847	1	1	0	10	1	0	1
Future Vol, veh/h	1	1193	1	5	847	1	1	0	10	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	1297	1	5	921	1	1	0	11	1	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	922	0	0	1298	0	0	2231	2231	1297	2237	2232	922
Stage 1	-	-	-	-	-	-	1299	1299	-	932	932	-
Stage 2	-	-	-	-	-	-	932	932	-	1305	1300	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	728	-	-	524	-	-	30	42	195	30	42	323
Stage 1	-	-	-	-	-	-	196	228	-	316	341	-
Stage 2	-	-	-	-	-	-	316	341	-	194	228	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	728	-	-	524	-	-	30	41	195	28	41	323
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	41	-	28	41	-
Stage 1	-	-	-	-	-	-	195	227	-	314	338	-
Stage 2	-	-	-	-	-	-	312	338	-	182	227	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			35.5			77.2		
HCM LOS							E			F		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)		130	728	-	-	524	-	-	52			
HCM Lane V/C Ratio		0.092	0.001	-	-	0.01	-	-	0.042			
HCM Control Delay (s)		35.5	10	0	-	11.9	-	-	77.2			
HCM Lane LOS		E	A	A	-	B	-	-	F			
HCM 95th %tile Q(veh)		0.3	0	-	-	0	-	-	0.1			

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	1	6	2	23	0	119	12	53	141	7
Future Volume (vph)	5	3	1	6	2	23	0	119	12	53	141	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.985			0.901			0.988			0.995	
Flt Protected		0.973			0.990						0.987	
Satd. Flow (prot)	0	1705	0	0	1664	0	0	1791	0	0	1655	0
Flt Permitted		0.973			0.990						0.987	
Satd. Flow (perm)	0	1705	0	0	1664	0	0	1791	0	0	1655	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	5	3	1	7	2	25	0	129	13	58	153	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	34	0	0	142	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	36.6%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	8.5											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	1	6	2	23	0	119	12	53	141	7
Future Vol, veh/h	5	3	1	6	2	23	0	119	12	53	141	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	5	3	1	7	2	25	0	129	13	58	153	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.6	8.1	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	19%	26%
Vol Thru, %	91%	33%	6%	70%
Vol Right, %	9%	11%	74%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	9	31	201
LT Vol	0	5	6	53
Through Vol	119	3	2	141
RT Vol	12	1	23	7
Lane Flow Rate	142	10	34	218
Geometry Grp	1	1	1	1
Degree of Util (X)	0.166	0.013	0.041	0.264
Departure Headway (Hd)	4.188	4.936	4.368	4.354
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	843	729	825	817
Service Time	2.279	2.938	2.368	2.418
HCM Lane V/C Ratio	0.168	0.014	0.041	0.267
HCM Control Delay	8.1	8	7.6	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0	0.1	1.1

Lanes, Volumes, Timings

10: 50 St & 44 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	1	1	2	31	5	221	3	29	181	24
Future Volume (vph)	12	1	1	1	2	31	5	221	3	29	181	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.991			0.876			0.998			0.986	
Flt Protected		0.958			0.999			0.999			0.994	
Satd. Flow (prot)	0	1737	0	0	1601	0	0	1824	0	0	1793	0
Flt Permitted		0.958			0.999			0.999			0.994	
Satd. Flow (perm)	0	1737	0	0	1601	0	0	1824	0	0	1793	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		178.6			201.7			371.2			769.4	
Travel Time (s)		12.9			14.5			26.7			55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	1	1	1	2	34	5	240	3	32	197	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	37	0	0	248	0	0	255	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 40.5% ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	1	1	1	2	31	5	221	3	29	181	24
Future Vol, veh/h	12	1	1	1	2	31	5	221	3	29	181	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	13	1	1	1	2	34	5	240	3	32	197	26
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	544	527	210	527	539	242	223	0	0	243	0	0
Stage 1	274	274	-	252	252	-	-	-	-	-	-	-
Stage 2	270	253	-	275	287	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	445	452	823	457	445	790	1328	-	-	1306	-	-
Stage 1	726	678	-	746	693	-	-	-	-	-	-	-
Stage 2	729	692	-	725	669	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	414	438	823	445	431	790	1328	-	-	1306	-	-
Mov Cap-2 Maneuver	414	438	-	445	431	-	-	-	-	-	-	-
Stage 1	723	659	-	743	690	-	-	-	-	-	-	-
Stage 2	693	689	-	703	650	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.7		10.1		0.2		1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1328	-	-	431	737	1306	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.035	0.05	0.024	-	-				
HCM Control Delay (s)	7.7	0	-	13.7	10.1	7.8	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	6	7	214	162	75
Future Volume (vph)	53	6	7	214	162	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.957	
Flt Protected	0.957			0.998		
Satd. Flow (prot)	1725	0	0	1826	1751	0
Flt Permitted	0.957			0.998		
Satd. Flow (perm)	1725	0	0	1826	1751	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	7	8	233	176	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	0	241	258	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR

Lane Configurations	Y			Y	Y	

Traffic Vol, veh/h	53	6	7	214	162	75

Future Vol, veh/h	53	6	7	214	162	75

Conflicting Peds, #/hr	0	0	0	0	0	0

Sign Control	Stop	Stop	Free	Free	Free	Free

RT Channelized	-	None	-	None	-	None

Storage Length	0	-	-	-	-	-

Veh in Median Storage	0	-	-	0	0	-

Grade, %	0	-	-	0	0	-

Peak Hour Factor	92	92	92	92	92	92

Heavy Vehicles, %	5	5	5	5	5	5

Mvmt Flow	58	7	8	233	176	82

Major/Minor	Minor2	Major1	Major2

Conflicting Flow All	466	217	258

Stage 1	217	-	-

Stage 2	249	-	-

Critical Hdwy	6.45	6.25	4.15

Critical Hdwy Stg 1	5.45	-	-

Critical Hdwy Stg 2	5.45	-	-

Follow-up Hdwy	3.545	3.345	2.245

Pot Cap-1 Maneuve	549	815	1289

Stage 1	812	-	-

Stage 2	785	-	-

Platoon blocked, %			

Mov Cap-1 Maneuve	545	815	1289

Mov Cap-2 Maneuve	545	-	-

Stage 1	806	-	-

Stage 2	785	-	-

Approach	EB	NB	SB

HCM Control Delay, s	12.2	0.2	0

HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR

Capacity (veh/h)	1289	-	564	-	-

HCM Lane V/C Ratio	0.006	-	0.114	-	-

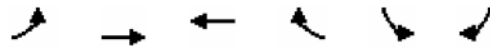
HCM Control Delay (s)	7.8	0	12.2	-	-

HCM Lane LOS	A	A	B	-	-

HCM 95th %tile Q(veh)	0	-	0.4	-	-

Lanes, Volumes, Timings
12: 50 Ave & Commercial Access

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	1088	805	25	16	22
Future Volume (vph)	26	1088	805	25	16	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0			60.0	40.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	40.0				20.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1738	1830	1830	1555	1738	1555
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1738	1830	1830	1555	1738	1555
Link Speed (k/h)		50	50		50	
Link Distance (m)		242.5	261.0		127.0	
Travel Time (s)		17.5	18.8		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1183	875	27	17	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	1183	875	27	17	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	67.3%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations      

Traffic Vol, veh/h 26 1088 805 25 16 22

Future Vol, veh/h 26 1088 805 25 16 22

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 40 - - 60 40 0

Veh in Median Storage, # 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 28 1183 875 27 17 24

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 902 0 - 0 2114 875

Stage 1 - - - - 875 -

Stage 2 - - - - 1239 -

Critical Hdwy 4.15 - - - 6.45 6.25

Critical Hdwy Stg 1 - - - - 5.45 -

Critical Hdwy Stg 2 - - - - 5.45 -

Follow-up Hdwy 2.245 - - - 3.545 3.345

Pot Cap-1 Maneuver 741 - - - 55 344

Stage 1 - - - - 403 -

Stage 2 - - - - 269 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 741 - - - 53 344

Mov Cap-2 Maneuver - - - - 53 -

Stage 1 - - - - 388 -

Stage 2 - - - - 269 -

Approach EB WB SB

HCM Control Delay, s 0.2 0 52.8

HCM LOS F

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 741 - - - 53 344

HCM Lane V/C Ratio 0.038 - - - 0.328 0.07

HCM Control Delay (s) 10.1 - - - 103.1 16.2

HCM Lane LOS B - - - F C

HCM 95th %tile Q(veh) 0.1 - - - 1.2 0.2

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	496	30	120	668	60	26	6	81	17	4	6
Future Volume (vph)	7	496	30	120	668	60	26	6	81	17	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	120.0		50.0	0.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	0.0			80.0			0.0			20.0		
Lane Util. 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
Frt		0.991				0.850		0.903			0.905	
Flt Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1755	1831	0	1722	1812	1541	0	1682	0	1789	1705	0
Flt Permitted	0.950			0.950				0.989		0.950		
Satd. Flow (perm)	1755	1831	0	1722	1812	1541	0	1682	0	1789	1705	0
Link Speed (k/h)		70			70			30			30	
Link Distance (m)		104.1			104.2			141.1			182.8	
Travel Time (s)		5.4			5.4			16.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	8	539	33	130	726	65	28	7	88	18	4	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	572	0	130	726	65	0	123	0	18	11	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.9%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	496	30	120	668	60	26	6	81	17	4	6
Future Vol, veh/h	7	496	30	120	668	60	26	6	81	17	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	120	-	50	-	-	-	20	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	8	539	33	130	726	65	28	7	88	18	4	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	791	0	0	572	0	0	1596	1623	556	1605	1574	726
Stage 1	-	-	-	-	-	-	572	572	-	986	986	-
Stage 2	-	-	-	-	-	-	1024	1051	-	619	588	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	821	-	-	981	-	-	86	103	531	85	110	425
Stage 1	-	-	-	-	-	-	505	504	-	298	326	-
Stage 2	-	-	-	-	-	-	284	304	-	476	496	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	821	-	-	981	-	-	73	88	531	60	94	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	88	-	60	94	-
Stage 1	-	-	-	-	-	-	500	499	-	295	283	-
Stage 2	-	-	-	-	-	-	239	264	-	388	491	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.3			50			66.4		
HCM LOS							F			F		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	196	821	-	-	981	-	-	60	176			
HCM Lane V/C Ratio	0.627	0.009	-	-	0.133	-	-	0.308	0.062			
HCM Control Delay (s)	50	9.4	-	-	9.2	-	-	89.7	26.8			
HCM Lane LOS	F	A	-	-	A	-	-	F	D			
HCM 95th %tile Q(veh)	3.6	0	-	-	0.5	-	-	1.1	0.2			

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	571	6	59	840	115	5	1	31	55	5	13
Future Volume (vph)	18	571	6	59	840	115	5	1	31	55	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		80.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	40.0			40.0			0.0			20.0		
Lane Util. 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
Frt		0.998			0.982			0.885			0.889	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1722	1809	0	1772	1832	0	0	1594	0	1789	1674	0
Flt Permitted	0.166			0.381				0.964		0.731		
Satd. Flow (perm)	301	1809	0	711	1832	0	0	1546	0	1377	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13			34			14	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	20	621	7	64	913	125	5	1	34	60	5	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	628	0	64	1038	0	0	40	0	60	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (s)	57.0	57.0		57.0	57.0		33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.0	51.0		51.0	51.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	4	4		4	4		4	4		4	4	
Act Effct Green (s)	60.0	60.0		60.0	60.0			13.1		13.1	13.1	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16		0.16	0.16	
v/c Ratio	0.09	0.46		0.12	0.76			0.14		0.27	0.07	
Control Delay	7.6	8.2		6.7	15.1			11.8		31.1	15.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	7.6	8.2		6.7	15.1			11.8		31.1	15.0	
LOS	A	A		A	B			B		C	B	
Approach Delay		8.2			14.7			11.8			27.3	
Approach LOS		A			B			B			C	
Queue Length 50th (m)	0.7	32.5		2.4	79.7			0.8		8.3	0.7	
Queue Length 95th (m)	5.2	99.8		11.3	#260.0			7.7		16.9	5.4	
Internal Link Dist (m)		260.5			183.5			176.7			107.4	
Turn Bay Length (m)	80.0			80.0						60.0		
Base Capacity (vph)	224	1352		531	1372			546		466	576	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.09	0.46		0.12	0.76			0.07		0.13	0.03	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 80.3												
Natural Cycle: 90												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.76												
Intersection Signal Delay: 12.9						Intersection LOS: B						
Intersection Capacity Utilization 70.9%						ICU Level of Service C						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Queue shown is maximum after two cycles.

Splits and Phases: 2: 50 Ave & 52 St



Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-10-2025

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	679	2	24	1099	4	18
Future Volume (vph)	679	2	24	1099	4	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	60.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			20.0		0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.887	
Flt Protected			0.950		0.992	
Satd. Flow (prot)	1830	0	1789	1883	1657	0
Flt Permitted			0.950		0.992	
Satd. Flow (perm)	1830	0	1789	1883	1657	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	738	2	26	1195	4	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	740	0	26	1195	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	67.8%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.4

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations						
Traffic Vol, veh/h	679	2	24	1099	4	18
Future Vol, veh/h	679	2	24	1099	4	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	738	2	26	1195	4	20

Major/Minor Major1 Major2 Minor1

Conflicting Flow All	0	0	740	0	1986	739
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	1247	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	867	-	67	417
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	271	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	867	-	65	417
Mov Cap-2 Maneuver	-	-	-	-	65	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	263	-

Approach EB WB NB

HCM Control Delay, s	0	0.2	24.3
HCM LOS			C

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h)	210	-	-	867	-
HCM Lane V/C Ratio	0.114	-	-	0.03	-
HCM Control Delay (s)	24.3	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	582	97	219	949	105	136	26	243	56	13	32
Future Volume (vph)	44	582	97	219	949	105	136	26	243	56	13	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		40.0	30.0		30.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	30.0			30.0			20.0			20.0		
Lane Util. 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
Frt			0.850		0.985			0.864			0.893	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1795	1526	1722	1785	0	1789	1627	0	1789	1682	0
Flt Permitted	0.075			0.288			0.725			0.400		
Satd. Flow (perm)	135	1795	1526	522	1785	0	1365	1627	0	753	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		11			264			35	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			118.8			769.4			203.6	
Travel Time (s)		14.6			8.6			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	48	633	105	238	1032	114	148	28	264	61	14	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	633	105	238	1146	0	148	292	0	61	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	L NA	Right	L NA	Left	Right	Left	Left	R NA
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3	2.0	6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6	2.0	6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	21.0	21.0	13.0	21.0		16.0	16.0		16.0	16.0	
Total Split (s)	13.0	58.0	58.0	16.0	61.0		16.0	16.0		16.0	16.0	
Total Split (%)	14.4%	64.4%	64.4%	17.8%	67.8%		17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	7.0	52.0	52.0	10.0	55.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	60.2	53.2	53.2	66.0	60.2		10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.67	0.59	0.59	0.73	0.67		0.11	0.11		0.11	0.11	
v/c Ratio	0.23	0.60	0.11	0.48	0.96		0.98	0.70		0.73	0.22	
Control Delay	6.5	14.8	2.0	6.5	35.0		111.3	17.3		86.3	20.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.5	14.8	2.0	6.5	35.0		111.3	17.3		86.3	20.1	
LOS	A	B	A	A	D		F	B		F	C	
Approach Delay		12.6			30.1			48.9			56.8	
Approach LOS		B			C			D			E	
Queue Length 50th (m)	1.7	64.1	0.0	9.3	~217.1		26.0	4.4		10.4	2.2	
Queue Length 95th (m)	3.9	99.0	5.9	15.4	#292.1		#62.6	#31.1		#31.3	12.3	
Internal Link Dist (m)		178.7			94.8			745.4			179.6	
Turn Bay Length (m)	30.0		40.0	30.0			60.0			60.0		
Base Capacity (vph)	212	1061	946	517	1197		151	415		83	218	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.60	0.11	0.46	0.96		0.98	0.70		0.73	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 29.2

Intersection LOS: C

Intersection Capacity Utilization 106.9%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	867	3	3	1321	12	10	1	15	12	0	12
Future Volume (vph)	9	867	3	3	1321	12	10	1	15	12	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	60.0		0.0	60.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	30.0			20.0			0.0			0.0		
Lane Util. 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
Frt					0.999			0.859			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1812	0	1772	1863	0	1789	1618	0	1547	1384	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1722	1812	0	1772	1863	0	1789	1618	0	1547	1384	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		118.8			207.1			220.5			141.2	
Travel Time (s)		8.6			14.9			26.5			10.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	10	942	3	3	1436	13	11	1	16	13	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	945	0	3	1449	0	11	17	0	13	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	84.3%				ICU Level of Service E							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	867	3	3	1321	12	10	1	15	12	0	12
Future Vol, veh/h	9	867	3	3	1321	12	10	1	15	12	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	60	-	-	60	-	-	50	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	10	942	3	3	1436	13	11	1	16	13	0	13

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	1449	0	0	945	0	0	2419	2419	944	2421	2414	1443
Stage 1	-	-	-	-	-	-	964	964	-	1449	1449	-
Stage 2	-	-	-	-	-	-	1455	1455	-	972	965	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	455	-	-	722	-	-	22	32	318	20	29	149
Stage 1	-	-	-	-	-	-	307	334	-	150	181	-
Stage 2	-	-	-	-	-	-	162	195	-	284	313	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	455	-	-	722	-	-	20	31	318	18	28	149
Mov Cap-2 Maneuver	-	-	-	-	-	-	20	31	-	18	28	-
Stage 1	-	-	-	-	-	-	300	327	-	147	180	-
Stage 2	-	-	-	-	-	-	147	194	-	263	306	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.1		0		136.6		218.7	
HCM LOS					F		F	

Minor Lane/Major Mvm	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	20	201	455	-	-	722	-	-	18	149
HCM Lane V/C Ratio	0.543	0.087	0.022	-	-	0.005	-	-	0.725	0.088
HCM Control Delay (s)	\$ 315.9	24.6	13.1	-	-	10	-	-	\$ 405.8	31.5
HCM Lane LOS	F	C	B	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	1.5	0.3	0.1	-	-	0	-	-	1.9	0.3

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	770	92	94	1138	87	107	6	137	66	8	74
Future Volume (vph)	64	770	92	94	1138	87	107	6	137	66	8	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		90.0	100.0		100.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			40.0			40.0		
Lane Util. 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
Frt		0.984				0.850		0.857			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1767	0	1690	1779	1512	1772	1598	0	1789	1629	0
Flt Permitted	0.061			0.185			0.699			0.499		
Satd. Flow (perm)	110	1767	0	329	1779	1512	1304	1598	0	940	1629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				98		149			80	
Link Speed (k/h)		70			70			30			30	
Link Distance (m)		207.1			242.5			91.1			93.6	
Travel Time (s)		10.7			12.5			10.9			11.2	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	70	811	100	102	1198	95	116	7	149	72	9	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	911	0	102	1198	95	116	156	0	72	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3	2.0	6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6	2.0	6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings
6: 47 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	21.0		13.0	21.0	21.0	16.0	16.0		16.0	16.0	
Total Split (s)	13.0	71.0		13.0	71.0	71.0	16.0	16.0		16.0	16.0	
Total Split (%)	13.0%	71.0%		13.0%	71.0%	71.0%	16.0%	16.0%		16.0%	16.0%	
Maximum Green (s)	7.0	65.0		7.0	65.0	65.0	10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None		None	None	
Act Effct Green (s)	70.7	65.2		70.7	65.2	65.2	10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.73	0.67		0.73	0.67	0.67	0.10	0.10		0.10	0.10	
v/c Ratio	0.36	0.77		0.30	1.01	0.09	0.87	0.53		0.74	0.37	
Control Delay	13.0	17.3		5.2	46.4	1.5	94.9	15.1		86.5	16.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.0	17.3		5.2	46.4	1.5	94.9	15.1		86.5	16.9	
LOS	B	B		A	D	A	F	B		F	B	
Approach Delay		17.0			40.4			49.2			48.0	
Approach LOS		B			D			D			D	
Queue Length 50th (m)	2.5	113.4		3.7	~251.4	0.0	22.6	1.2		13.8	1.6	
Queue Length 95th (m)	11.2	171.2		6.9	#327.6	4.8	#54.7	19.3		#37.7	15.7	
Internal Link Dist (m)		183.1			218.5			67.1			69.6	
Turn Bay Length (m)	90.0			100.0		100.0	40.0			40.0		
Base Capacity (vph)	194	1187		337	1191	1044	134	297		97	239	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.77		0.30	1.01	0.09	0.87	0.53		0.74	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 97.4

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 33.5

Intersection LOS: C

Intersection Capacity Utilization 102.9%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

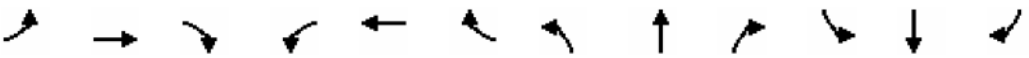
Splits and Phases: 6: 47 St & 50 Ave

 Ø1  13 s	 Ø2  71 s	 Ø4  16 s
 Ø5  13 s	 Ø6  71 s	 Ø8  16 s

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	880	57	72	1124	70	117	5	128	95	5	93
Future Volume (vph)	57	880	57	72	1124	70	117	5	128	95	5	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		80.0	120.0		120.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			80.0			20.0			20.0		
Lane Util. 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
Frt		0.991				0.850		0.855			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1813	0	1738	1865	1585	1738	1564	0	1789	1612	0
Flt Permitted	0.074			0.180			0.689			0.659		
Satd. Flow (perm)	135	1813	0	329	1865	1585	1261	1564	0	1241	1612	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				76		139			101	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		261.0			799.2			123.2			154.5	
Travel Time (s)		13.4			41.1			8.9			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%	5%	5%	5%	2%	5%	2%
Adj. Flow (vph)	62	957	62	78	1222	76	127	5	139	103	5	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1019	0	78	1222	76	127	144	0	103	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.8			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		100	100		20	100		100	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		2.0	29.3	6.1	2.0	10.0		6.1	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		2.0	0.6	6.1	2.0	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	16.0	16.0		16.0	16.0	
Total Split (s)	64.0	64.0		64.0	64.0	64.0	16.0	16.0		16.0	16.0	
Total Split (%)	80.0%	80.0%		80.0%	80.0%	80.0%	20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	58.0	58.0		58.0	58.0	58.0	10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	
Act Effct Green (s)	58.0	58.0		58.0	58.0	58.0	10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.72	0.72		0.72	0.72	0.72	0.12	0.12		0.12	0.12	
v/c Ratio	0.64	0.77		0.33	0.90	0.06	0.81	0.45		0.66	0.37	
Control Delay	41.7	12.0		8.4	20.6	1.0	72.0	11.9		56.0	12.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.7	12.0		8.4	20.6	1.0	72.0	11.9		56.0	12.1	
LOS	D	B		A	C	A	E	B		E	B	
Approach Delay		13.7			18.8			40.0			33.7	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	3.9	77.7		3.5	119.8	0.0	19.1	0.7		15.2	0.7	
Queue Length 95th (m)	#27.3	129.1		10.3	#247.5	2.8	#47.3	15.8		#37.4	14.0	
Internal Link Dist (m)		237.0			775.2			99.2			130.5	
Turn Bay Length (m)	70.0			120.0		120.0	40.0			40.0		
Base Capacity (vph)	97	1317		238	1352	1170	157	317		155	289	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.64	0.77		0.33	0.90	0.06	0.81	0.45		0.66	0.37	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Natural Cycle: 80												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.90												
Intersection Signal Delay: 20.0						Intersection LOS: B						
Intersection Capacity Utilization 91.5%						ICU Level of Service F						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 7: 50 Ave & 45 St



Lanes, Volumes, Timings
8: 50 Ave & Range Road 265

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1148	4	1	1206	1	7	0	4	1	0	1
Future Volume (vph)	1	1148	4	1	1206	1	7	0	4	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		100.0	120.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.955			0.932	
Flt Protected				0.950				0.968			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Flt Permitted				0.950				0.968			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1248	4	1	1311	1	8	0	4	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1249	4	1	1312	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	80.2%				ICU Level of Service D							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱			↰↱			↰↱	
Traffic Vol, veh/h	1	1148	4	1	1206	1	7	0	4	1	0	1
Future Vol, veh/h	1	1148	4	1	1206	1	7	0	4	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	1248	4	1	1311	1	8	0	4	1	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1312	0	0	1252	0	0	2564	2564	1248	2568	2568	1312
Stage 1	-	-	-	-	-	-	1250	1250	-	1314	1314	-
Stage 2	-	-	-	-	-	-	1314	1314	-	1254	1254	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	517	-	-	546	-	-	17	26	208	17	25	191
Stage 1	-	-	-	-	-	-	209	241	-	192	225	-
Stage 2	-	-	-	-	-	-	192	225	-	208	240	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	517	-	-	546	-	-	17	26	208	17	25	191
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	26	-	17	25	-
Stage 1	-	-	-	-	-	-	208	240	-	191	225	-
Stage 2	-	-	-	-	-	-	191	225	-	202	239	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			230.3			129.7		
HCM LOS							F			F		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1	EBL	EBT	EBR
Capacity (veh/h)		26	517	-	-	546	-	-	31			
HCM Lane V/C Ratio		0.46	0.002	-	-	0.002	-	-	0.07			
HCM Control Delay (s)		230.3	12	0	-	11.6	-	-	129.7			
HCM Lane LOS		F	B	A	-	B	-	-	F			
HCM 95th %tile Q(veh)		1.4	0	-	-	0	-	-	0.2			

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2	4	10	4	29	1	156	11	28	114	6
Future Volume (vph)	8	2	4	10	4	29	1	156	11	28	114	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.964			0.908			0.991			0.994	
Flt Protected		0.971			0.988						0.991	
Satd. Flow (prot)	0	1665	0	0	1673	0	0	1796	0	0	1660	0
Flt Permitted		0.971			0.988						0.991	
Satd. Flow (perm)	0	1665	0	0	1673	0	0	1796	0	0	1660	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	9	2	4	11	4	32	1	170	12	30	124	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	47	0	0	183	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.9%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	8.4											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	4	10	4	29	1	156	11	28	114	6
Future Vol, veh/h	8	2	4	10	4	29	1	156	11	28	114	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	9	2	4	11	4	32	1	170	12	30	124	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.7	8.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	57%	23%	19%
Vol Thru, %	93%	14%	9%	77%
Vol Right, %	7%	29%	67%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	168	14	43	148
LT Vol	1	8	10	28
Through Vol	156	2	4	114
RT Vol	11	4	29	6
Lane Flow Rate	183	15	47	161
Geometry Grp	1	1	1	1
Degree of Util (X)	0.213	0.02	0.057	0.197
Departure Headway (Hd)	4.196	4.811	4.385	4.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	748	822	804
Service Time	2.285	2.814	2.386	2.487
HCM Lane V/C Ratio	0.217	0.02	0.057	0.2
HCM Control Delay	8.4	7.9	7.7	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0.2	0.7

Lanes, Volumes, Timings

10: 50 St & 44 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1	3	5	2	57	1	262	1	17	219	10
Future Volume (vph)	15	1	3	5	2	57	1	262	1	17	219	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.980			0.879						0.994	
Flt Protected		0.962			0.996						0.997	
Satd. Flow (prot)	0	1725	0	0	1602	0	0	1830	0	0	1813	0
Flt Permitted		0.962			0.996						0.997	
Satd. Flow (perm)	0	1725	0	0	1602	0	0	1830	0	0	1813	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		178.6			201.7			371.2			769.4	
Travel Time (s)		12.9			14.5			26.7			55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1	3	5	2	62	1	285	1	18	238	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	69	0	0	287	0	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 37.5% ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	1	3	5	2	57	1	262	1	17	219	10
Future Vol, veh/h	15	1	3	5	2	57	1	262	1	17	219	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	16	1	3	5	2	62	1	285	1	18	238	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	600	568	244	570	573	286	249	0	0	286	0	0
Stage 1	280	280	-	288	288	-	-	-	-	-	-	-
Stage 2	320	288	-	282	285	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	408	428	787	428	426	746	1299	-	-	1259	-	-
Stage 1	720	674	-	713	668	-	-	-	-	-	-	-
Stage 2	685	668	-	718	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	368	420	787	419	418	746	1299	-	-	1259	-	-
Mov Cap-2 Maneuver	368	420	-	419	418	-	-	-	-	-	-	-
Stage 1	719	663	-	712	667	-	-	-	-	-	-	-
Stage 2	625	667	-	702	659	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.4		10.8		0		0.5					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1299	-	-	405	687	1259	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.051	0.101	0.015	-	-				
HCM Control Delay (s)	7.8	0	-	14.4	10.8	7.9	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-				



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	130	10	6	199	199	38
Future Volume (vph)	130	10	6	199	199	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.978	
Flt Protected	0.956			0.998		
Satd. Flow (prot)	1732	0	0	1826	1789	0
Flt Permitted	0.956			0.998		
Satd. Flow (perm)	1732	0	0	1826	1789	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	11	7	216	216	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	0	223	257	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 3.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 130 10 6 199 199 38

Future Vol, veh/h 130 10 6 199 199 38

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 141 11 7 216 216 41

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 467 237 257 0 - 0

Stage 1 237 - - - - -

Stage 2 230 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuve 549 795 1290 - - -

Stage 1 795 - - - - -

Stage 2 801 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuve 546 795 1290 - - -

Mov Cap-2 Maneuve 546 - - - - -

Stage 1 790 - - - - -

Stage 2 801 - - - - -

Approach EB NB SB

HCM Control Delay, s 13.9 0.2 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1290 - 558 - -

HCM Lane V/C Ratio 0.005 - 0.273 - -

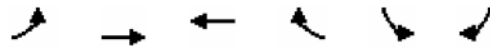
HCM Control Delay (s) 7.8 0 13.9 - -

HCM Lane LOS A A B - -

HCM 95th %tile Q(veh) 0 - 1.1 - -

Lanes, Volumes, Timings
12: 50 Ave & Commercial Access

08-10-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	934	1262	50	43	25
Future Volume (vph)	38	934	1262	50	43	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0			60.0	40.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	40.0				20.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1738	1830	1830	1555	1738	1555
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1738	1830	1830	1555	1738	1555
Link Speed (k/h)		70	70		50	
Link Distance (m)		242.5	261.0		127.0	
Travel Time (s)		12.5	13.4		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	1015	1372	54	47	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	1015	1372	54	47	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	76.4%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 11.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	38	934	1262	50	43	25
Future Vol, veh/h	38	934	1262	50	43	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	40	-	-	60	40	0
Veh in Median Storage, #	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	41	1015	1372	54	47	27

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	1426	0	-	0	2469	1372
Stage 1	-	-	-	-	1372	-
Stage 2	-	-	-	-	1097	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	468	-	-	-	~ 32	176
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	316	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	468	-	-	-	~ 29	176
Mov Cap-2 Maneuver	-	-	-	-	~ 29	-
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	316	-

Approach EB WB SB

HCM Control Delay, \$	0.5	0	\$ 388.2
HCM LOS			F

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	468	-	-	-	29	176
HCM Lane V/C Ratio	0.088	-	-	-	1.612	0.154
HCM Control Delay (s)	13.4	-	-	-	\$ 596.9	29.2
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.3	-	-	-	5.4	0.5

Notes

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

Lanes, Volumes, Timings
1: 50 Ave & Westview Dr

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	597	10	66	478	25	16	5	82	10	4	8
Future Volume (vph)	3	597	10	66	478	25	16	5	82	10	4	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	120.0		50.0	0.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	0.0			80.0			0.0			20.0		
Lane Util. 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
Frt		0.997				0.850		0.892			0.896	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1755	1842	0	1722	1812	1541	0	1667	0	1789	1688	0
Flt Permitted	0.950			0.950				0.992		0.950		
Satd. Flow (perm)	1755	1842	0	1722	1812	1541	0	1667	0	1789	1688	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			141.1			182.8	
Travel Time (s)		7.5			7.5			16.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	3	649	11	72	520	27	17	5	89	11	4	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	660	0	72	520	27	0	111	0	11	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.6%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	597	10	66	478	25	16	5	82	10	4	8
Future Vol, veh/h	3	597	10	66	478	25	16	5	82	10	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	120	-	50	-	-	-	20	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	3	649	11	72	520	27	17	5	89	11	4	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	547	0	0	660	0	0	1345	1352	655	1372	1330	520
Stage 1	-	-	-	-	-	-	661	661	-	664	664	-
Stage 2	-	-	-	-	-	-	684	691	-	708	666	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1012	-	-	909	-	-	129	150	466	123	155	556
Stage 1	-	-	-	-	-	-	452	460	-	450	458	-
Stage 2	-	-	-	-	-	-	439	446	-	426	457	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1012	-	-	909	-	-	116	138	466	91	142	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	138	-	91	142	-
Stage 1	-	-	-	-	-	-	451	459	-	449	422	-
Stage 2	-	-	-	-	-	-	394	411	-	339	456	-

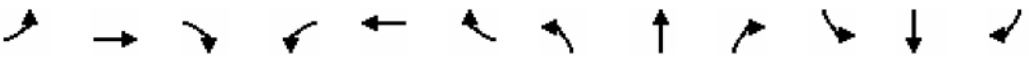
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	24.6	32.7
HCM LOS			C	D

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	294	1012	-	-	909	-	-	91	282
HCM Lane V/C Ratio	0.381	0.003	-	-	0.079	-	-	0.119	0.046
HCM Control Delay (s)	24.6	8.6	-	-	9.3	-	-	49.9	18.4
HCM Lane LOS	C	A	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.3	-	-	0.4	0.1

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	713	3	22	550	39	7	1	63	145	0	18
Future Volume (vph)	10	713	3	22	550	39	7	1	63	145	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		80.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	40.0			40.0			0.0			20.0		
Lane Util. 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
Frt		0.999			0.990			0.881			0.850	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1722	1811	0	1772	1847	0	0	1589	0	1789	1601	0
Flt Permitted	0.344			0.255				0.971		0.707		
Satd. Flow (perm)	623	1811	0	476	1847	0	0	1550	0	1332	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6			68			214	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	11	775	3	24	598	42	8	1	68	158	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	778	0	24	640	0	0	77	0	158	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (s)	42.0	42.0		42.0	42.0		33.0	33.0		33.0	33.0	
Total Split (%)	56.0%	56.0%		56.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	4	4		4	4		4	4		4	4	
Act Effct Green (s)	41.2	41.2		41.2	41.2			14.4		14.4	14.4	
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.23		0.23	0.23	
v/c Ratio	0.03	0.66		0.08	0.53			0.19		0.52	0.04	
Control Delay	8.5	15.1		9.2	11.5			7.3		27.0	0.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	8.5	15.1		9.2	11.5			7.3		27.0	0.1	
LOS	A	B		A	B			A		C	A	
Approach Delay		15.0			11.4			7.3			24.0	
Approach LOS		B			B			A			C	
Queue Length 50th (m)	0.4	52.5		1.0	37.3			0.8		15.9	0.0	
Queue Length 95th (m)	3.3	#165.4		5.9	105.4			8.6		30.2	0.0	
Internal Link Dist (m)		260.5			183.5			176.7			107.4	
Turn Bay Length (m)	80.0			80.0						60.0		
Base Capacity (vph)	408	1186		311	1212			711		578	816	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.03	0.66		0.08	0.53			0.11		0.27	0.02	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 62.8												
Natural Cycle: 75												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.66												
Intersection Signal Delay: 14.2						Intersection LOS: B						
Intersection Capacity Utilization 62.4%						ICU Level of Service B						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Queue shown is maximum after two cycles.

Splits and Phases: 2: 50 Ave & 52 St



Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-08-2025

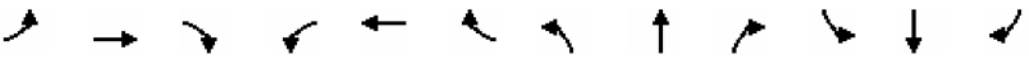
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	974	1	15	619	2	20
Future Volume (vph)	974	1	15	619	2	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	60.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			20.0		0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt					0.876	
Flt Protected				0.999	0.996	
Satd. Flow (prot)	1830	0	0	3575	1643	0
Flt Permitted				0.999	0.996	
Satd. Flow (perm)	1830	0	0	3575	1643	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	1059	1	16	673	2	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1060	0	0	689	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	61.3%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	974	1	15	619	2	20
Future Vol, veh/h	974	1	15	619	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	1059	1	16	673	2	22
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1060	0	1429	1060
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	655	-	137	271
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	655	-	132	271
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	644	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		21.1	
HCM LOS					C	
Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	247	-	-	655	-	
HCM Lane V/C Ratio	0.097	-	-	0.025	-	
HCM Control Delay (s)	21.1	-	-	10.6	0.2	
HCM Lane LOS	C	-	-	B	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

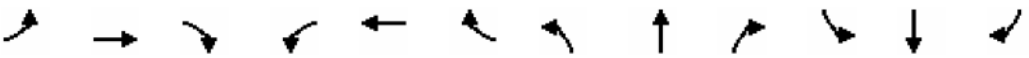
08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	935	97	155	560	73	48	42	101	70	31	28
Future Volume (vph)	43	935	97	155	560	73	48	42	101	70	31	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		40.0	30.0		30.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	30.0			30.0			20.0			20.0		
Lane Util. 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
Frt			0.850		0.983			0.894			0.930	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1795	1526	1722	1782	0	1789	1684	0	1789	1752	0
Flt Permitted	0.403			0.076			0.715			0.553		
Satd. Flow (perm)	724	1795	1526	138	1782	0	1347	1684	0	1042	1752	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		21			108			30	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			118.8			769.4			203.6	
Travel Time (s)		14.6			8.6			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1016	105	168	609	79	52	46	110	76	34	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1016	105	168	688	0	52	156	0	76	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	L NA	Right	L NA	Left	Right	Left	Left	R NA
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3	2.0	6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6	2.0	6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0	21.0	21.0	13.0	21.0		16.0	16.0		16.0	16.0	
Total Split (s)	61.0	61.0	61.0	13.0	74.0		16.0	16.0		16.0	16.0	
Total Split (%)	67.8%	67.8%	67.8%	14.4%	82.2%		17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	55.0	55.0	55.0	7.0	68.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	55.0	55.0	55.0	68.0	68.0		10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.76	0.76		0.11	0.11		0.11	0.11	
v/c Ratio	0.11	0.93	0.11	0.74	0.51		0.35	0.55		0.66	0.29	
Control Delay	8.1	31.8	1.7	38.5	4.8		44.1	21.9		66.8	26.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.1	31.8	1.7	38.5	4.8		44.1	21.9		66.8	26.5	
LOS	A	C	A	D	A		D	C		E	C	
Approach Delay		28.1			11.4			27.5			48.4	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	3.1	143.6	0.0	15.7	31.7		8.5	7.7		12.8	5.4	
Queue Length 95th (m)	7.6	#241.5	5.3	#42.9	38.7		19.5	25.8		#33.5	16.9	
Internal Link Dist (m)		178.7			94.8			745.4			179.6	
Turn Bay Length (m)	30.0		40.0	30.0			60.0			60.0		
Base Capacity (vph)	442	1096	974	227	1351		149	283		115	221	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.93	0.11	0.74	0.51		0.35	0.55		0.66	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 23.2

Intersection LOS: C

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1103	1	9	790	13	1	0	16	8	0	2
Future Volume (vph)	3	1103	1	9	790	13	1	0	16	8	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	60.0		0.0	60.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	30.0			20.0			0.0			0.0		
Lane Util. 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
Frt					0.998			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1812	0	1772	1861	0	1789	1601	0	1547	1384	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1722	1812	0	1772	1861	0	1789	1601	0	1547	1384	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		118.8			207.1			220.5			141.2	
Travel Time (s)		8.6			14.9			26.5			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	3	1199	1	10	859	14	1	0	17	9	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1200	0	10	873	0	1	17	0	9	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	71.4%						ICU Level of Service C					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1103	1	9	790	13	1	0	16	8	0	2
Future Vol, veh/h	3	1103	1	9	790	13	1	0	16	8	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	60	-	-	60	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	3	1199	1	10	859	14	1	0	17	9	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	873	0	0	1200	0	0	2093	2099	1200	2100	2092	866
Stage 1	-	-	-	-	-	-	1206	1206	-	886	886	-
Stage 2	-	-	-	-	-	-	887	893	-	1214	1206	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	756	-	-	578	-	-	38	52	226	34	47	330
Stage 1	-	-	-	-	-	-	224	257	-	318	342	-
Stage 2	-	-	-	-	-	-	339	360	-	206	239	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	756	-	-	578	-	-	37	51	226	31	46	330
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	51	-	31	46	-
Stage 1	-	-	-	-	-	-	223	256	-	317	336	-
Stage 2	-	-	-	-	-	-	331	354	-	189	238	-

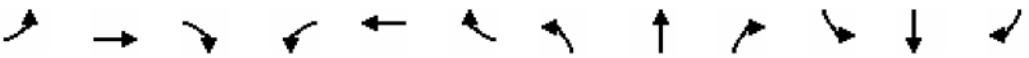
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			27.2			132.3		
HCM LOS							D			F		

Minor Lane/Major Mvm	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	37	226	756	-	-	578	-	-	31	330
HCM Lane V/C Ratio	0.029	0.077	0.004	-	-	0.017	-	-	0.281	0.007
HCM Control Delay (s)	105.2	22.3	9.8	-	-	11.3	-	-	161.4	16
HCM Lane LOS	F	C	A	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	0.1	0.2	0	-	-	0.1	-	-	0.9	0

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	889	115	96	708	43	35	4	58	19	5	61
Future Volume (vph)	77	889	115	96	708	43	35	4	58	19	5	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		90.0	100.0		100.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			40.0			40.0		
Lane Util. 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
Frt		0.983				0.850		0.859			0.861	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1765	0	1690	1779	1512	1772	1602	0	1789	1622	0
Flt Permitted	0.374			0.068			0.711			0.713		
Satd. Flow (perm)	671	1765	0	121	1779	1512	1326	1602	0	1343	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				47		63			66	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		207.1			242.5			91.1			93.6	
Travel Time (s)		14.9			17.5			10.9			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	84	966	125	104	770	47	38	4	63	21	5	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1091	0	104	770	47	38	67	0	21	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3	2.0	6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6	2.0	6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	21.0	21.0		13.0	21.0	21.0	16.0	16.0		16.0	16.0	
Total Split (s)	61.0	61.0		13.0	74.0	74.0	16.0	16.0		16.0	16.0	
Total Split (%)	67.8%	67.8%		14.4%	82.2%	82.2%	17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	55.0	55.0		7.0	68.0	68.0	10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	62.0	62.0		71.2	72.4	72.4	10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.69	0.69		0.79	0.80	0.80	0.11	0.11		0.11	0.11	
v/c Ratio	0.18	0.89		0.48	0.54	0.04	0.26	0.29		0.14	0.30	
Control Delay	10.6	21.2		16.3	5.9	1.0	41.5	14.6		38.7	14.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.6	21.2		16.3	5.9	1.0	41.5	14.6		38.7	14.7	
LOS	B	C		B	A	A	D	B		D	B	
Approach Delay		20.5			6.8			24.4			20.2	
Approach LOS		C			A			C			C	
Queue Length 50th (m)	6.6	~95.5		3.7	45.9	0.0	6.1	0.6		3.3	0.8	
Queue Length 95th (m)	m8.6#234.6			17.1	69.5	2.1	15.5	12.1		10.2	12.6	
Internal Link Dist (m)		183.1			218.5			67.1			69.6	
Turn Bay Length (m)	90.0			100.0		100.0	40.0			40.0		
Base Capacity (vph)	462	1219		217	1431	1225	147	234		149	238	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.18	0.89		0.48	0.54	0.04	0.26	0.29		0.14	0.30	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 15.2

Intersection LOS: B

Intersection Capacity Utilization 83.2%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: 47 St & 50 Ave



Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	872	59	78	715	54	78	5	132	88	5	42
Future Volume (vph)	69	872	59	78	715	54	78	5	132	88	5	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		80.0	120.0		120.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			80.0			7.5			20.0		
Lane Util. 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
Frt		0.991				0.850		0.855			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1813	0	1738	1865	1585	1738	1564	0	1789	1624	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1738	1813	0	1738	1865	1585	1738	1564	0	1789	1624	0
Link Speed (k/h)		70			70			50			30	
Link Distance (m)		261.0			799.2			123.2			154.5	
Travel Time (s)		13.4			41.1			8.9			18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%	5%	5%	5%	2%	5%	2%
Adj. Flow (vph)	75	948	64	85	777	59	85	5	143	96	5	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	1012	0	85	777	59	85	148	0	96	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.8			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		100	100		20	100		100	25		20
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization	80.4%						ICU Level of Service D					
Analysis Period (min)	15											

Lanes, Volumes, Timings

8: Range Road 265

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1193	1	5	847	1	1	0	10	1	0	1
Future Volume (vph)	1	1193	1	5	847	1	1	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		100.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.876			0.932	
Flt Protected				0.950				0.996			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Flt Permitted				0.950				0.996			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1596	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1297	1	5	921	1	1	0	11	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1298	1	5	922	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	73.6%				ICU Level of Service D							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱			↰			↰	↱
Traffic Vol, veh/h	1	1193	1	5	847	1	1	0	10	1	0	1
Future Vol, veh/h	1	1193	1	5	847	1	1	0	10	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	1297	1	5	921	1	1	0	11	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	922	0	0	1298	0	0	2231	2231	1297	2237	2232	922
Stage 1	-	-	-	-	-	-	1299	1299	-	932	932	-
Stage 2	-	-	-	-	-	-	932	932	-	1305	1300	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	728	-	-	524	-	-	30	42	195	30	42	323
Stage 1	-	-	-	-	-	-	196	228	-	316	341	-
Stage 2	-	-	-	-	-	-	316	341	-	194	228	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	728	-	-	524	-	-	30	41	195	28	41	323
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	41	-	28	41	-
Stage 1	-	-	-	-	-	-	195	227	-	314	338	-
Stage 2	-	-	-	-	-	-	312	338	-	182	227	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			35.5			77.2		
HCM LOS							E			F		

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	130	728	-	-	524	-	-	52
HCM Lane V/C Ratio	0.092	0.001	-	-	0.01	-	-	0.042
HCM Control Delay (s)	35.5	10	0	-	11.9	-	-	77.2
HCM Lane LOS	E	A	A	-	B	-	-	F
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	3	1	6	2	23	0	119	12	53	141	7
Future Volume (vph)	5	3	1	6	2	23	0	119	12	53	141	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.985			0.901			0.988			0.995	
Flt Protected		0.973			0.990						0.987	
Satd. Flow (prot)	0	1705	0	0	1664	0	0	1791	0	0	1655	0
Flt Permitted		0.973			0.990						0.987	
Satd. Flow (perm)	0	1705	0	0	1664	0	0	1791	0	0	1655	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	5	3	1	7	2	25	0	129	13	58	153	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	34	0	0	142	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	36.6%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	8.5											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	1	6	2	23	0	119	12	53	141	7
Future Vol, veh/h	5	3	1	6	2	23	0	119	12	53	141	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	5	3	1	7	2	25	0	129	13	58	153	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.6	8.1	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	19%	26%
Vol Thru, %	91%	33%	6%	70%
Vol Right, %	9%	11%	74%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	9	31	201
LT Vol	0	5	6	53
Through Vol	119	3	2	141
RT Vol	12	1	23	7
Lane Flow Rate	142	10	34	218
Geometry Grp	1	1	1	1
Degree of Util (X)	0.166	0.013	0.041	0.264
Departure Headway (Hd)	4.188	4.936	4.368	4.354
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	843	729	825	817
Service Time	2.279	2.938	2.368	2.418
HCM Lane V/C Ratio	0.168	0.014	0.041	0.267
HCM Control Delay	8.1	8	7.6	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0	0.1	1.1

Lanes, Volumes, Timings

10: 50 St & 44 Ave

08-08-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	1	1	2	31	5	221	3	29	181	24
Future Volume (vph)	12	1	1	1	2	31	5	221	3	29	181	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.991			0.876			0.998			0.986	
Flt Protected		0.958			0.999			0.999			0.994	
Satd. Flow (prot)	0	1737	0	0	1601	0	0	1824	0	0	1793	0
Flt Permitted		0.958			0.999			0.999			0.994	
Satd. Flow (perm)	0	1737	0	0	1601	0	0	1824	0	0	1793	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		178.6			201.7			371.2			769.4	
Travel Time (s)		12.9			14.5			26.7			55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	1	1	1	2	34	5	240	3	32	197	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	37	0	0	248	0	0	255	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 40.5% ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	1	1	1	2	31	5	221	3	29	181	24
Future Vol, veh/h	12	1	1	1	2	31	5	221	3	29	181	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage,#	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	13	1	1	1	2	34	5	240	3	32	197	26
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	544	527	210	527	539	242	223	0	0	243	0	0
Stage 1	274	274	-	252	252	-	-	-	-	-	-	-
Stage 2	270	253	-	275	287	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	445	452	823	457	445	790	1328	-	-	1306	-	-
Stage 1	726	678	-	746	693	-	-	-	-	-	-	-
Stage 2	729	692	-	725	669	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	414	438	823	445	431	790	1328	-	-	1306	-	-
Mov Cap-2 Maneuver	414	438	-	445	431	-	-	-	-	-	-	-
Stage 1	723	659	-	743	690	-	-	-	-	-	-	-
Stage 2	693	689	-	703	650	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.7		10.1		0.2		1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1328	-	-	431	737	1306	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.035	0.05	0.024	-	-				
HCM Control Delay (s)	7.7	0	-	13.7	10.1	7.8	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	6	7	214	162	75
Future Volume (vph)	53	6	7	214	162	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.957	
Flt Protected	0.957			0.998		
Satd. Flow (prot)	1725	0	0	1826	1751	0
Flt Permitted	0.957			0.998		
Satd. Flow (perm)	1725	0	0	1826	1751	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	7	8	233	176	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	0	241	258	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 53 6 7 214 162 75

Future Vol, veh/h 53 6 7 214 162 75

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage 0# - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 58 7 8 233 176 82

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 466 217 258 0 - 0

Stage 1 217 - - - - -

Stage 2 249 - - - - -

Critical Hdwy 6.45 6.25 4.15 - - -

Critical Hdwy Stg 1 5.45 - - - - -

Critical Hdwy Stg 2 5.45 - - - - -

Follow-up Hdwy 3.545 3.345 2.245 - - -

Pot Cap-1 Maneuve 549 815 1289 - - -

Stage 1 812 - - - - -

Stage 2 785 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuve 545 815 1289 - - -

Mov Cap-2 Maneuve 545 - - - - -

Stage 1 806 - - - - -

Stage 2 785 - - - - -

Approach EB NB SB

HCM Control Delay, s 12.2 0.2 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1289 - 564 - -

HCM Lane V/C Ratio 0.006 - 0.114 - -

HCM Control Delay (s) 7.8 0 12.2 - -

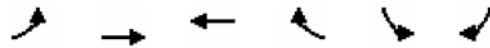
HCM Lane LOS A A B - -

HCM 95th %tile Q(veh) 0 - 0.4 - -

Lanes, Volumes, Timings

12: 50 Ave

08-08-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗		↗
Traffic Volume (vph)	0	922	825	25	0	22
Future Volume (vph)	0	922	825	25	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0			60.0	40.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	40.0				20.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	1830	1830	1555	0	1583
Flt Permitted						
Satd. Flow (perm)	0	1830	1830	1555	0	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		242.5	261.0		127.0	
Travel Time (s)		17.5	18.8		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1002	897	27	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1002	897	27	0	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations    

Traffic Vol, veh/h 0 922 825 25 0 22

Future Vol, veh/h 0 922 825 25 0 22

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - 60 - 0

Veh in Median Storage, # 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 0 1002 897 27 0 24

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 - 897

Stage 1 - - - - -

Stage 2 - - - - -

Critical Hdwy - - - - - 6.25

Critical Hdwy Stg 1 - - - - -

Critical Hdwy Stg 2 - - - - -

Follow-up Hdwy - - - - - 3.345

Pot Cap-1 Maneuver 0 - - - 0 334

Stage 1 0 - - - 0 -

Stage 2 0 - - - 0 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - - 334

Mov Cap-2 Maneuver - - - - -

Stage 1 - - - - -

Stage 2 - - - - -

Approach EB WB SB

HCM Control Delay, s 0 0 16.6

HCM LOS C

Minor Lane/Major Mvmt EBT WBT WBR SBLn1

Capacity (veh/h) - - - 334

HCM Lane V/C Ratio - - - 0.072

HCM Control Delay (s) - - - 16.6

HCM Lane LOS - - - C

HCM 95th %tile Q(veh) - - - 0.2

Lanes, Volumes, Timings

1: 50 Ave & Westview Dr

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	496	30	120	668	60	26	6	81	17	4	6
Future Volume (vph)	7	496	30	120	668	60	26	6	81	17	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	120.0		50.0	0.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	0.0			80.0			0.0			20.0		
Lane Util. 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
Frt		0.991				0.850		0.903			0.905	
Flt Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1755	1831	0	1722	1812	1541	0	1682	0	1789	1705	0
Flt Permitted	0.950			0.950				0.989		0.950		
Satd. Flow (perm)	1755	1831	0	1722	1812	1541	0	1682	0	1789	1705	0
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		104.1			104.2			141.1			182.8	
Travel Time (s)		7.5			7.5			16.9			21.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	8	539	33	130	726	65	28	7	88	18	4	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	572	0	130	726	65	0	123	0	18	11	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.9%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	496	30	120	668	60	26	6	81	17	4	6
Future Vol, veh/h	7	496	30	120	668	60	26	6	81	17	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	120	-	50	-	-	-	20	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	2	2	2
Mvmt Flow	8	539	33	130	726	65	28	7	88	18	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	791	0	0	572	0	0	1596	1623	556	1605	1574	726
Stage 1	-	-	-	-	-	-	572	572	-	986	986	-
Stage 2	-	-	-	-	-	-	1024	1051	-	619	588	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	821	-	-	981	-	-	86	103	531	85	110	425
Stage 1	-	-	-	-	-	-	505	504	-	298	326	-
Stage 2	-	-	-	-	-	-	284	304	-	476	496	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	821	-	-	981	-	-	73	88	531	60	94	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	88	-	60	94	-
Stage 1	-	-	-	-	-	-	500	499	-	295	283	-
Stage 2	-	-	-	-	-	-	239	264	-	388	491	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.1		1.3		50		66.4	
HCM LOS					F		F	

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	196	821	-	-	981	-	-	60	176
HCM Lane V/C Ratio	0.627	0.009	-	-	0.133	-	-	0.308	0.062
HCM Control Delay (s)	50	9.4	-	-	9.2	-	-	89.7	26.8
HCM Lane LOS	F	A	-	-	A	-	-	F	D
HCM 95th %tile Q(veh)	3.6	0	-	-	0.5	-	-	1.1	0.2

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	571	6	59	840	115	5	1	31	55	5	13
Future Volume (vph)	18	571	6	59	840	115	5	1	31	55	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		80.0	0.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (m)	40.0			40.0			0.0			20.0		
Lane Util. 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
Frt		0.998			0.982			0.885			0.889	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1722	1809	0	1772	1832	0	0	1594	0	1789	1674	0
Flt Permitted	0.166			0.381				0.964		0.731		
Satd. Flow (perm)	301	1809	0	711	1832	0	0	1546	0	1377	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13			34			14	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		284.5			207.5			200.7			131.4	
Travel Time (s)		20.5			14.9			24.1			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	20	621	7	64	913	125	5	1	34	60	5	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	628	0	64	1038	0	0	40	0	60	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings

2: 50 Ave & 52 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (s)	57.0	57.0		57.0	57.0		33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.0	51.0		51.0	51.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	4	4		4	4		4	4		4	4	
Act Effct Green (s)	60.0	60.0		60.0	60.0			13.1		13.1	13.1	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16		0.16	0.16	
v/c Ratio	0.09	0.46		0.12	0.76			0.14		0.27	0.07	
Control Delay	7.6	8.2		6.7	15.1			11.8		31.1	15.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	7.6	8.2		6.7	15.1			11.8		31.1	15.0	
LOS	A	A		A	B			B		C	B	
Approach Delay		8.2			14.7			11.8			27.3	
Approach LOS		A			B			B			C	
Queue Length 50th (m)	0.7	32.5		2.4	79.7			0.8		8.3	0.7	
Queue Length 95th (m)	5.2	99.8		11.3	#260.0			7.7		16.9	5.4	
Internal Link Dist (m)		260.5			183.5			176.7			107.4	
Turn Bay Length (m)	80.0			80.0						60.0		
Base Capacity (vph)	224	1352		531	1372			546		466	576	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.09	0.46		0.12	0.76			0.07		0.13	0.03	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 80.3												
Natural Cycle: 90												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.76												
Intersection Signal Delay: 12.9						Intersection LOS: B						
Intersection Capacity Utilization 70.9%						ICU Level of Service C						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Queue shown is maximum after two cycles.

Splits and Phases: 2: 50 Ave & 52 St



Lanes, Volumes, Timings

3: 51 St & 50 Ave

08-10-2025

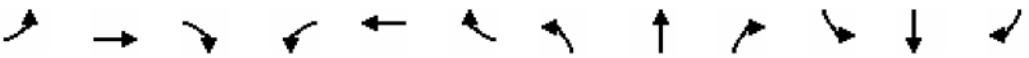
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↰↰	↰↰	
Traffic Volume (vph)	679	2	24	1099	4	18
Future Volume (vph)	679	2	24	1099	4	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	60.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			20.0		0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt					0.887	
Flt Protected				0.999	0.992	
Satd. Flow (prot)	1830	0	0	3575	1657	0
Flt Permitted				0.999	0.992	
Satd. Flow (perm)	1830	0	0	3575	1657	0
Link Speed (k/h)	50			50	30	
Link Distance (m)	207.5			202.7	246.9	
Travel Time (s)	14.9			14.6	29.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	738	2	26	1195	4	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	740	0	0	1221	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		20	25		25	20
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	57.5%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	679	2	24	1099	4	18
Future Vol, veh/h	679	2	24	1099	4	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	738	2	26	1195	4	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	740	0	1389	739
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	650	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	864	-	145	416
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	864	-	132	416
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	439	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.6		18.1		
HCM LOS	C					
Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	299	-	-	864	-	
HCM Lane V/C Ratio	0.08	-	-	0.03	-	
HCM Control Delay (s)	18.1	-	-	9.3	0.4	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	582	97	169	949	55	136	26	143	56	13	32
Future Volume (vph)	44	582	97	169	949	55	136	26	143	56	13	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		40.0	30.0		30.0	60.0		0.0	60.0		0.0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (m)	30.0			30.0			20.0			20.0		
Lane Util. 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
Frt			0.850		0.992			0.873			0.893	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1795	1526	1722	1798	0	1789	1644	0	1789	1682	0
Flt Permitted	0.077			0.285			0.725			0.483		
Satd. Flow (perm)	138	1795	1526	517	1798	0	1365	1644	0	910	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		6			155			35	
Link Speed (k/h)		50			50			50			30	
Link Distance (m)		202.7			118.8			769.4			203.6	
Travel Time (s)		14.6			8.6			55.4			24.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	48	633	105	184	1032	60	148	28	155	61	14	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	633	105	184	1092	0	148	183	0	61	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	L NA	Right	L NA	Left	Right	Left	Left	R NA
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3	2.0	6.1	29.3		6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6	2.0	6.1	0.6		6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings

4: 50 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	21.0	21.0	13.0	21.0		16.0	16.0		16.0	16.0	
Total Split (s)	13.0	57.0	57.0	15.0	59.0		18.0	18.0		18.0	18.0	
Total Split (%)	14.4%	63.3%	63.3%	16.7%	65.6%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	7.0	51.0	51.0	9.0	53.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	59.2	52.2	52.2	63.8	58.6		11.6	11.6		11.6	11.6	
Actuated g/C Ratio	0.66	0.58	0.58	0.71	0.65		0.13	0.13		0.13	0.13	
v/c Ratio	0.23	0.61	0.11	0.39	0.93		0.84	0.53		0.52	0.20	
Control Delay	6.7	15.7	2.1	6.1	32.2		76.1	15.1		53.3	18.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	15.7	2.1	6.1	32.2		76.1	15.1		53.3	18.6	
LOS	A	B	A	A	C		E	B		D	B	
Approach Delay		13.3			28.4			42.4			37.9	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	1.9	66.8	0.0	7.8	~203.7		25.2	4.3		10.0	2.2	
Queue Length 95th (m)	4.4	102.0	6.1	13.5	#278.1		#57.0	23.0		#24.5	11.9	
Internal Link Dist (m)		178.7			94.8			745.4			179.6	
Turn Bay Length (m)	30.0		40.0	30.0			60.0			60.0		
Base Capacity (vph)	212	1041	930	487	1172		182	353		121	254	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.61	0.11	0.38	0.93		0.81	0.52		0.50	0.19	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 26.0

Intersection LOS: C

Intersection Capacity Utilization 97.6%

ICU Level of Service F

Analysis Period (min) 15

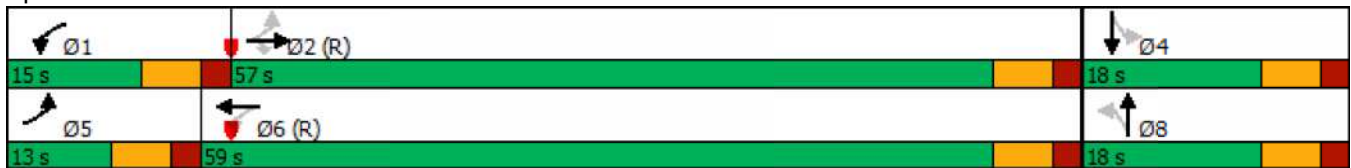
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: 50 St & 50 Ave



Lanes, Volumes, Timings

5: 50 Ave & 49 St

08-10-2025

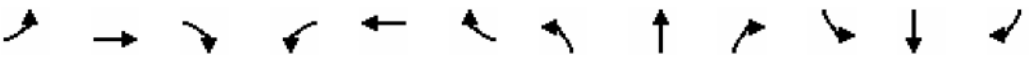
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	767	3	3	1221	12	10	1	15	12	0	12
Future Volume (vph)	9	767	3	3	1221	12	10	1	15	12	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	60.0		0.0	60.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	30.0			20.0			0.0			0.0		
Lane Util. 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
Frt		0.999			0.999			0.859			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	1811	0	1772	1863	0	1789	1618	0	1547	1384	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1722	1811	0	1772	1863	0	1789	1618	0	1547	1384	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		118.8			207.1			220.5			141.2	
Travel Time (s)		8.6			14.9			26.5			10.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	3%	3%	3%	2%	2%	2%	18%	18%	18%
Adj. Flow (vph)	10	834	3	3	1327	13	11	1	16	13	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	837	0	3	1340	0	11	17	0	13	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	79.0%						ICU Level of Service D					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	9	767	3	3	1221	12	10	1	15	12	0	12
Future Vol, veh/h	9	767	3	3	1221	12	10	1	15	12	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	30	-	-	60	-	-	60	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	2	2	2	18	18	18
Mvmt Flow	10	834	3	3	1327	13	11	1	16	13	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1340	0	0	837	0	0	2202	2202	836	2204	2197	1334
Stage 1	-	-	-	-	-	-	856	856	-	1340	1340	-
Stage 2	-	-	-	-	-	-	1346	1346	-	864	857	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.12	6.52	6.22	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.28	5.68	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.518	4.018	3.318	3.662	4.162	3.462
Pot Cap-1 Maneuver	502	-	-	793	-	-	32	45	367	29	40	174
Stage 1	-	-	-	-	-	-	352	374	-	174	205	-
Stage 2	-	-	-	-	-	-	187	220	-	327	353	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	502	-	-	793	-	-	29	44	367	27	39	174
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	44	-	27	39	-
Stage 1	-	-	-	-	-	-	345	367	-	171	204	-
Stage 2	-	-	-	-	-	-	172	219	-	305	346	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			85.7			127.8		
HCM LOS							F			F		
Minor Lane/Major Mvm	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	29	252	502	-	-	793	-	-	27	174		
HCM Lane V/C Ratio	0.375	0.069	0.019	-	-	0.004	-	-	0.483	0.075		
HCM Control Delay (s)	190.3	20.3	12.3	-	-	9.6	-	-	228.2	27.4		
HCM Lane LOS	F	C	B	-	-	A	-	-	F	D		
HCM 95th %tile Q(veh)	1.2	0.2	0.1	-	-	0	-	-	1.5	0.2		

Lanes, Volumes, Timings

6: 47 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	670	92	64	1088	87	57	6	67	36	8	74
Future Volume (vph)	64	670	92	64	1088	87	57	6	67	36	8	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		90.0	100.0		100.0	40.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			40.0			40.0			40.0		
Lane Util. 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
Frt		0.981				0.850		0.863			0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	1761	0	1690	1779	1512	1772	1610	0	1789	1629	0
Flt Permitted	0.073			0.258			0.699			0.705		
Satd. Flow (perm)	131	1761	0	459	1779	1512	1304	1610	0	1328	1629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				98		73			80	
Link Speed (k/h)		50			50			30			30	
Link Distance (m)		207.1			242.5			91.1			93.6	
Travel Time (s)		14.9			17.5			10.9			11.2	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	70	705	100	70	1145	95	62	7	73	39	9	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	805	0	70	1145	95	62	80	0	39	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	29.3		6.1	29.3	2.0	6.1	29.3		6.1	29.3	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	0.6		6.1	0.6	2.0	6.1	0.6		6.1	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	

Lanes, Volumes, Timings
6: 47 St & 50 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0	15.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	21.0		13.0	21.0	21.0	16.0	16.0		16.0	16.0	
Total Split (s)	13.0	71.0		13.0	71.0	71.0	16.0	16.0		16.0	16.0	
Total Split (%)	13.0%	71.0%		13.0%	71.0%	71.0%	16.0%	16.0%		16.0%	16.0%	
Maximum Green (s)	7.0	65.0		7.0	65.0	65.0	10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None		None	None	
Act Effct Green (s)	71.5	67.8		71.5	67.8	67.8	10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.76	0.72		0.76	0.72	0.72	0.11	0.11		0.11	0.11	
v/c Ratio	0.32	0.63		0.16	0.89	0.09	0.44	0.33		0.27	0.36	
Control Delay	9.2	12.8		3.6	26.8	1.5	53.2	16.5		47.2	16.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.2	12.8		3.6	26.8	1.5	53.2	16.5		47.2	16.8	
LOS	A	B		A	C	A	D	B		D	B	
Approach Delay		12.5			23.7			32.6			26.0	
Approach LOS		B			C			C			C	
Queue Length 50th (m)	2.5	88.9		2.5	197.1	0.0	11.6	1.2		7.1	1.6	
Queue Length 95th (m)	8.0	132.0		5.1	#305.3	4.8	24.8	14.6		17.4	15.7	
Internal Link Dist (m)		183.1			218.5			67.1			69.6	
Turn Bay Length (m)	90.0			100.0		100.0	40.0			40.0		
Base Capacity (vph)	218	1271		441	1281	1116	141	239		143	247	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.63		0.16	0.89	0.09	0.44	0.33		0.27	0.36	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 94.2

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 20.3

Intersection LOS: C

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: 47 St & 50 Ave

 Ø1 13 s	 Ø2 71 s	 Ø4 16 s
 Ø5 13 s	 Ø6 71 s	 Ø8 16 s

Lanes, Volumes, Timings

7: 50 Ave & 45 St

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	837	57	152	1124	120	167	55	298	168	5	93
Future Volume (vph)	95	837	57	152	1124	120	167	55	298	168	5	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		80.0	120.0		120.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	40.0			80.0			7.5			20.0		
Lane Util. 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
Frt		0.990				0.850		0.873			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1811	0	1738	1865	1585	1738	1597	0	1789	1612	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1738	1811	0	1738	1865	1585	1738	1597	0	1789	1612	0
Link Speed (k/h)		70			70			50			30	
Link Distance (m)		261.0			799.2			123.2			154.5	
Travel Time (s)		13.4			41.1			8.9			18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%	5%	5%	5%	2%	5%	2%
Adj. Flow (vph)	103	910	62	165	1222	130	182	60	324	183	5	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	972	0	165	1222	130	182	384	0	183	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.8			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		100	100		20	100		100	25		20
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization	108.3%				ICU Level of Service G							
Analysis Period (min)	15											

Lanes, Volumes, Timings

8: Range Road 265

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1148	4	1	1206	1	7	0	4	1	0	1
Future Volume (vph)	1	1148	4	1	1206	1	7	0	4	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	120.0		100.0	100.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. 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
Frt			0.850					0.955			0.932	
Flt Protected				0.950				0.968			0.976	
Satd. Flow (prot)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Flt Permitted				0.950				0.968			0.976	
Satd. Flow (perm)	0	1830	1555	1738	1830	0	0	1691	0	0	1664	0
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		799.2			195.2			309.9			283.7	
Travel Time (s)		41.1			10.0			22.3			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1248	4	1	1311	1	8	0	4	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1249	4	1	1312	0	0	12	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	80.2%				ICU Level of Service D							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔		↔			↔	
Traffic Vol, veh/h	1	1148	4	1	1206	1	7	0	4	1	0	1
Future Vol, veh/h	1	1148	4	1	1206	1	7	0	4	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	1248	4	1	1311	1	8	0	4	1	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1312	0	0	1252	0	0	2564	2564	1248	2568	2568	1312
Stage 1	-	-	-	-	-	-	1250	1250	-	1314	1314	-
Stage 2	-	-	-	-	-	-	1314	1314	-	1254	1254	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	517	-	-	546	-	-	17	26	208	17	25	191
Stage 1	-	-	-	-	-	-	209	241	-	192	225	-
Stage 2	-	-	-	-	-	-	192	225	-	208	240	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	517	-	-	546	-	-	17	26	208	17	25	191
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	26	-	17	25	-
Stage 1	-	-	-	-	-	-	208	240	-	191	225	-
Stage 2	-	-	-	-	-	-	191	225	-	202	239	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			230.3			129.7		
HCM LOS							F			F		
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	26	517	-	-	546	-	-	31				
HCM Lane V/C Ratio	0.46	0.002	-	-	0.002	-	-	0.07				
HCM Control Delay (s)	230.3	12	0	-	11.6	-	-	129.7				
HCM Lane LOS	F	B	A	-	B	-	-	F				
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.2				

Lanes, Volumes, Timings

9: 50 St & 51 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2	4	10	4	29	1	156	11	28	114	6
Future Volume (vph)	8	2	4	10	4	29	1	156	11	28	114	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Ped Bike Factor												
Frt		0.964			0.908			0.991			0.994	
Flt Protected		0.971			0.988						0.991	
Satd. Flow (prot)	0	1665	0	0	1673	0	0	1796	0	0	1660	0
Flt Permitted		0.971			0.988						0.991	
Satd. Flow (perm)	0	1665	0	0	1673	0	0	1796	0	0	1660	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		62.8			83.6			203.6			51.8	
Travel Time (s)		4.5			6.0			24.4			3.7	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	6%	6%	6%	14%	14%	14%
Adj. Flow (vph)	9	2	4	11	4	32	1	170	12	30	124	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	47	0	0	183	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25		20	25		20	25		20	25		20
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.9%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	8.4											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	4	10	4	29	1	156	11	28	114	6
Future Vol, veh/h	8	2	4	10	4	29	1	156	11	28	114	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	8	8	8	3	3	3	6	6	6	14	14	14
Mvmt Flow	9	2	4	11	4	32	1	170	12	30	124	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.7	8.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	57%	23%	19%
Vol Thru, %	93%	14%	9%	77%
Vol Right, %	7%	29%	67%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	168	14	43	148
LT Vol	1	8	10	28
Through Vol	156	2	4	114
RT Vol	11	4	29	6
Lane Flow Rate	183	15	47	161
Geometry Grp	1	1	1	1
Degree of Util (X)	0.213	0.02	0.057	0.197
Departure Headway (Hd)	4.196	4.811	4.385	4.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	748	822	804
Service Time	2.285	2.814	2.386	2.487
HCM Lane V/C Ratio	0.217	0.02	0.057	0.2
HCM Control Delay	8.4	7.9	7.7	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0.2	0.7

Lanes, Volumes, Timings

10: 50 St & 44 Ave

08-10-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1	3	5	2	57	1	262	1	17	219	10
Future Volume (vph)	15	1	3	5	2	57	1	262	1	17	219	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.980			0.879						0.994	
Flt Protected		0.962			0.996						0.997	
Satd. Flow (prot)	0	1725	0	0	1602	0	0	1830	0	0	1813	0
Flt Permitted		0.962			0.996						0.997	
Satd. Flow (perm)	0	1725	0	0	1602	0	0	1830	0	0	1813	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		178.6			201.7			371.2			769.4	
Travel Time (s)		12.9			14.5			26.7			55.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1	3	5	2	62	1	285	1	18	238	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	69	0	0	287	0	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100		100	100		100	100		100	100		100
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 37.5% ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	1	3	5	2	57	1	262	1	17	219	10
Future Vol, veh/h	15	1	3	5	2	57	1	262	1	17	219	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	16	1	3	5	2	62	1	285	1	18	238	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	600	568	244	570	573	286	249	0	0	286	0	0
Stage 1	280	280	-	288	288	-	-	-	-	-	-	-
Stage 2	320	288	-	282	285	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	408	428	787	428	426	746	1299	-	-	1259	-	-
Stage 1	720	674	-	713	668	-	-	-	-	-	-	-
Stage 2	685	668	-	718	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	368	420	787	419	418	746	1299	-	-	1259	-	-
Mov Cap-2 Maneuver	368	420	-	419	418	-	-	-	-	-	-	-
Stage 1	719	663	-	712	667	-	-	-	-	-	-	-
Stage 2	625	667	-	702	659	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.4		10.8		0		0.5	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	405	687	1259	-	-
HCM Lane V/C Ratio	0.001	-	-	0.051	0.101	0.015	-	-
HCM Control Delay (s)	7.8	0	-	14.4	10.8	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Lanes, Volumes, Timings

11: 42 Ave & 50 St

08-10-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	130	10	6	199	199	38
Future Volume (vph)	130	10	6	199	199	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.978	
Flt Protected	0.956			0.998		
Satd. Flow (prot)	1732	0	0	1826	1789	0
Flt Permitted	0.956			0.998		
Satd. Flow (perm)	1732	0	0	1826	1789	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	83.8			181.6	371.2	
Travel Time (s)	6.0			13.1	26.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	11	7	216	216	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	0	223	257	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	20	25			20
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR

Lane Configurations 

Traffic Vol, veh/h	130	10	6	199	199	38

Future Vol, veh/h	130	10	6	199	199	38

Conflicting Peds, #/hr	0	0	0	0	0	0

Sign Control	Stop	Stop	Free	Free	Free	Free

RT Channelized	-	None	-	None	-	None

Storage Length	0	-	-	-	-	-

Veh in Median Storage	0	-	-	0	0	-

Grade, %	0	-	-	0	0	-

Peak Hour Factor	92	92	92	92	92	92

Heavy Vehicles, %	5	5	5	5	5	5

Mvmt Flow	141	11	7	216	216	41

Major/Minor	Minor2	Major1	Major2

Conflicting Flow All	467	237	257	0	-	0

Stage 1	237	-	-	-	-	-

Stage 2	230	-	-	-	-	-

Critical Hdwy	6.45	6.25	4.15	-	-	-

Critical Hdwy Stg 1	5.45	-	-	-	-	-

Critical Hdwy Stg 2	5.45	-	-	-	-	-

Follow-up Hdwy	3.545	3.345	2.245	-	-	-

Pot Cap-1 Maneuve	549	795	1290	-	-	-

Stage 1	795	-	-	-	-	-

Stage 2	801	-	-	-	-	-

Platoon blocked, %	-	-	-	-	-	-

Mov Cap-1 Maneuve	546	795	1290	-	-	-

Mov Cap-2 Maneuve	546	-	-	-	-	-

Stage 1	790	-	-	-	-	-

Stage 2	801	-	-	-	-	-

Approach	EB	NB	SB

HCM Control Delay, s	13.9	0.2	0

HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR

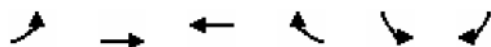
Capacity (veh/h)	1290	-	558	-	-

HCM Lane V/C Ratio	0.005	-	0.273	-	-

HCM Control Delay (s)	7.8	0	13.9	-	-

HCM Lane LOS	A	A	B	-	-

HCM 95th %tile Q(veh)	0	-	1.1	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↑		↑
Traffic Volume (vph)	0	764	1182	50	0	25
Future Volume (vph)	0	764	1182	50	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0			60.0	40.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	40.0				20.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	1830	1830	1555	0	1583
Flt Permitted						
Satd. Flow (perm)	0	1830	1830	1555	0	1583
Link Speed (k/h)		50	50		50	
Link Distance (m)		242.5	261.0		127.0	
Travel Time (s)		17.5	18.8		9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	830	1285	54	0	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	830	1285	54	0	27
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.7	3.7		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization		72.2%		ICU Level of Service C		
Analysis Period (min) 15						

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 0 764 1182 50 0 25

Future Vol, veh/h 0 764 1182 50 0 25

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - 60 - 0

Veh in Median Storage, # 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 5 5 5 5 5 5

Mvmt Flow 0 830 1285 54 0 27

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 - 1285

Stage 1 - - - - -

Stage 2 - - - - -

Critical Hdwy - - - - - 6.25

Critical Hdwy Stg 1 - - - - -

Critical Hdwy Stg 2 - - - - -

Follow-up Hdwy - - - - - 3.345

Pot Cap-1 Maneuver 0 - - - 0 198

Stage 1 0 - - - 0 -

Stage 2 0 - - - 0 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - - 198

Mov Cap-2 Maneuver - - - - -

Stage 1 - - - - -

Stage 2 - - - - -

Approach EB WB SB

HCM Control Delay, s 0 0 26.1

HCM LOS D

Minor Lane/Major Mvmt EBT WBT WBR SBLn1

Capacity (veh/h) - - - 198

HCM Lane V/C Ratio - - - 0.137

HCM Control Delay (s) - - - 26.1

HCM Lane LOS - - - D

HCM 95th %tile Q(veh) - - - 0.5



APPENDIX

SIDRA Roundabout Reports

H

SITE LAYOUT

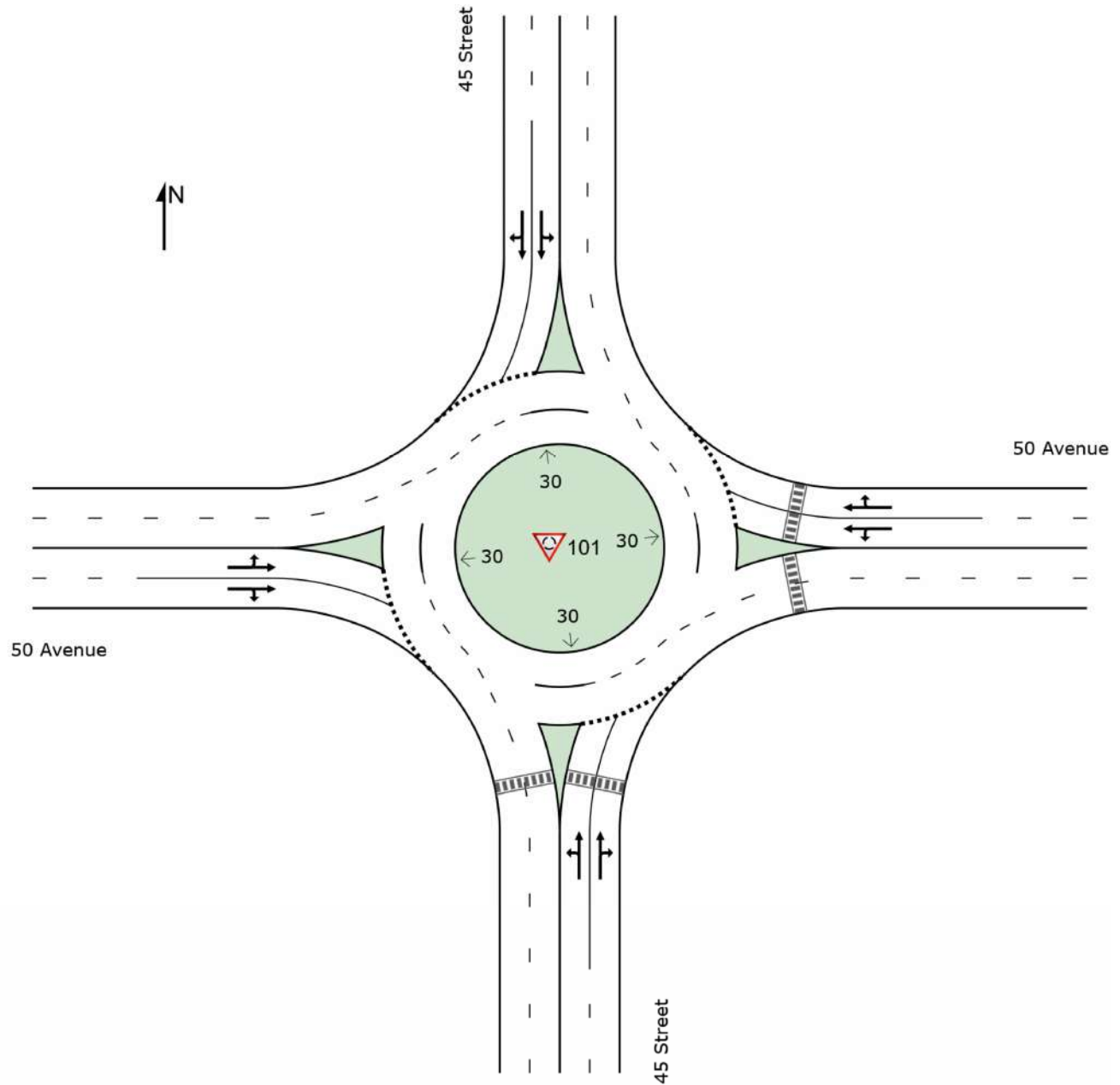
 **Site: 101 [2 Lane - AM - 20Y - Vol Adj (Site Folder: 2 Lane)]**

50 Avenue and 45 Street

Site Category: Future Conditions 1

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

 **Site: 101 [2 Lane - AM - 20Y - Vol Adj (Site Folder: 2 Lane)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

50 Avenue and 45 Street

Site Category: Future Conditions 1

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: 45 Street															
1	L2	All MCs	85	5.0	85	5.0	0.128	6.8	LOS A	0.5	3.6	0.61	0.73	0.61	33.3
2	T1	All MCs	5	5.0	5	5.0	0.128	6.7	LOS A	0.5	3.6	0.61	0.73	0.61	40.5
3	R2	All MCs	143	5.0	143	5.0	0.154	2.8	LOS A	0.7	4.8	0.61	0.54	0.61	33.9
Approach			234	5.0	234	5.0	0.154	4.3	LOS A	0.7	4.8	0.61	0.61	0.61	33.8
East: 50 Avenue															
4	L2	All MCs	85	8.0	85	8.0	0.360	4.5	LOS A	1.9	14.2	0.35	0.20	0.35	34.1
5	T1	All MCs	777	8.0	777	8.0	0.360	0.7	LOS A	1.9	14.5	0.35	0.17	0.35	34.6
6	R2	All MCs	59	8.0	59	8.0	0.360	4.4	LOS A	1.9	14.5	0.34	0.15	0.34	43.0
Approach			921	8.0	921	8.0	0.360	1.3	LOS A	1.9	14.5	0.35	0.17	0.35	35.0
North: 45 Street															
7	L2	All MCs	96	5.0	96	5.0	0.100	11.4	LOS B	0.4	3.1	0.57	0.76	0.57	49.1
8	T1	All MCs	5	5.0	5	5.0	0.072	6.5	LOS A	0.3	2.0	0.58	0.70	0.58	53.4
9	R2	All MCs	46	5.0	46	5.0	0.072	6.7	LOS A	0.3	2.0	0.58	0.70	0.58	52.9
Approach			147	5.0	147	5.0	0.100	9.7	LOS A	0.4	3.1	0.58	0.74	0.58	50.4
West: 50 Avenue															
10	L2	All MCs	75	8.0	75	8.0	0.425	10.2	LOS B	2.4	17.6	0.39	0.22	0.39	42.5
11	T1	All MCs	948	8.0	948	8.0	0.425	0.8	LOS A	2.4	17.9	0.38	0.18	0.38	34.6
12	R2	All MCs	64	8.0	64	8.0	0.425	1.2	LOS A	2.4	17.9	0.38	0.14	0.38	34.3
Approach			1087	8.0	1087	8.0	0.425	1.5	LOS A	2.4	17.9	0.38	0.18	0.38	35.0
All Vehicles			2388	7.5	2388	7.5	0.425	2.2	LOS A	2.4	17.9	0.40	0.25	0.40	35.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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\SIDRA\16898_250806_20Yr Rdbt Option.sip9

MOVEMENT SUMMARY

 **Site: 101 [2 Lane - PM - 20Y - Vol Adj (Site Folder: 2 Lane)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

50 Avenue and 45 Street

Site Category: Future Conditions 1

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				km/h
			veh/h	%	veh/h	%	v/c	sec			m				
South: 45 Street															
1	L2	All MCs	182	5.0	182	5.0	0.375	8.1	LOS A	1.8	13.3	0.73	0.84	0.80	34.2
2	T1	All MCs	60	5.0	60	5.0	0.375	7.9	LOS A	1.8	13.3	0.73	0.84	0.80	41.9
3	R2	All MCs	324	5.0	324	5.0	0.386	3.7	LOS A	2.1	15.0	0.73	0.71	0.79	33.7
Approach			565	5.0	565	5.0	0.386	5.6	LOS A	2.1	15.0	0.73	0.77	0.79	34.6
East: 50 Avenue															
4	L2	All MCs	165	8.0	165	8.0	0.687	7.5	LOS A	6.6	49.5	0.74	0.65	0.85	33.3
5	T1	All MCs	1222	8.0	1222	8.0	0.687	3.4	LOS A	6.7	50.5	0.73	0.62	0.83	34.0
6	R2	All MCs	130	8.0	130	8.0	0.687	6.9	LOS A	6.7	50.5	0.72	0.60	0.81	42.3
Approach			1517	8.0	1517	8.0	0.687	4.2	LOS A	6.7	50.5	0.73	0.62	0.83	34.5
North: 45 Street															
7	L2	All MCs	183	5.0	183	5.0	0.297	13.6	LOS B	1.6	11.9	0.83	0.87	0.83	48.2
8	T1	All MCs	5	5.0	5	5.0	0.245	9.4	LOS A	1.2	8.5	0.80	0.86	0.80	51.3
9	R2	All MCs	101	5.0	101	5.0	0.245	9.5	LOS A	1.2	8.5	0.80	0.86	0.80	50.9
Approach			289	5.0	289	5.0	0.297	12.1	LOS B	1.6	11.9	0.82	0.87	0.82	49.1
West: 50 Avenue															
10	L2	All MCs	103	8.0	103	8.0	0.484	11.1	LOS B	2.9	21.5	0.57	0.39	0.57	42.5
11	T1	All MCs	910	8.0	910	8.0	0.484	1.7	LOS A	3.0	22.3	0.56	0.32	0.56	34.4
12	R2	All MCs	62	8.0	62	8.0	0.484	2.0	LOS A	3.0	22.3	0.56	0.27	0.56	33.9
Approach			1075	8.0	1075	8.0	0.484	2.6	LOS A	3.0	22.3	0.56	0.33	0.56	35.0
All Vehicles			3447	7.3	3447	7.3	0.687	4.6	LOS A	6.7	50.5	0.69	0.57	0.74	35.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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APPENDIX

TEC Oversized Design Vehicles

I

Diagram illustrating the dimensions of a typical 10.0 wide roadway, showing vehicle dimensions and lane markings.

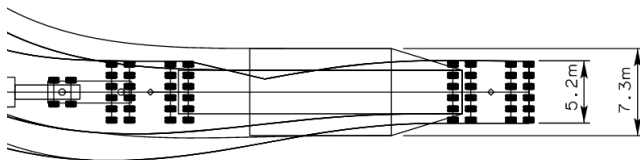
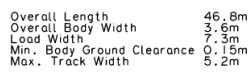
Vehicle Dimensions:

- 2.8 LEGAL DIVISIBLE LOAD WIDTH
- 4.15 (MAXIMUM HEIGHT)
- 0.2
- 2.4 (TRACK)
- 0.6
- 2.6
- 1.0
- 4.2

Roadway Dimensions and Markings:

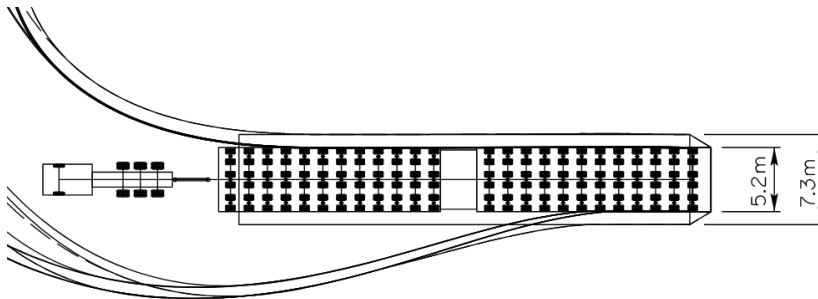
- PERMITTED LOAD WIDTH UP TO 7.3 (24 FEET)
- § ROAD
- 2.1 (OVERHANG)
- 0.8
- 1.3
- 3.10
- 0.6
- 1.5
- 2.1 (OVERHANG)
- 0.3 (MINIMUM)
- § CROWN
- 5.8
- 5.2
- 0.6
- 3.10 (TRACK)
- 10.0 (TOTAL WIDTH)

Typical 10.0 Wide Roadway

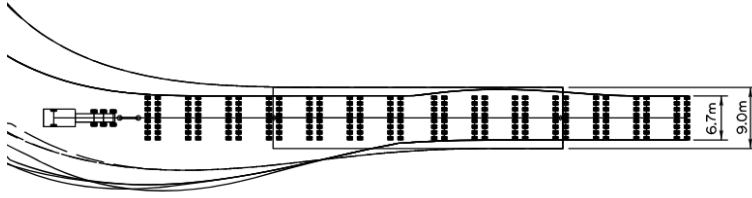


Heavy Hauler (Lowboy)

- 7.3m full width (1.05m overhang)



- 7.3m full width (1.05m overhang)



- 9.0m full width (1.15m overhang)

Reactor Transporter



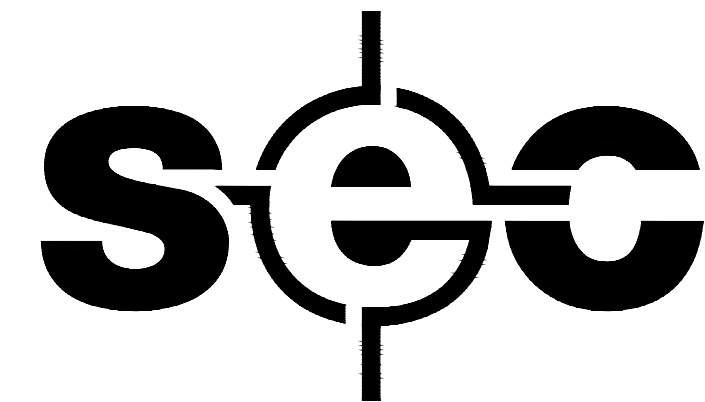
APPENDIX

Westview Drive and 50 Avenue
Improvements 2022 Drawing Set

J

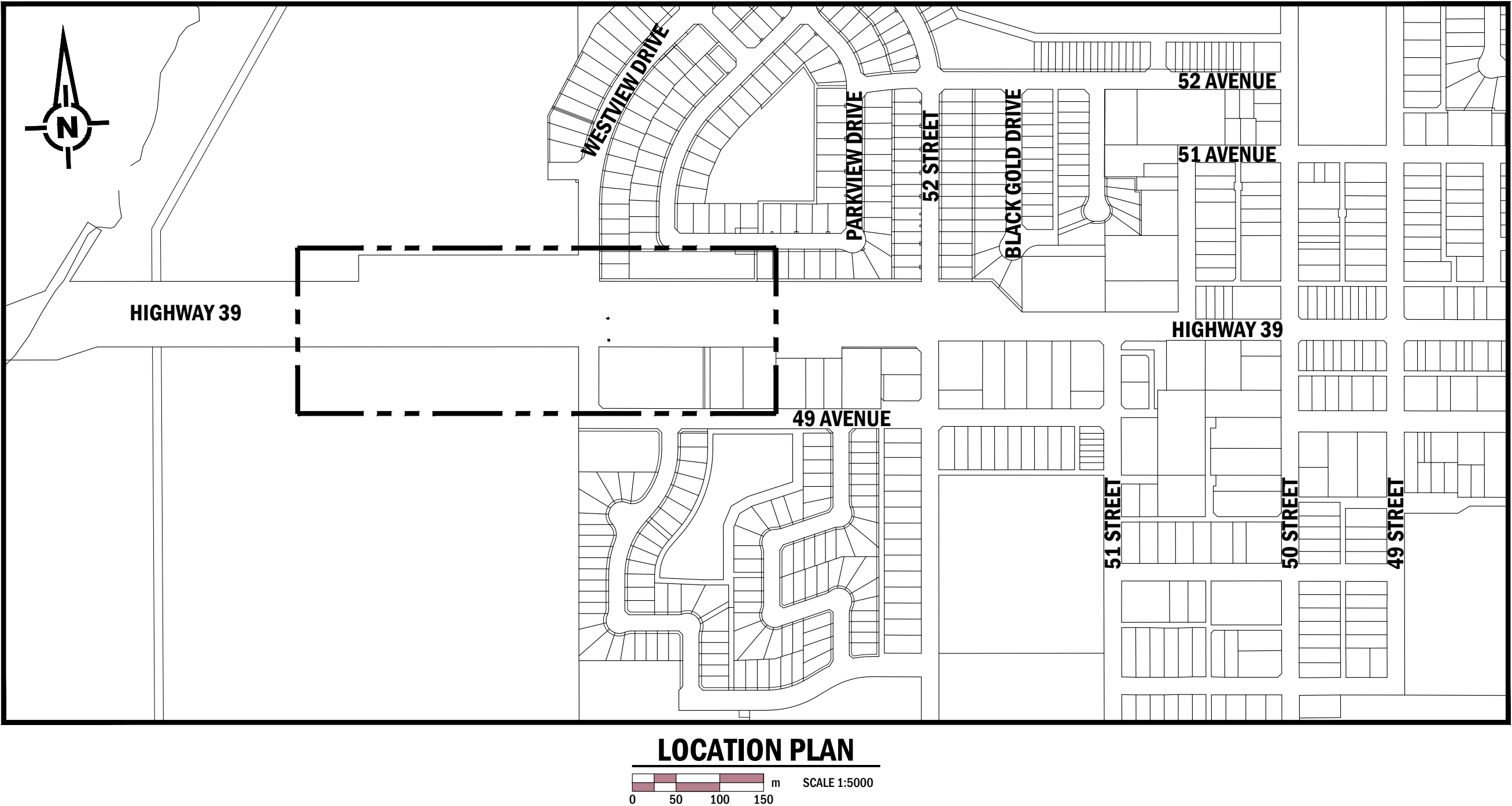
CALMAR SOUTHBRIDGE DEVELOPMENTS INC

HIGHWAY 39 & WESTVIEW DRIVE INTERSECTION IMPROVEMENTS HWY 39 : 10 km 11.925 - 12.459



LIST OF DRAWINGS

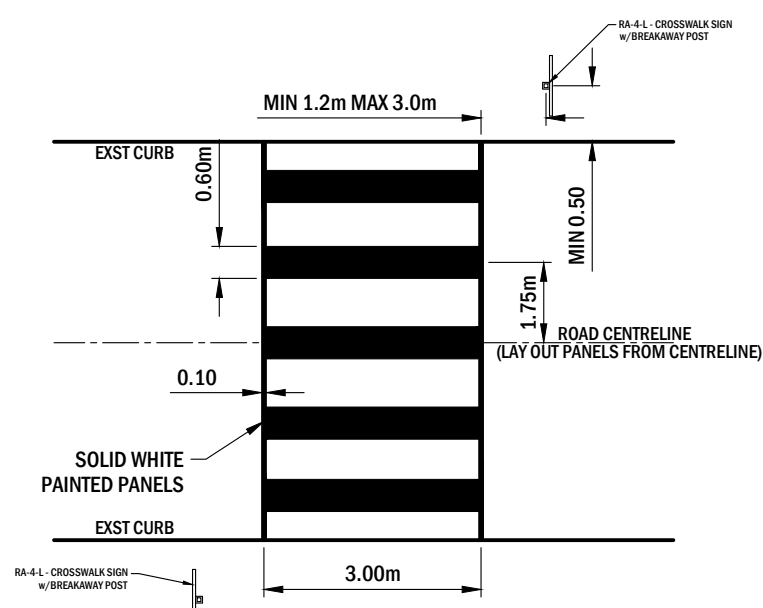
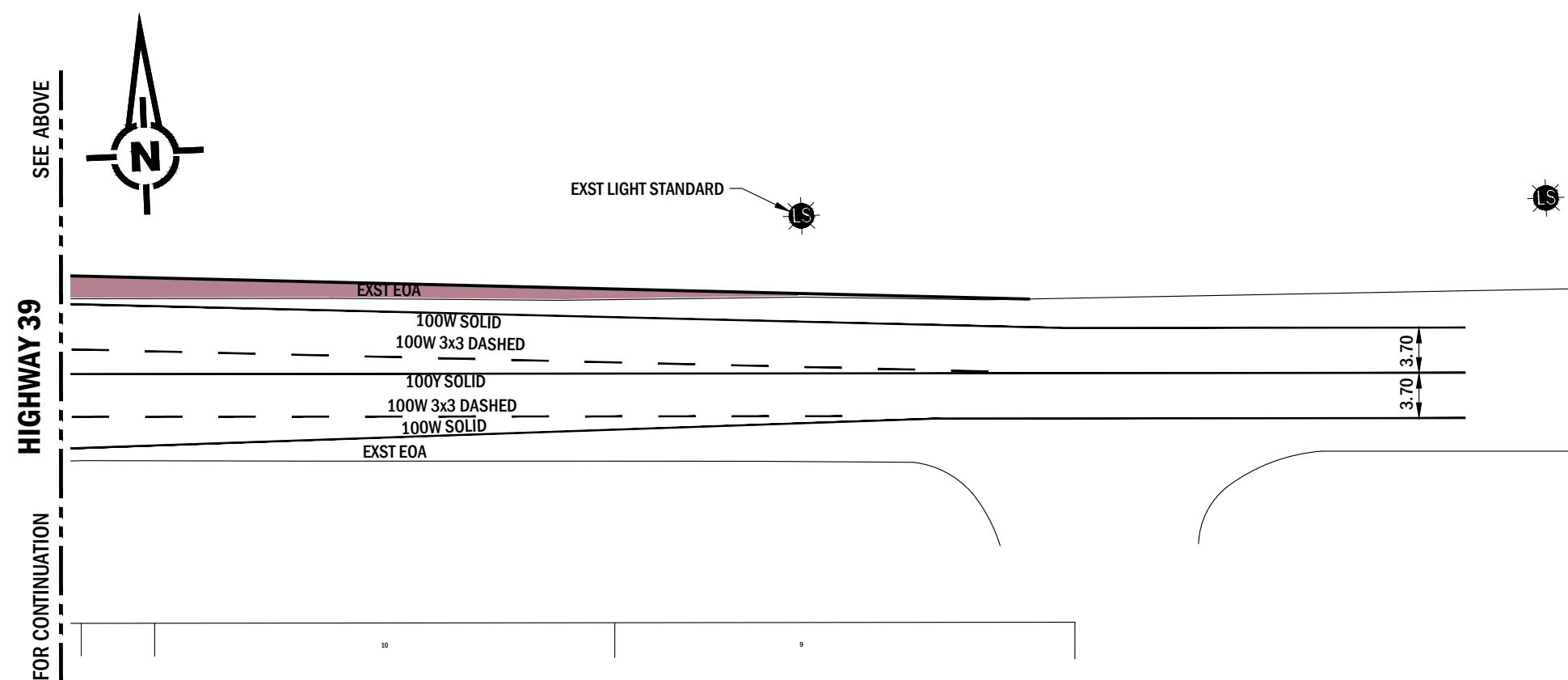
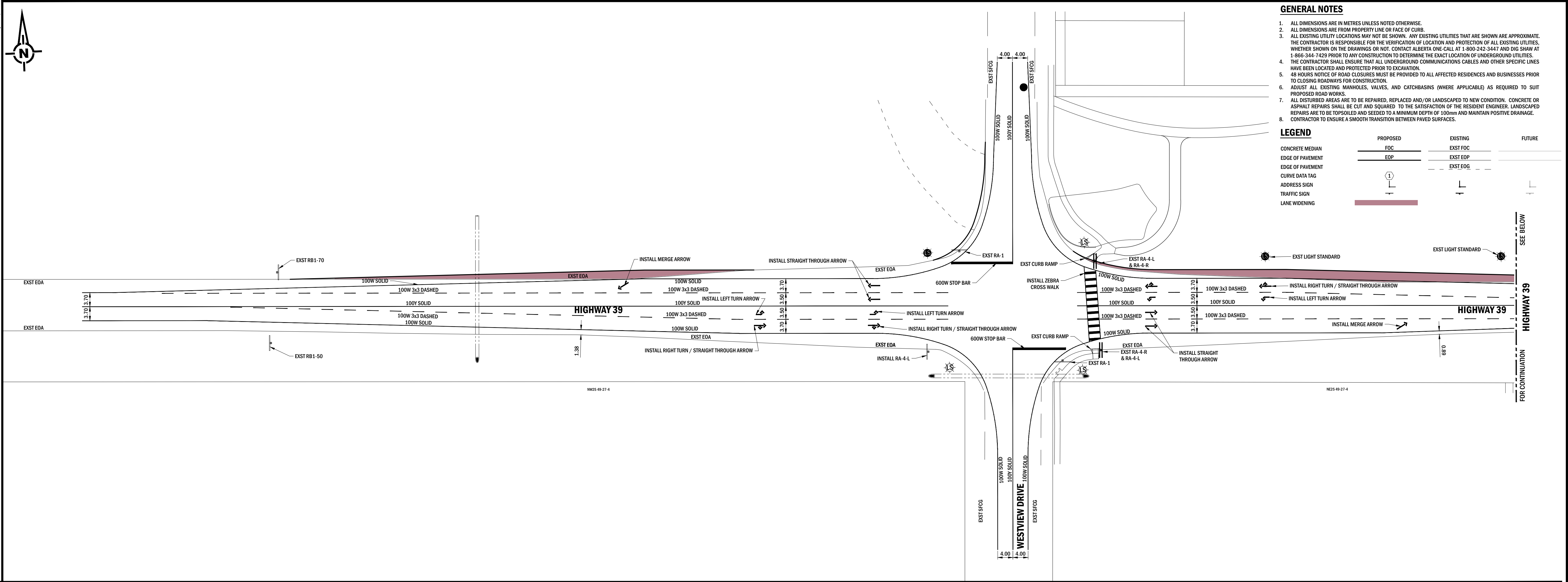
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OVERALL PLANS	
95-14003-M100	HWY WIDENING & MULTIWAYS
95-14003-M101	PAVEMENT MARKINGS & SIGNAGE
PLAN / PROFILES	
95-14003-M200	HIGHWAY 39 - STA 9+675 TO 9+950
95-14003-M201	HIGHWAY 39 - STA 9+950 TO 10+225



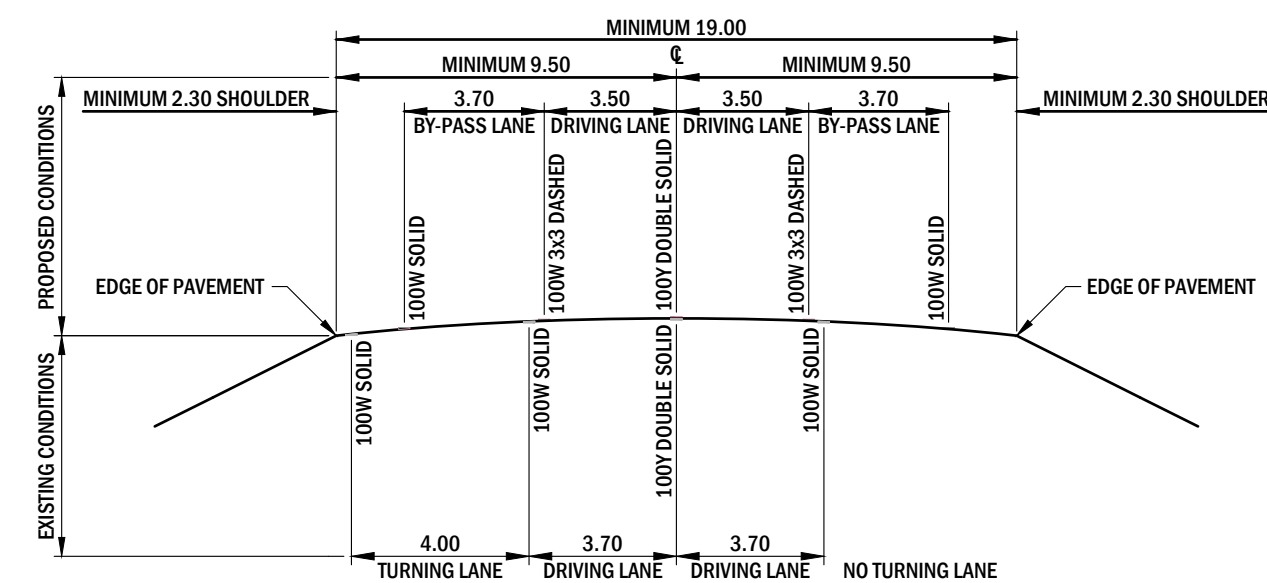
APRIL 14, 2022

UPDATED WALK LOCATIONS

95-14003

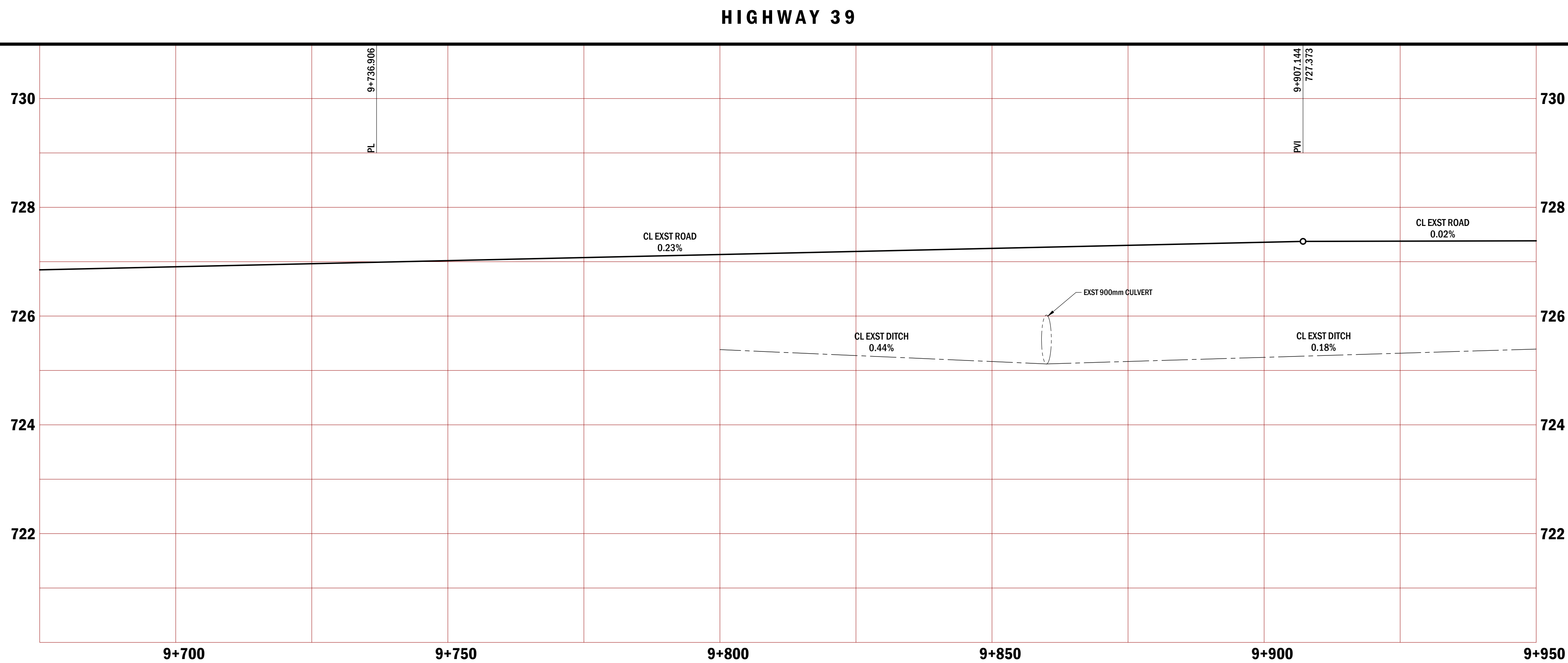
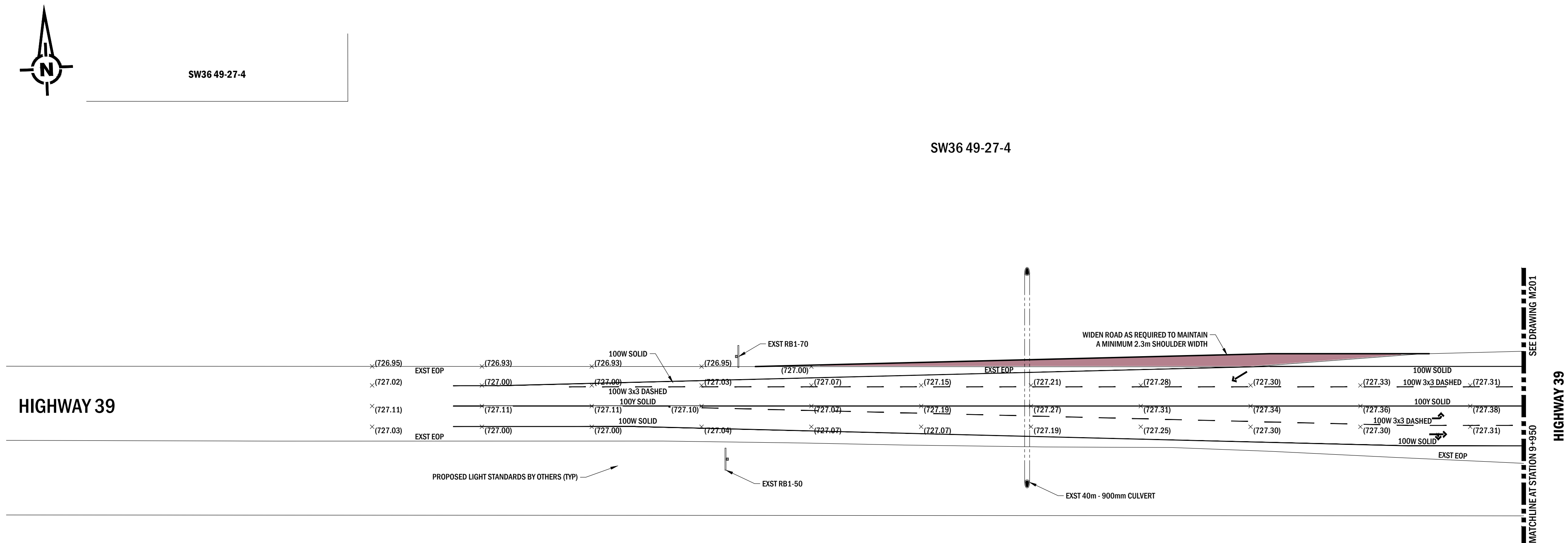


TYPICAL 600 x 3000mm ZEBRA CROSS WALK
N.T.S.



HIGHWAY 39 ROAD IMPROVEMENTS

[illegible]

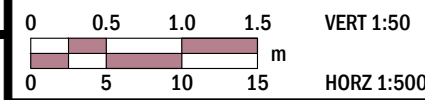


GENERAL NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. ALL EXISTING UTILITY LOCATIONS MAY NOT BE SHOWN. ANY EXISTING UTILITIES THAT ARE SHOWN ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF LOCATION AND PROTECTION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE DRAWINGS OR NOT.
3. CONTACT ALBERTA ONE-CALL AT 1-800-242-3447 PRIOR TO ANY CONSTRUCTION.
4. CONTACT DIS SHAW AT 1-866-344-7429 PRIOR TO ANY CONSTRUCTION.
5. CONTACT THE TOWN OF CALMARC PUBLIC WORKS DEPARTMENT PRIOR TO ANY EXPOSURE AND CONNECTION TO EXISTING INFRASTRUCTURE.
6. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ANY PARTY REQUIRING A CROSSING AGREEMENT AND TO RESPECT ALL CROSSING AGREEMENT REQUIREMENTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE NOTICE TO ANY AFFECTED PRIVATE OR PUBLIC SECTOR REGARDING MUNICIPAL SERVICES AND/OR ACCESS DISRUPTIONS.
8. ALL DISTURBED AREAS ARE TO BE REPAIRED, REPLACED AND/OR LANDSCAPED TO NEW CONDITION. CONCRETE OR ASPHALT REPAIRS SHALL BE CUT AND SQUARED TO THE SATISFACTION OF THE RESIDENT ENGINEER. LANDSCAPED REPAIRS ARE TO BE TOPSOILED AND SEED TO A MINIMUM DEPTH OF 75mm AND MAINTAIN POSITIVE DRAINAGE.

LEGEND

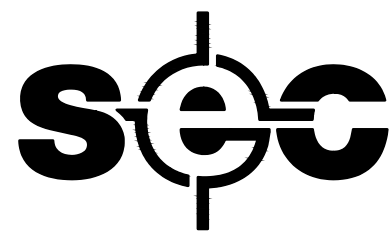
LEGEND	PROPOSED	EXISTING
EDGE OF PAVEMENT	EDP	EXIST EOP
STRAIGHT FACE CURB AND GUTTER	SCFG	EXIST SCFG
ROAD PAINT (0.6m WIDE, SOLID WHITE)	600W SOLID	EXIST 600W SOLID
ROAD PAINT (0.1m wide, SOLID WHITE)	100W SOLID	EXIST 100W SOLID
ROAD PAINT (0.1m wide, SOLID YELLOW)	100Y SOLID	EXIST 100Y SOLID
ROAD PAINT (0.1m wide, DASHED WHITE 3:2 = 5.0m LINE, 5.0m BREAK)	100W 3:3	EXIST SCFG
1.5m ASPHALT TRAIL	1.5m ASPHALT TRAIL	EXIST 1.5m ASPHALT TRAIL
CULVERT		
TRAFFIC SIGN		



E	22	04	14	UPDATED WALK LOCATIONS																
D	16	04	14	REVISED AS PER ALBERTA TRANSPORTATION COMMENTS																
C	14	09	26	REVISED AS PER ALBERTA TRANSPORTATION COMMENTS																
B	14	09	16	REVISED AS PER ALBERTA TRANSPORTATION COMMENTS																
A	14	07	29	ISSUED FOR ALBERTA TRANSPORTATION APPROVAL																
REV	Y	M	D	REVISION DESCRIPTION								DRN	SUPV	DES	CHK	ENG	APP			

PERMIT

ENGINEER

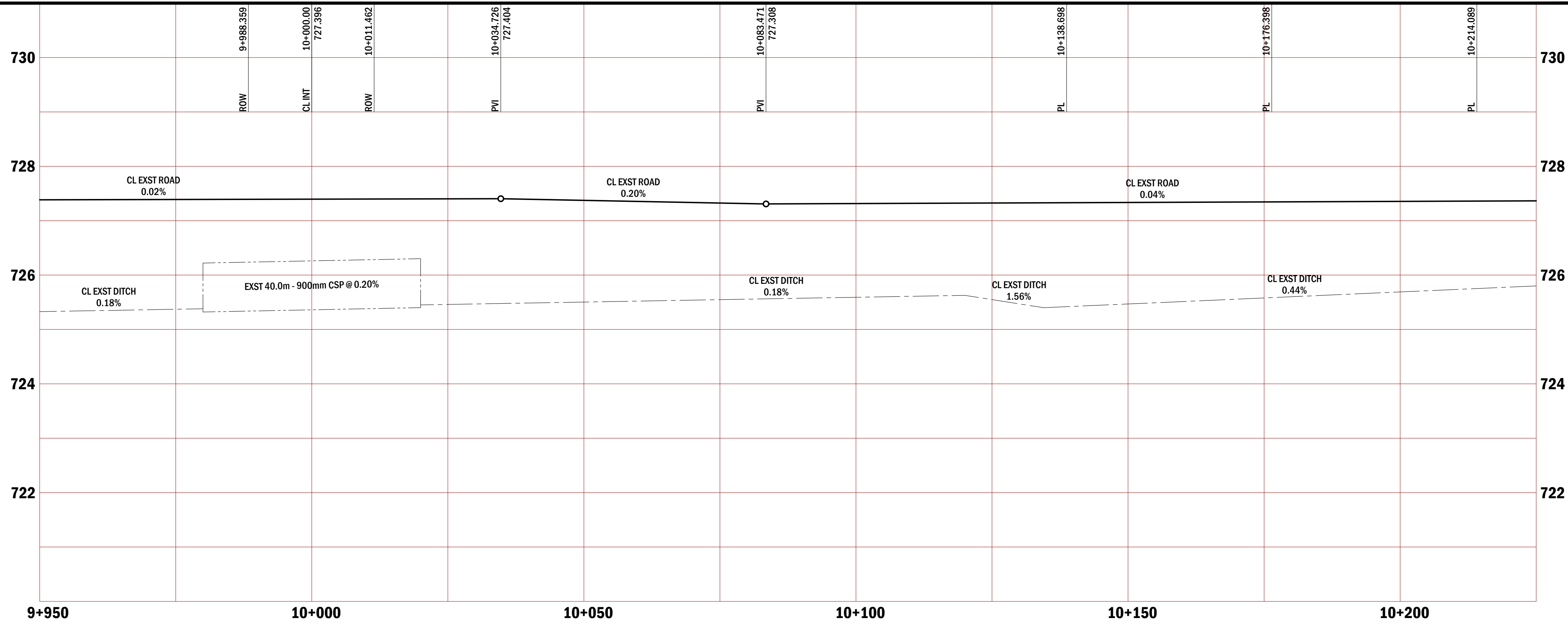
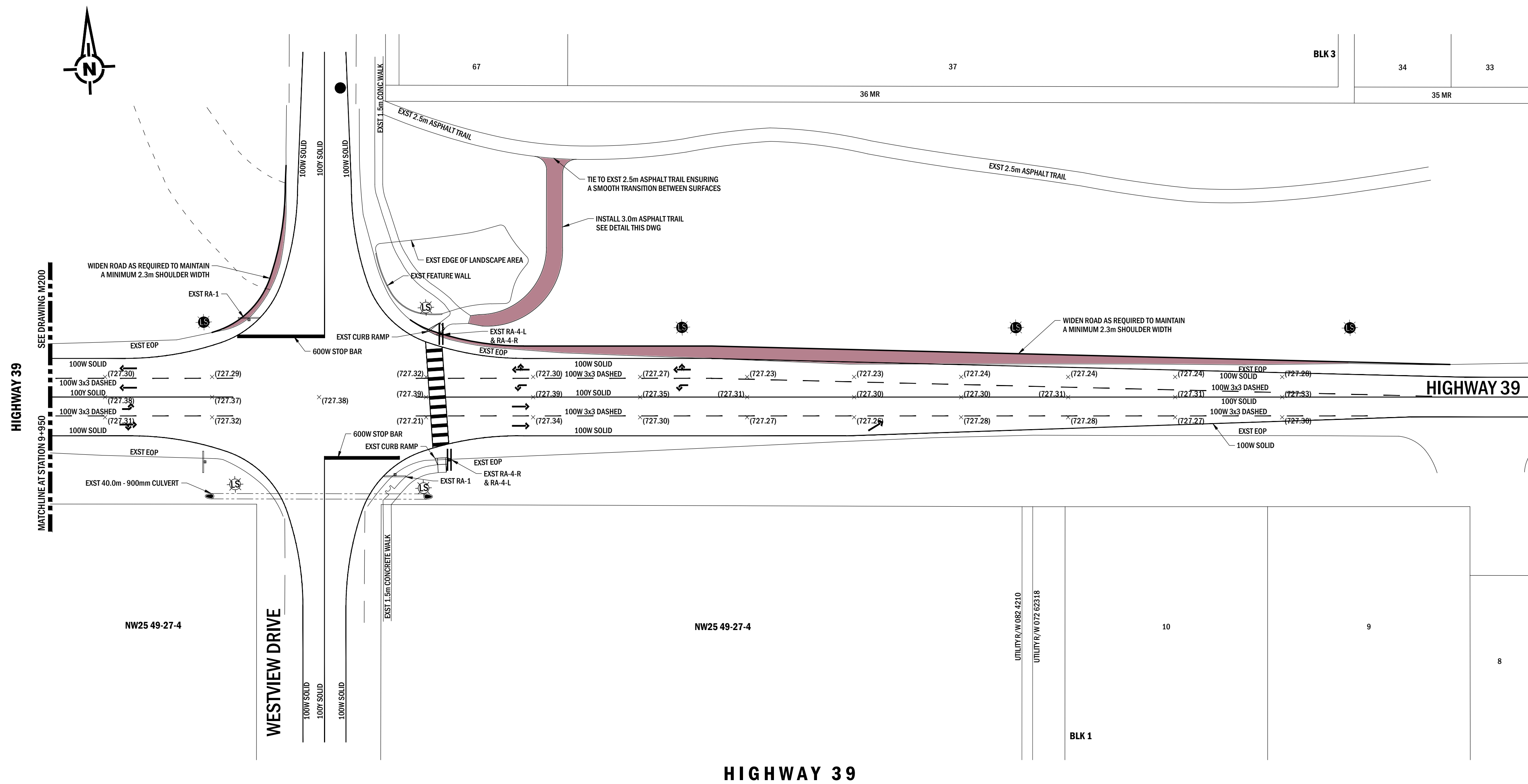


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HIGHWAY 39 & WESTVIEW DRIVE INTERSECTION IMPROVEMENTS
 HWY 39 : 10 KM 11.925 - 12.459
 PLAN PROFILE
 HIGHWAY 39 - STA 9+675 TO 9+950

DRAWING

95-14003-M200

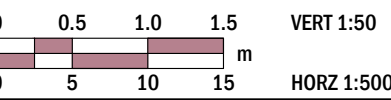
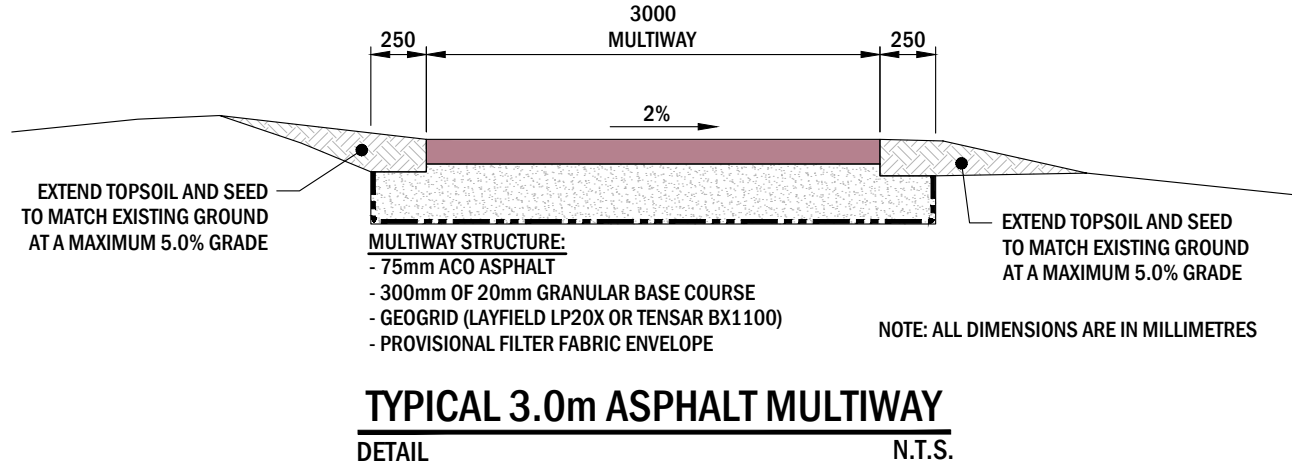


GENERAL NOTES

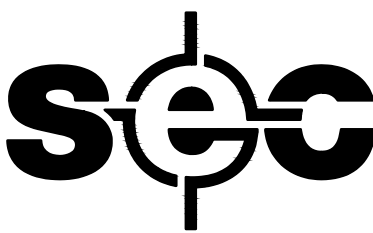
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- THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ANY PARTY REQUIRING A CROSSING AGREEMENT AND TO RESPECT ALL CROSSING AGREEMENT REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE NOTICE TO ANY EFFECTED PRIVATE OR PUBLIC SECTOR REGARDING MUNICIPAL SERVICE AND/OR ACCESS DISRUPTIONS.
- ALL DISTURBED AREAS ARE TO BE RESEED, REPLACED AND/OR LANDSCAPED TO NEW CONDITION. CONCRETE OR ASPHALT REPAIRS SHALL BE CUT AND SQUARED TO THE SATISFACTION OF THE RESIDENT ENGINEER. LANDSCAPED REPAIRS ARE TO BE TOPSOILED AND SEEDED TO A MINIMUM DEPTH OF 75mm AND MAINTAINED POSITIVE DRAINAGE.

LEGEND

	PROPOSED	EXIST'G
EDGE OF PAVEMENT	EQP	EXIST EQP
	SPGC	EXIST SPGC
STRAIGHT FACE CURB AND GUTTER		
ROAD PAINT (0.6m WIDE, SOLID WHITE)	600W SOLID	EXIST 600W SOLID
ROAD PAINT (0.1m WIDE, SOLID WHITE)	100W SOLID	EXIST 100W SOLID
ROAD PAINT (0.1m WIDE, SOLID YELLOW)	100Y SOLID	EXIST 100Y SOLID
ROAD PAINT (0.1m WIDE, DASHED WHITE)	100W 3-3	EXIST SPGC
3-3 = 3.0m LINE, 3.0m BREAK		
1.5m ASPHALT TRAIL	1.5m ASPHALT TRAIL	EXIST 1.5m ASPHALT TRAIL
CULVERT		
TRAFFIC SIGN		



PERMIT _____ ENGINEER _____



SELECT ENGINEERING CONSULTANTS LTD
201, 17220 STONY PLAIN ROAD
EDMONTON AB T5S 1K6 CANADA
TEL 780 651 5777 FAX 780 651 5757
www.selecteng.ca

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